CASE STUDY – WINK HOTEL SAIGON CENTRE

GENERAL INFORMATION

- Site area : 1,110 m^2
- GFA : 9,475 m^2
- Project type : Hospitality building
- Floors : 12 Floors
- Basements : 02 basements
- Location : District 1, Ho Chi Minh City, Vietnam
- Owner : Phuc Dien Development Investment Joint Stock Company

Level 3M, Capital Place Tower
6 Thai Van Lung Street, Ben Nghe Ward
District 1, Ho Chi Minh City, Vietnam
T: +84 28 2250 8530

WINK-HOTELS.COM
INDOCHINA VANGUARD HOTELS VIETNAM COMPANY LIMITED

CONTENTS

Level 3M, Capital Place Tower
6 Thai Van Lung Street, Ben Nghe Ward
District 1, Ho Chi Minh City, Vietnam
T: +84 28 2250 8530

WINK-HOTELS.COM
INDOCHINA VANGUARD HOTELS VIETNAM COMPANY LIMITED

I. INTRODUCTION

The idea of this project is to construct a sustainable and eco-friendly building in Vietnam hotel industry, in accordance with standards of LEED (Leadership in Energy and Environmental Design) Green Building Rating System. There have been many conscious efforts toward "going green" in hotels, and Wink Hotel Saigon Centre project sets the target of being a part of sustainability through achieving the LEED certification.

Figure 1. Wink Hotel Saigon Centre is located in the center area of Ho Chi Minh city (Vietnam)

Being recognized by U.S. Green Building Council (USGBC) that the project has met all requirements of international environmental design standards, the hotel will not only have positive impacts on the environment but also result in significant reduction of operation costs. Lighting and air quality, vegetation, relaxation areas, cleanliness, functionality and thermal comfort together will contribute to the effective operation of the hotel.

Key highlights:

- Water-efficient systems reduce potable water demand
- High-quality facility components reduce chemicals and contaminants in office area
- High efficiency (high COP) VRF reduces energy cost
- Efficient light with LED lamps having high lighting efficiency.

In this case study, other highlighted features which make the hotel become a LEED-certified building are also introduced in detail.

II. TRANSPORTATION

1. Bicycle parking

The purpose is to promote bicycling and transportation efficiency, as well as provide an ideal storage area for bicycle users. The project provides two bicycle storages in basement 1 with a total of 16 bicycle spaces,

Level 3M, Capital Place Tower
6 Thai Van Lung Street, Ben Nghe Ward
District 1, Ho Chi Minh City, Vietnam
T: +84 28 2250 8530

WINK-HOTELS.COM
INDOCHINA VANGUARD HOTELS VIETNAM COMPANY LIMITED

including 10 long-term storages for staff and 4 short-term storages for visitors. Both two storages are next to the stairway toward the first floor, and distances from the stairway to the main entrance and functional entry of the building are 37 meters and 28 meters, respectively.

Figure 2. Illustrating pictures of bicycle racks used in Wink Hotel Saigon Centre

2. Car parking

To minimize the environmental harms associated with parking facilities and reduce pollution by promoting alternatives to conventionally fueled automobiles, the project encourages everyone to use green vehicles and carpool vehicles. In details, the project provides 1 parking space for carpool vehicles, 1 parking space for electric vehicles and 1 space reserved for the electric vehicle supply equipment (EVSE) among 18 car parking spaces in basement 1.

Figure 3. Illustrating pictures of carpool and electric car parking spaces

III. SUSTAINABLE FEATURES

1. Building envelope

Roof assemblies include concrete deck, insulation layer, two layers of plaster, and have a total thermal transmittance U-value of 0.6 W/m^{2}K. External walls including a layer of brick and two layers of plaster have the total thermal transmittance U-value of 0.5 W/m^{2}K. Indoor comfort conditions are ensured for all areas within the building,

Level 3M, Capital Place Tower
6 Thai Van Lung Street, Ben Nghe Ward
District 1, Ho Chi Minh City, Vietnam
T: +84 28 2250 8530

including common spaces, working areas, and hotel rooms.

The system of external double-glazed windows with low-e coating, low U-value, and good light transmittance (LT) value works effectively to limit solar radiation, energy loss but increase daylighting harvesting. In other words, the glazing system limits the amount of heat and UV-rays transmitted through glass, but still allows light to easily pass through the window. This contributes to the reduction of interior artificial lighting and cooling demand.

