Reverie

A recreational and commercial youth center that aims to promote **youth culture, institutional development, and economic growth**. A tutorial center, fitness center, art studio, restaurants, cafes, and an arcade are some of the spaces that can be found in the building.

Architectural Design Concept: Growth

The center is a place to explore hobbies, discover talents, and build relationships. Growth is reflected in the design through the incrementing elevations that goes from the center to the east and then to the west.

Lighting Design Concept

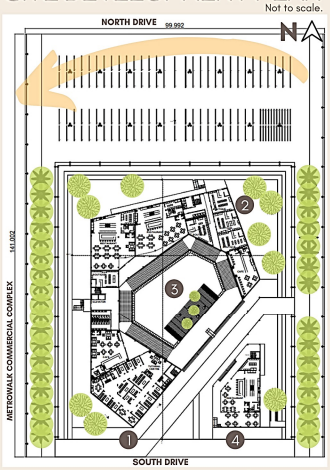
Reverie's lighting design **enhances the function** of each space and dwells on the **user's experience** by encouraging interaction, boosting morale, and increasing productivity.

Lighting Design Goals

- Integrate daylighting and indoor lighting to conserve energy.
- Utilize design-appropriate daylighting strategies.
- Ensure visual comfort by providing suitable lighting for each space.
- Choose light sources that are energy and cost efficient.

SITE DEVELOPMENT PLAN

Not to scale.



4 Cafe

located at the second floor of the annex building in the front part of the site.

About the Site

Coordinates: 14.5865° N, 121.0651° E
Location: Metrowalk Parking, Ortigas Ave. cor. Meralco Ave., Pasig City
Lot Area: 14100 sqm
Orientation: This U-shaped building has a facade facing the south and it is located in a highly urbanized area with very few trees and behind a commercial complex.
Topography: Flat
Climate: Tropical
Hours of Daylight: 11 to 12 hours
Source: https://weatherspark.com/y/156864/Average-Weather-in-Pasig-City-Philippines-Year-Round

Daylighting Strategies

1 **Wooden Vertical Louvers** - placed in the west and southwest side to regulate the light that enters the building

2 **Overhangs** - provide shade and prevent water from running off the walls

3 **Trees & Plants** - provide shade and block direct sun exposure

Sidelighting

Curtain walls (bilateral lighting) - allows natural light to penetrate
Fixed and casement windows - for private spaces

Surface Finishes

These materials mostly make up the building. Most surface finishes have high Solar Reflectance Index (SRI).

Wood
75% SRI

Steel Frame
25% SRI

White Tiles
90% SRI

White Wall
86% SRI

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CAFE

Lighting Design Concept

The cafe lighting design focuses on the **experience and comfort** of the users and it also contributes to the **initial impression and identity** of the building as it is located in front (south).

Recommended Illumination Level

IESNA - 200 (Dining Room - Reading/Writing)

Lighting Specifications

Ambient Lighting - PHILIPS Green Space G5
Luminous Flux: 2100 lm
Wattage: 19 W
Luminaire Efficacy: 111 lm/W
CCT: 3000 K
CRI: >80

Source: Philips

Task Lighting - PHILIPS Slim Balance
Luminous Flux: 2500 lm
Wattage: 25 W
Luminaire Efficacy: 100 lm/W
CCT: 4000 K
CRI: >80

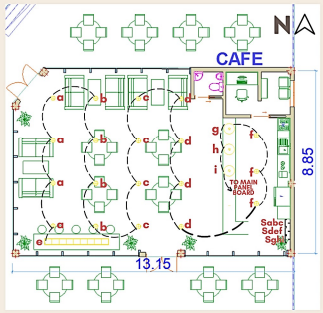
Source: Philips

Task Lighting - PHILIPS Fresh Food
Luminous Flux: 2700 lm
Wattage: 55 W
Luminaire Efficacy: 49 lm/W
CCT: 3000 K
CRI: >80

Source: Lumsearch

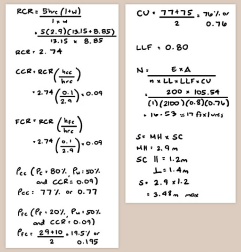
Lighting and Switching Layout

Not to scale.



