

## Exterior Façade

### Orientation and Characteristics

The Westwood Community Church is located in the center of the Westwood Community plot and is the central most important building on the campus. There is one main entrance to the building, with two drives up to the building, from the northwest and northeast, both of which are pictured on the right.

On both sides of the building, there is a walkway that takes visitors to side doors at the worship space. This walkway has a thatched wooden roof over top of it and a wooden rail alongside it.

The front of the church is wooden planks with glass glazing at the building vestibule and windows. The seven large windows in front of the building all look into the open office space.

Because the only views of the building are of the front and sides, no attention will be paid to the backside of the church in this report. In addition, parking lot lighting will remain the same as the original design, so it will not be included either.

### Design Needs

The exterior façade is obviously an extremely important point of focus for both architecture and lighting design. The lighting façade sets the mood for the entire building. It shows the building entrants what to expect from the building and prepares them for what is inside.

That being said, the exterior façade *must* follow the design goals of the church to a tee. The architect's desire for the building was to create a building that is non-threatening to the user, yet a building that is interesting as well. The architect wanted to create a comfortable, organic building that fits into the Westwood landscape, but a building that wasn't boring.



**Aerial photo of Westwood Site**



**Driving to Westwood from the Northwest**



**Westwood from the Northeast**

## **Design Criteria**

*Appearance of Space and Luminaires and Color Appearance* – Aside from making it easy to enter and exit a building, the primary purpose of exterior lumination is to basically “sell the building.” As a result, the appearance of the space is critical.

*Direct Glare* – Direct glare needs to be minimized in front of the building because people will be driving cars there.

*Light Pollution/Trespass* – Although Westwood Community Church is somewhat isolated, there are still residences nearby and therefore it is best to minimize light pollution just for courtesy’s sake.

*Modeling of Faces / Objects* – The entrance to a building is a common place of socialization. As such, it is a good idea to be sure that people can see each other clearly. In addition, in a dark environment, proper modeling of faces and objects is necessary for basic safety.

*Peripheral Detection* – Peripheral detection is again necessary for basic security reasons, as it makes people more conscious of their surroundings.

*Points of Interest* – The main point of interest in lighting the exterior of a building is the entrance into that building. Strong illuminance levels should be provided to assure that people can locate the entrances with ease.

*Shadows* – Shadows make night vision more difficult and create a potentially hazardous environment. Diffuse lighting systems can eliminate this problem.

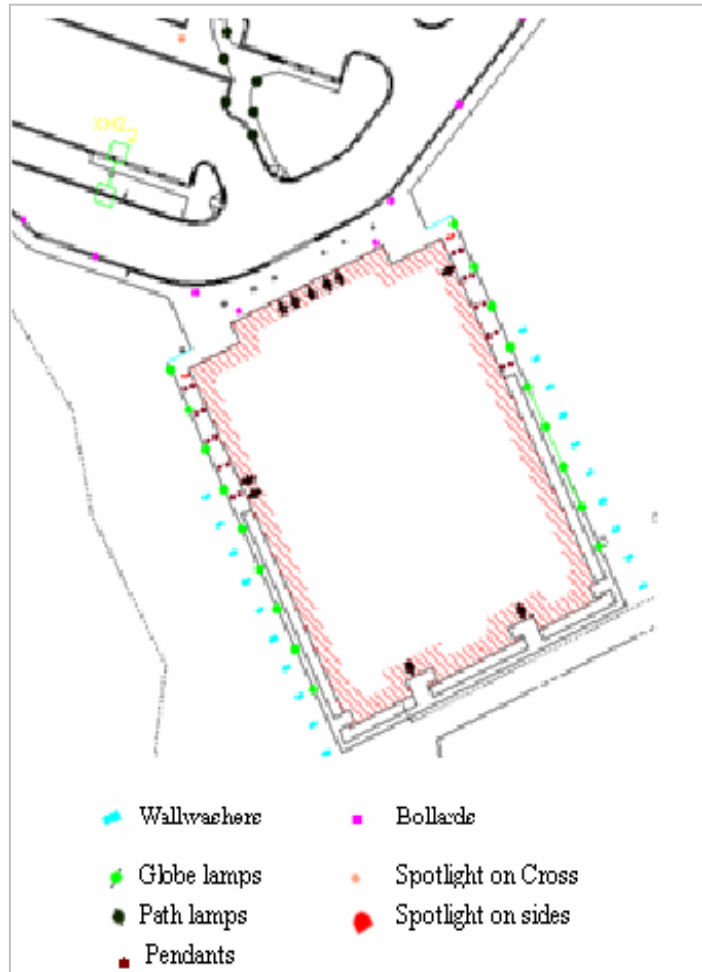
## Re-Design

### Front of Westwood

The redesign of the exterior façade focuses on making the visitor feel comfortable. Therefore, the front of the building was lit as if the visitor were looking at his or her house. Aside from the bollards and path lights necessary for seeing, there is no light near the front of the building. The only light from the building is to be projected from inside the church. Warm light will come from the vestibule on the main level of the church and a blue glow will come from the top level of windows. This glow is coming from the blue wall washers in the open office plan.

