

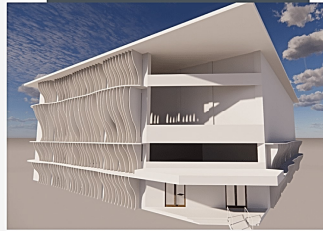
# PERFORMING ARTS CENTER

ARCH 143 FINAL PLATE  
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2018-10658

## PROJECT BACKGROUND

The site is located in the Government Center of Makati City. The chosen lot is part of the Riverside Development Zone that aims to revitalize the areas adjacent to Pasig River by creating commercial, cultural, entertainment, and tourist-oriented developments.

The proposed project conforms to the masterplan for the RDZ as it is a projected center for culture and entertainment. The project aims to be a center for culture, learning and community engagement while intending to become a landmark that enhances and adds to the character of its environment.



## MOVEMENT AND FLUIDITY

### 01.

The form of the structure was designed to promote the continuity of green space to blur the lines between exterior and interior, and further promote an open and inviting space for the community.

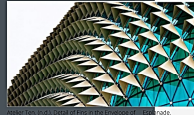
### 02.

Fluidity and movement are emulated in the facade with the dynamic changes of depth in the brise soleil.

## PRECEDENTS

### ESPLANADE THEATERS ON THE BAY

The external skin of the Esplanade was designed to allow views to the outside and to generate optimal daylighting while still having maximum shading. To achieve this, the designers had to examine the solar path over the building and calculate the shading angles for the various surface orientations of the building.



### PETER HALL PERFORMING ARTS CENTER

Peter Hall has a triple-height, galleried foyer that functions as both a cafe for students and staff during school days, and as a foyer for audiences during events in the auditorium. It has a 'diagrid' timber roof structure, which is naturally daylight and overlooks a landscaped courtyard which allows views in and out of the building and blurs the boundary between interior and exterior.



## SITE DEVELOPMENT PLAN

Site is oriented along the Northeast - Southwest axis. It is bounded by the Pasig River to the Northeast, a proposed public library to the Northwest and a public park to the Southeast. The main access point is in the southwest with Sr. Osmena street.

Taking advantage of the views to the public park, the lounges and cafe will be placed along the southeast. Additionally, the garden will be placed in the Northeast portion of the site, taking advantage of the views to the river and park, and the shade from the proposed structure. Parking will be placed in the Northwest area, since it is the area with optimal shading.



## DAYLIGHTING STRATEGIES

### 01.

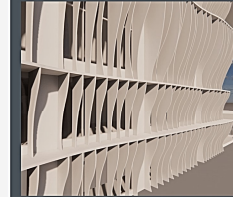
The lobbies and circulation are located along the southwest area for optimal daylighting

### 02.

Big windows are placed on the Southeast and Southwest facades to let in maximum daylight

### 03.

To reduce heat gain, a skin of brise soleil is designed for shading



Close up view of the brise soleil

TIME	SOUTHEAST FACING			
	WINDOW 1		WINDOW 2	
	OVERHANG DEPTH (m)	FIN DEPTH (m)	OVERHANG DEPTH (m)	FIN DEPTH (m)
8:00 AM	1.62-6.43	0.09-0.79	1.21-4.82	0.12-0.98
10:00 AM	0.51-2.45	0.07-1.11	0.41-1.84	0.09-0.73
12:00 NN	0.30-1.33	0.40-3.20	0.22-1.08	0.21-1.01
2:00 PM	0.32-1.26	0.42-3.26	0.23-0.96	0.20-1.07
4:00 PM	1.48-2.52	0.43-0.53	1.11-1.89	0.54-0.66

WINDOW	FIN DEPTH (m)	SOUTHWEST FACING			
		12:00 NN	12:00 NN	12:00 NN	12:00 NN
		OVERHANG DEPTH (m)	FIN DEPTH (m)	OVERHANG DEPTH (m)	FIN DEPTH (m)
WINDOW 1	0.24-0.86	1.18-4.07	0.30-1.49	0.36-2.07	1.76-2.31
WINDOW 2	0.24-0.86	1.18-4.07	0.30-1.49	0.36-2.07	1.76-2.31
WINDOW 3	0.24-0.86	1.18-4.07	0.30-1.49	0.36-2.07	1.76-2.31
WINDOW 4	0.24-0.86	1.18-4.07	0.30-1.49	0.36-2.07	1.76-2.31
WINDOW 5	0.24-0.86	1.18-4.07	0.30-1.49	0.36-2.07	1.76-2.31
WINDOW 6	0.24-0.86	1.18-4.07	0.30-1.49	0.36-2.07	1.76-2.31
WINDOW 7	0.24-0.86	1.18-4.07	0.30-1.49	0.36-2.07	1.76-2.31
WINDOW 8	0.24-0.86	1.18-4.07	0.30-1.49	0.36-2.07	1.76-2.31
WINDOW 9	0.24-0.86	1.18-4.07	0.30-1.49	0.36-2.07	1.76-2.31
WINDOW 10	0.24-0.86	1.18-4.07	0.30-1.49	0.36-2.07	1.76-2.31
WINDOW 11	0.24-0.86	1.18-4.07	0.30-1.49	0.36-2.07	1.76-2.31
WINDOW 12	0.24-0.86	1.18-4.07	0.30-1.49	0.36-2.07	1.76-2.31