Computations

E = 200 lux
LL = 2100 lm
LLF = 0.80
Area = 105.54 sqm
length = 13.15 m
width = 8.85 m
height = 2.9 m
Pc = 80%
Pw = 50%
Pf = 20%
hcc = 0.1 m
hrc = 2.9 m
hfc = 0.1 m



AMPHITHEATRE AND GARDEN

Lighting Design Concept

The amphitheatre promotes **interaction** with one another or with their environment and it provides **safety** through the lighting in the steps.

Precedents

The amphitheatre will utilize **step lights** for the stairs and **bollards** for the pathways. These lights help ensure safety by guiding people's walkways.

Source: Pinterest

Source: Pinterest

Source: Pinterest

Source: Pinterest

Lighting Specifications

Accent Lighting - PHILIPS UNILinear Flex
Luminous Flux: 3250 lm
Wattage: 46 W
Luminaire Efficacy: 65 lm/W
CCT: 3000 K
CRI: >80

Source: Philips

Accent Lighting - PHILIPS UNIBollard
Luminous Flux: 760 lm
Wattage: 15 W
Luminaire Efficacy: 40 lm/W
CCT: 3000 K
CRI: >80

Source: Philips

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Cafe Interior Perspectives

Analysis

SITE DEVELOPMENT PLAN

Sunshading Devices
The use of vertical louvers in the south and southwest areas regulate the light that enters the building. Since the longest side of the building is located on the west, the vertical louvers will contribute to attaining thermal and visual comfort of the users especially in the afternoon, which is the hottest time of the day. Moreover, the louvers add to the overall aesthetic on the exterior of the building and on the interior through the shadow patterns that are formed.

Sidelighting
The use of floor-to-ceiling walls or curtain walls which applies bilateral lighting takes advantage of daylight and helps conserve money and energy. Moreover, having curtain walls also maximizes the views. The use of casement and fixed windows in private areas allow light to pass through and also enable users to control daylight and wind by opening or closing the windows

CAFE

The cafe's orientation is facing the south, which is also the front part of the site. As the cafe contributes to the initial impression and identity of the entire building, the lighting design aims to catch the attention of passersby through its bright and uplifting lighting. Moreover, as the cafe can be a place for studying and reading, the lighting design is also deemed appropriate for this purpose. There is also task lighting on some areas of the room such as the bar table and the kitchen counter to motivate productivity and provide visual comfort.

Additionally, it has curtain walls on the north, south, and west sides while there are fixed and casement windows on the east part where the kitchen is located. The cafe also experiences shade from the roof overhangs. These factors make the most of daylighting and at the same time control the light to attain visual comfort.

AMPHITHEATRE AND GARDEN

The amphitheatre and garden is a place where people can hang out with their friends or relax with nature. The lighting design encourages people to hang out in the steps of the stairs or in the benches under the trees. Moreover, it gives importance to safety by lighting pathways at night and guiding users.

Conclusion

Lighting design is efficient and effective when the designer considers the end users and at the same time knows how to take advantage of daylighting and combine it with artificial lighting. Incorporating both daylighting and artificial lighting effectively in a certain space provide an overall good and comfortable experience for the users and it also saves money and energy. It is important not to only consider the aesthetic factors but also understand the parameters and guidelines on how to have an efficient and effective lighting design.

Recommendations

For future studies, it would be better if the designer would perform different simulations on applications such as Dialux. Moreover, doing the costing for the lighting fixtures will also enable the designer to select lighting fixtures that fit within the budget. Lastly, creating an actual lighting design for the outdoor space would also allow the designer to better understand the space and improve the overall output.

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