### Sides of Building

As for the sides of the building, the stone base is washed with ten wallwashers on each side. These wallwashers are positioned to wash the stone in between each window. The walkways on both sides of the building are lit in two ways. There are 12" globes placed on the top of each concrete column. These globes are sufficient for lighting the walkway. The second lighting comes from shining spots into the wood plank grid above the walkway. These spotlights will have a blue gel, used to obviously make the light blue and match the blue glow coming from the top floor windows. These spots will need to be aimed so that no light spills in to the worship space clerestories above the wood grid.



**Redesigned Lighting Layout**

### Controls

All light will be placed on timers. The blue spot lights and wallwashers will be placed on dimmers. There will be eight exterior circuits in total:

- One for each row of wallwashers.
- One for each row of globes.
- One for each set of pendants and side spotlights.
- One for bollards.
- And one for path and cross lighting.

## Lighting Summary

The lighting design on the exterior façade is effective at creating a comfortable but interesting appearance. As mentioned above, the comfort of the building comes from the fact that very little light is cast onto the building; most of the light is cast out from the building. Along both sides of the building, the globe lights assist the pendants in creating diffuse facial modeling and help to create a line of demarcation around the perimeter of the building, which helps visitors in knowing the exact boundaries of the building space. In addition, the bollards and path lights obviously serve to make the visitors walk up to the church as comfortable as possible. Finally, the warm spotlight on the cross serves to reassure visitors that they are in the right place.

To create interest in the building, blue light was used in the open office windows and in the open wood ceiling above the walkway. Also, the stone walls along the sides of the building were washed with warm spots in order to create visual interest for drivers approaching the building from the northwest and northeast drives.



**Walkway Lighting:** Two spotlights (pictured on the top right) are clamped on top of the beam and aimed so that light does not enter the clerestories on the right. The “blueness” of this light will serve to pull bugs out of the walkway. Also note the two rows of five pendants hung from the beam and the globes, which are to be placed on each of the stone pillars.



**Photoshop rendering of the front façade.  
Not pictured: front bollards and side stone wallwashers.**



**A look into the open office windows from in front of the church. The blue wallwashers create an uplifting, heavenly feeling. Image was produced in Lightscape.**

### Lamp Schedule

Fixture Designation	Lamp Type	CCT	CRI	# of Lamps	Input Power	Ballast Type
A	Stone Wallwasher	3000	100	1	50 W	Electronic
B	Bollard	2000	21	1	100 W	Electronic
C	Globe Lamps	2700	100	1	70 W	None
D	Floodlight on Cross	2750	100	1	50 W	None
E	Path Lamps	4000	70	1	60 W	Magnetic
F	Spots for walkway	3000	85	1	250 W	
G	Pendant	3200	70	1	50 W	Electronic

#### About the Lamps:

- A. The stone wallwasher was chosen from BK Lighting because it has a wide flood lamp with a 60 degree spread. Because of the large spread of this lamp, the lamps only need to be positioned 5' from the building. In addition, the cutoff on the lamp is very sharp, ensuring that no light will enter into the classrooms.
- B. Architectural Area Lighting's CB16S square bollard was chosen for the walkway in front of the Westwood Community Church. These bollards are full cutoff, so no light will be projected up above the fixture, and they have a concrete finish that should match well with the natural materials used in the Westwood façade.
- C. The globe lamps were taken from BEGA's classic caged sphere pole mounted luminaries. For the use of this lighting plan, the pole will be removed from the lamp and only the acrylic sphere with aluminum guard will be kept. Bega does not specify a 60W fixture, but it accepts 100W A-19 lamps, so switching the bulb to an A-19 70W lamp should be no problem.
- D. The lamp specified to light the cross is a narrow floodlight from Cooper Lighting. The Sanibel 301 has a 25 degree beam spread so when the lamp is placed at the foot of the cross, the light will spread approximately 3'6" at the horizontal member, which is enough to cover the cross without spilling into the parking lot.
- E. The path lamps used are low level DCB fixtures. They are unobtrusive and highly directional, perfect for lighting the walkway.
- F. The Beamer IV Projector from Erco is a narrow outdoor metal halide spotlight. The projector will be specified with a sky blue interference color filter in order to create the blue glow.
- G. The pendants hanging over the side walkways are equipped with HID direct downlights. The pendants are designed for outdoor use.

**Lamp Photos**



**A**



**B**



**C**



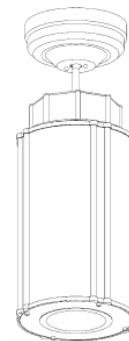
**D**



**E**



**F**



**G**

**Power Density**

Fixture Designation	# of Fixture	Input Power	Total Power
A	20	50 W	1000 W
B	8	100 W	800 W
C	18	70 W	1260 W
F	4	250 W	1000 W
G	20	50 W	1000 W

(fixtures D and E are not considered because they lie outside the measured area)

**Total Power = 5060 W**

Approximate Area of Lighted Zone = 18,617 ft<sup>2</sup>

Power Density = 5060 W / 18,636 ft<sup>2</sup> = .27 W/ft<sup>2</sup>

**.27 W/ft<sup>2</sup> is just above the required .25 W/ft<sup>2</sup>!**