

**Assignment-**  
**06\_Case\_Studies**



## INFO

Project Name: Oasia Hotel Downtown

Architect: WOHA

Location: Singapore

The climate of Singapore is tropical rainforest climate with high humidity and ample rainfall. As a result, it is mostly wet and hot. The tower situates at the periphery of the central business district close to the seashore.



## DESIGN INTENT

The project creates a different alternative for the design of skyscrapers in the center of urban areas. It introduces a tropical approach of high-rise towers with their perforated facades, permeable massing, and sky gardens for the central business district of the city. By vertically creating different spatial blocks, each with its own sky garden, the tower is conceptually a sandwich in response to its spatial programs according to the architect. The project maximizes the use of the land by creating several elevated grounds as sky gardens in the middle of the tower, introducing more public and green spaces for the skyscraper in the heart of the city.



## BUILDING ENVIRONMENTAL DESIGN FEATURES - A-1

Solar/Conduction

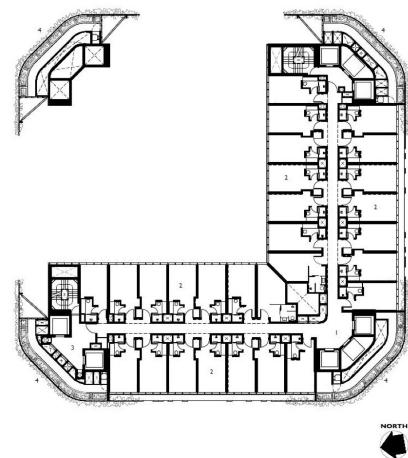
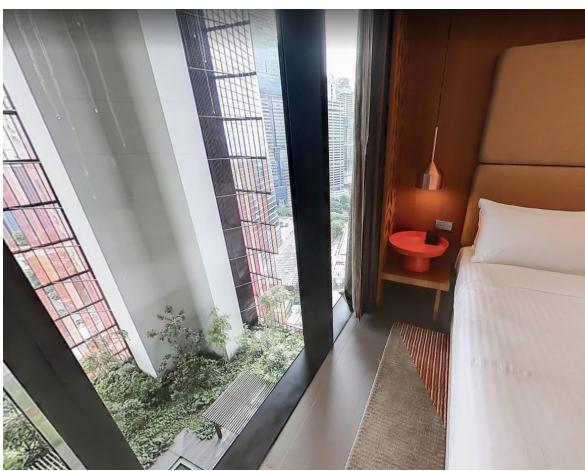
The perforated shading metal panels with creeper block the sun and prevent the building envelop from direct sunlight, which also reduce the heat transfer through conduction



## **BUILDING ENVIRONMENTAL DESIGN FEATURES - A-2**

### Solar / Infiltration

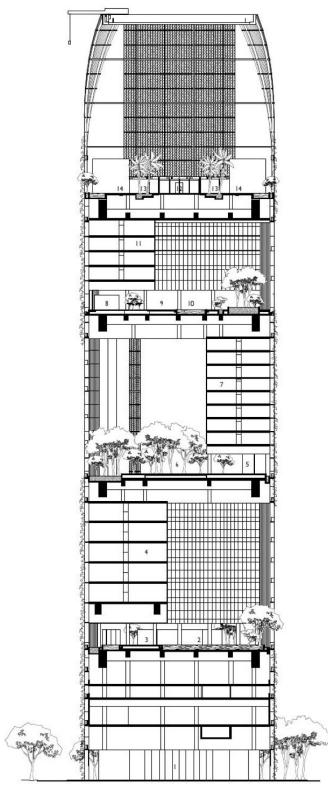
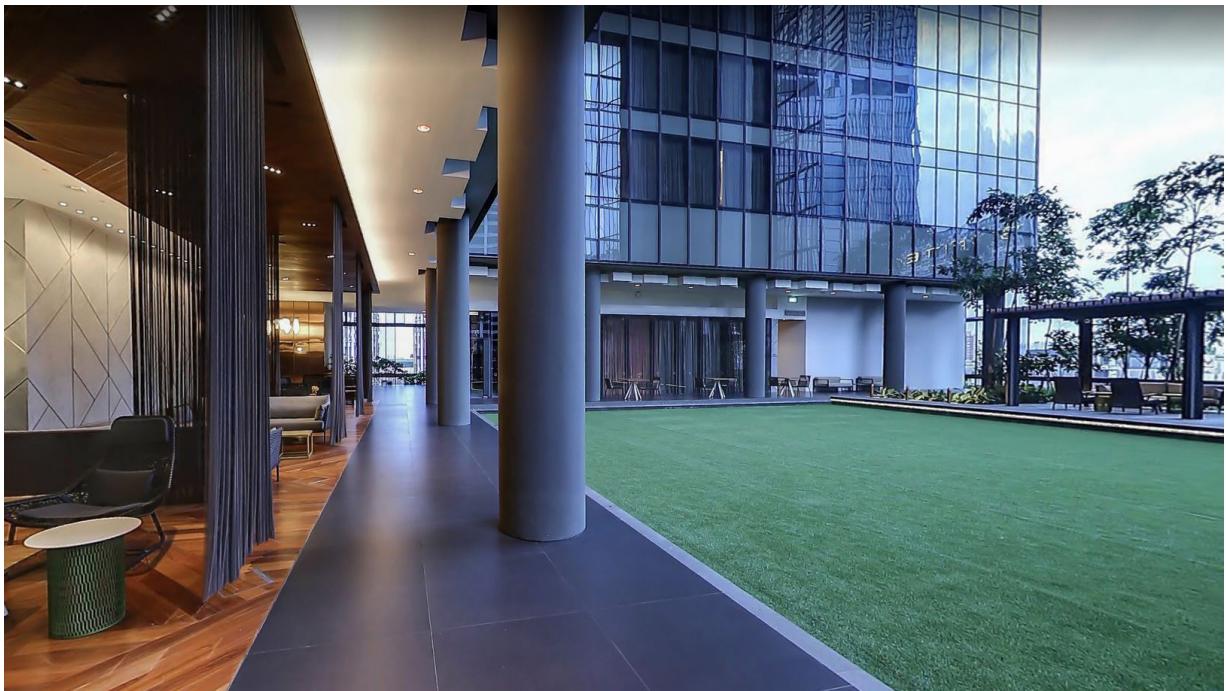
The system of the curtain wall including the shading panels encloses some of the area of hotel rooms, protecting it from sunlight and prevent the interior conditioned air from leaking through means of infiltration.