The days used for the profile angle calculations include the two solstices and equinox, and two from the hottest months in the Philippines



The tabulated data includes the calculated values in a range of angles to largest depth



To translate the concept of movement and fluidity, the fins and overhangs are designed with varying depths

## THEATER LIGHTING DESIGN

For the purposes of this project, the lighting design is focused on the House Lights and Working Lights.

House Lights are the ones used for the auditorium area that are normally on before and after a concert and during performance intervals.

Working Lights are for the normal day-to-day routine in the theatre, including rehearsals and clean up and maintenance. Working lights are simpler and lower power systems that are cheaper and easier to maintain than the Performance and House Lighting Systems.

## LIGHTING SPECIFICATIONS AND PEGS



Photo by Ibrahim Ramamurti

### ROOF LIGHTS

- Mounted near the ceiling and used to provide a diffused general light over the entire house.

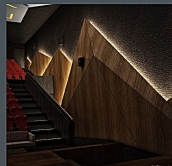


Photo by Studio Ardite

### RECESSED LIGHTS

- Mounted on the wall along the corridors that lead to the house



Photo by GIOVANNI NARDI

### STEP LIGHTS

- Mounted on the stairs and balcony railings to highlight the edges and steps

## CALCULATIONS

Lighting requirements in EN 12464-1

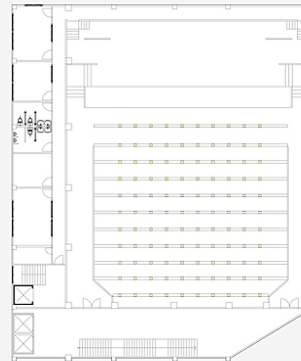
Type of area, task or activity	Lux-level (E <sub>m</sub> )	Glare rating (LGR <sub>L</sub> )	Uniformity (U <sub>g</sub> )	Colour rendition (R <sub>a</sub> )	Specific requirements
Auditorium, lecture hall	500	19	0.60	80	Lighting should be controllable to accommodate various AV needs.

Calculating the needed number of units for the roof lights.

$$N = \frac{500 \times (22.30m \times 23m)}{(1 \times 7100 \times 0.44 \times 0.75)}$$

$$N = 109.45$$

$$N = 110 \text{ units}$$



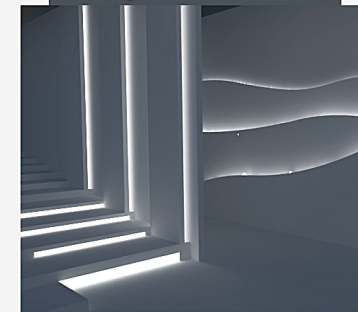
REFLECTED CEILING PLAN

## INTERIOR MAIN SPACE

The roof lights located along the ceiling in strategically placed covers act as a diffused general source of light for the entire house. The LED Rosco Braq luminaire used allows for adjustments in the level of illumination, which is perfect for the different levels required before, during and after performances.

There are additional lights for the corridors and stairways to help visitors traverse the circulation paths more comfortably. These lights are dimmer as they are perpetually activated throughout the duration of performances.

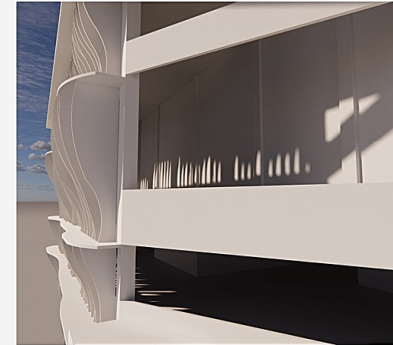
Conceptual Model of Corridor and Stairway Lights



## SITE DEVELOPMENT PLAN

The formulated Site Development Plan follows the plans that were anchored in the choices of taking advantage of scenic views and maximum daylight, and adopting the strategies learned in class for reducing heat gain and getting optimum shading.

It is recommended to expand the calculations for the profile shading to an entire year for a more accurate study on the sun path for the site, so the structure can be better equipped in the Philippine climate.



## OVERALL EFFECT OF LIGHTING

The brise soleil cast playful light and shadow patterns across the interior's walls and floors as the sun travels along its path, which perfectly emulates the targeted concept of movement and fluidity.

The interior lights for the theater are chosen and designed for both functionality and ambiance. These are designed to follow the chosen concept and to provide the necessary illumination to the space, while still being discreet enough so it does not take the focus away from the centerpiece of the theater.