Lighting Introduction

Lighting is essential to both the aesthetic appeal and performance of the Franklin Care Center. Patients living in the Franklin Care Center will be elderly, and may not be leaving the Center on a daily basis. It is crucial to design a space that will maintain a comfortable, residential atmosphere. Special needs of the eyes arise with age, consequently these needs must be taken into consideration when designing the lighting. Adequate light levels much be achieved with a residential, aesthetically pleasing design, while also maintaining a low power density.

Four spaces will be the focus of this lighting redesign: the Main Entrance Lobby, Chapel, Physical Therapy Suite and Exterior Courtyard. Each of these spaces presents its own lighting challenges which were address in the design criteria for that space.

Problem:

Generally, the elderly suffer from reduced acuity and contrast sensitivity. To compensate for these eye problems increased illumination may be necessary, contrast should be used in hazardous areas, but avoided in general lighting, adjacent spaces should have relatively consistent illumination values, glare should be avoided and daylight should be taken advantage of. Since this will be a LEED certified building, it is imperative that the lighting design be as energy efficient as possible.

Solution:

Luminaires were chosen based on the application, potential for glare, aesthetics, and efficiency. Layout and spacing options were explored and finalized using AGI32 lighting calculation software. Daylighting was taken into account where appropriate based on daylight analysis. The power density for each space was calculated and compared to ASHRAE 90.1. LEED Optimizing Energy points are awarded based on the percentage that the actual power density is below ASHRAE's value. While this is energy in general and not just energy used for lighting, it is essential to design each space as energy efficiently as possible.

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