## BUILDING ENVIRONMENTAL DESIGN FEATURES - B-1

### Solar

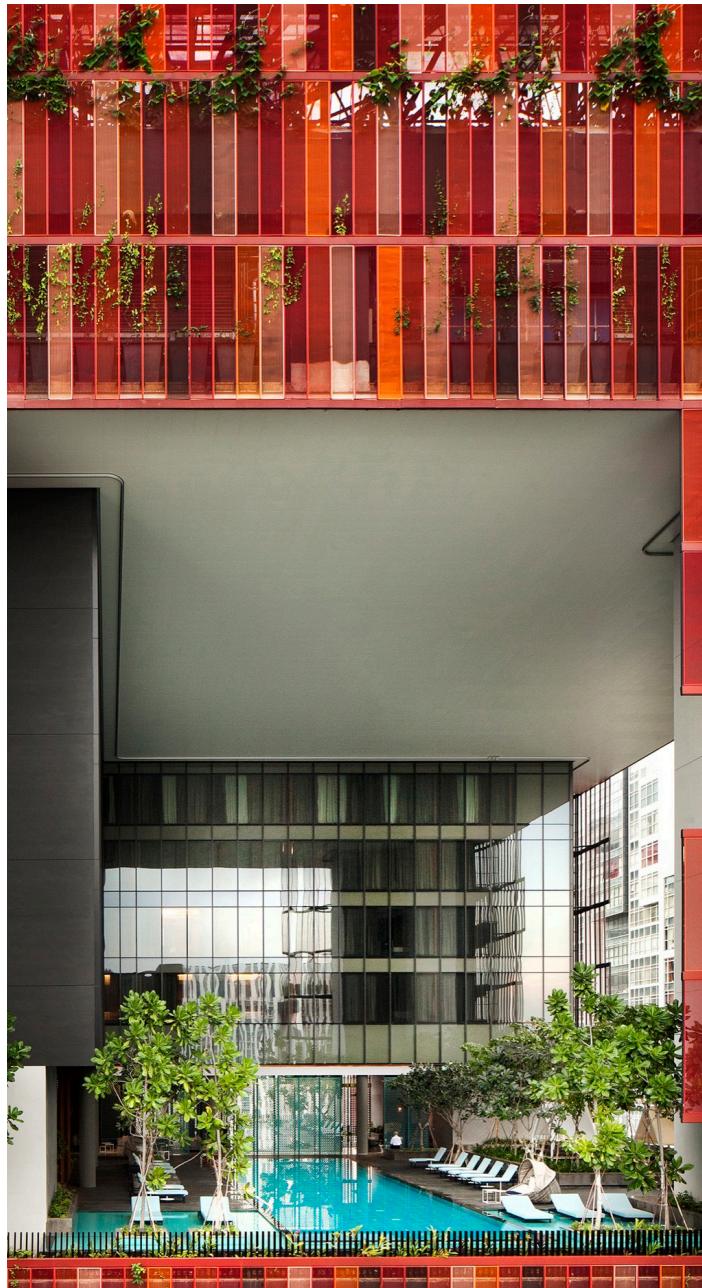
The void in the middle of the tower, where the sky garden is, creates a huge shading and buffer area for the hotel rooms that are facing inward.



## **BUILDING ENVIRONMENTAL DESIGN FEATURES - B-2**

### Ventilation

Hugh openings on the tower created by introducing sky gardens allows ventilation. The advantage of ventilation plus the micro climate created by the vegetation in the sky garden form a comfortable semi-outdoor space which becomes a great commonal space in the heart of the city.



## BUILDING ENVIRONMENTAL DESIGN FEATURES - B-3

### Evaporation

The swimming pool together with the water features cools down the surrounding air. With the help of ventilation, the micro climate at the sky garden should be comfortable.



## POSSIBLE ALTERNATIVES

Without further information, it is hard to tell the type of glass it has for the envelope. However, since there are two situations for the envelop, facing outward or toward sky gardens, the one facing sky garden could be fully transparent to maximize the amount of natural light. And the density of the shading panels could have more relation to its orientation in terms of avoiding direct sunlight.