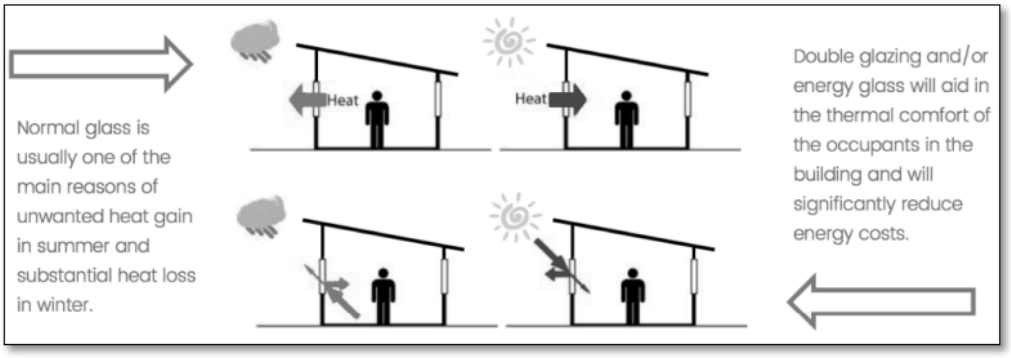

Figure 4. Difference between single-glazed windows and double-glazed windows

2. Daylighting

The project provides effective daylighting for 90% of regularly occupied spaces. Shading manual blinds are installed on the façades to reduce glare for regularly occupied spaces.

Figure 5. Daylighting in Wink Hotel Saigon Centre

3. Waste management

To reduce the amount of waste generated by either building occupants or guests, as well as encourage everyone to classify waste, the project reserves an area of 17 m^2 at basement 1 for the central waste storage. This central waste storage includes separate areas for different types of waste such as recyclable waste, domestic waste, and hazardous waste.

- Recyclable waste: 240-liter waste bins with labels are provided for five types of recyclable waste: paper, cardboard, glass, metals, and plastics.
- Domestic waste: a 660-liter waste bin with label is provided.
- Hazardous waste: 240-liter waste bins with labels are provided for batteries and e-waste.

Level 3M, Capital Place Tower
6 Thai Van Lung Street, Ben Nghe Ward
District 1, Ho Chi Minh City, Vietnam
T: +84 28 2250 8530

Waste storage capacity is completely sufficient for the amount of waste generated within the building. In specific, the amounts of recyclable, domestic, and hazardous waste are estimated to be 0.06 m^3, 0.6 m^3, and 0.2 m^3. The actual capacity of recyclable, domestic, and hazardous waste storages are 1.2 m^3, 0.66 m^3, and 0.48 m^3 respectively.

4. Thermal comfort

Meeting the requirements of ASHRAE Standard 55-2017 for thermal comfort conditions for human occupancy, thermal comfort controls are provided for 100% of individual occupant spaces and in 100% of shared multi-occupant spaces. Internal conditions of office spaces are:

- Operative temperature: 24°
- Air speed: 0.1 m/s
- Relative humidity: 65%

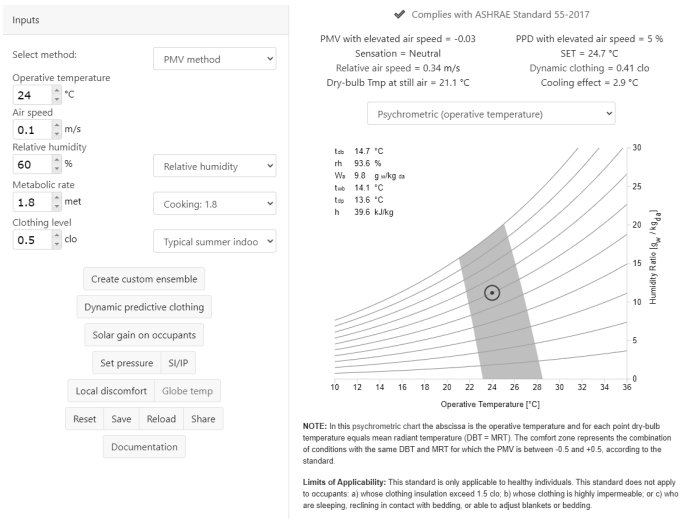

Figure 6. Thermal comfort of office spaces complies with ASHRAE Standard 55-2017

Internal conditions of kitchen space:

- Operative temperature: 24°C
- Air speed: 0.1 m/s
- Relative humidity: 65%

Level 3M, Capital Place Tower
6 Thai Van Lung Street, Ben Nghe Ward
District 1, Ho Chi Minh City, Vietnam
T: +84 28 2250 8530

WINK-HOTELS.COM
INDOCHINA VANGUARD HOTELS VIETNAM COMPANY LIMITED

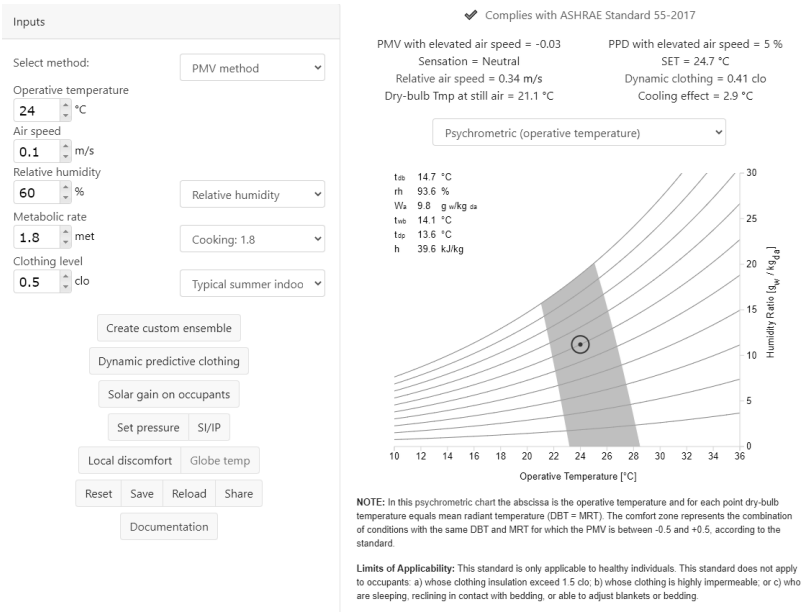

Figure 7. Thermal comfort of kitchen space complies with ASHRAE Standard 55-2017

Internal conditions of gym spaces:

- Operative temperature: 24°C
- Air speed: 0.1 m/s
- Relative humidity: 65%

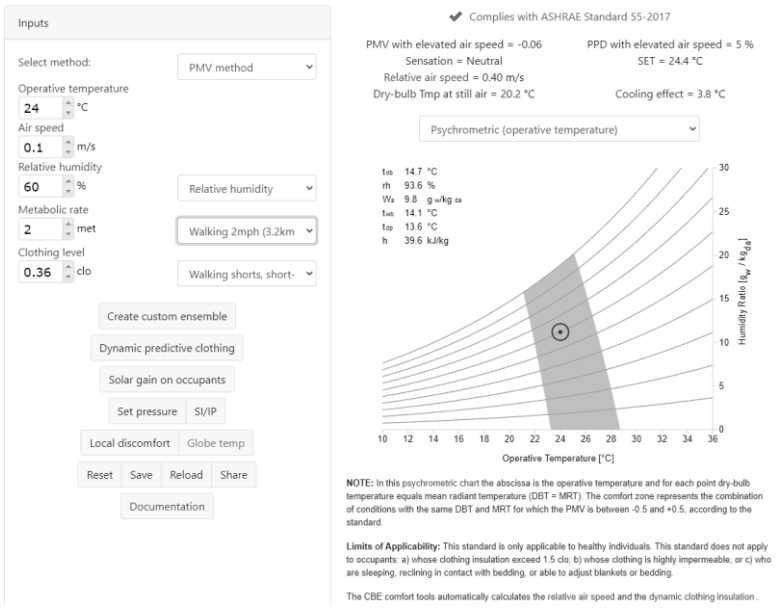

Figure 8. Thermal comfort of gym space complies with ASHRAE Standard 55-2017

Level 3M, Capital Place Tower
6 Thai Van Lung Street, Ben Nghe Ward
District 1, Ho Chi Minh City, Vietnam
T: +84 28 2250 8530

WINK-HOTELS.COM
INDOCHINA VANGUARD HOTELS VIETNAM COMPANY LIMITED

IV. WATER EFFICIENCY

1. Indoor water use

The project aims to reduce indoor water consumption through using water-efficient fixtures such as low flowrate water closets, urinals, and lavatory faucets. Besides, lavatory faucets are equipped with LEED-compliant pressure compensating aerators to reduce water flowrate. The result achieved for indoor water use reduction is 48% compared to LEED baseline for indoor water use.

Figure 9. Pressure compensating aerator attached to lavatory faucets

2. Outdoor water use

Selecting native and climate-adapted plants whose water demand is not high helps saving irrigation water although the project does not have to use potable water for irrigation. In details, 100% of irrigation demand is covered by condensate water reuse. Being considered as pure as distilled water and to have relatively low mineral content, condensate water from HVAC system is collected and channeled into irrigation system. Condensate water pump and condensate water tank (300 liters) are placed on the roof of the building for the best collection and distribution efficiency. In specific, amount of condensate water collected is 217 liters/day while irrigation demand is only 48 liters/day.

Multifunctional hand sprinkler equipment is a solution that helps reduce outdoor water consumption for irrigation. The equipment is movable and convenient for irrigation work.

Level 3M, Capital Place Tower
6 Thai Van Lung Street, Ben Nghe Ward
District 1, Ho Chi Minh City, Vietnam
T: +84 28 2250 8530

Figure 10. Irrigation equipment used for the project

3. Water metering

The project aims to manage water use and track water consumption by installing permanent water meters for all water subsystems. A system of 3 water meters and 4 water sub-meters have been installed to measure these water consumptions:

- total potable water use for the building
- total hot water use for the building
- total condensate water use for irrigation
- total potable water use for indoor plumbing fixtures and fittings (2 sub-meters)
- total potable water use for pantry area
- total potable water use for laundromat

Sub-meters will be manually read and periodically checked for monitoring purposes concerning water consumptions and potential damages.

V. INDOOR ENVIRONMENTAL QUALITY

1. Lighting

Lighting system of the building uses only LED lights for energy efficiency and savings. Common areas within the building are equipped with occupancy sensors to effectively control lighting in parking areas, stairs, common toilets and bathrooms, storages, and office spaces. For hotel guest rooms, RCU (Room Control Unit) system is installed and connected to BMS (Building Management System) in order to automatically turn off lighting fixtures and outlets when nobody is in the room.

Level 3M, Capital Place Tower
6 Thai Van Lung Street, Ben Nghe Ward
District 1, Ho Chi Minh City, Vietnam
T: +84 28 2250 8530

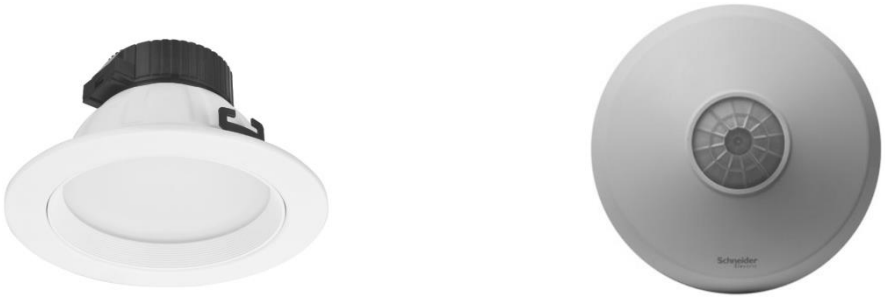

Figure 12. Illustrating picture of lighting system

2. Air-conditioning & Ventilation

To optimize energy performance of the building as well as reduce environmental and economic harms associated with excessive energy use, the project uses VRF and split systems which consist of outdoor units installed on the roof areas and indoor units for cooling indoor working areas.

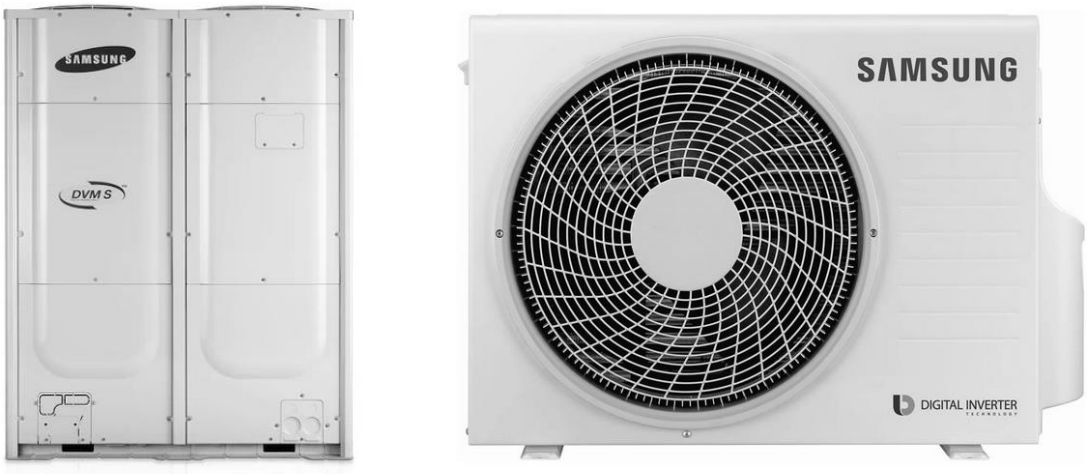

Figure 13. Illustrating pictures of air-conditioning system (VRF & split)

Indoor air quality performance of the building is ensured to contribute to the comfort and well-being of occupants. Indoor air quality of working areas is controlled by PAU (Primary Air Handling Unit) system with air filtration media (class F8) and monitored by air pressure transducer connected to BMS system. All toilets at all floor are ventilated by exhaust fans. The hallway of each floor is designed with mechanical ventilation.

Level 3M, Capital Place Tower
6 Thai Van Lung Street, Ben Nghe Ward
District 1, Ho Chi Minh City, Vietnam
T: +84 28 2250 8530