



**SOLARCHITECTURE**  
building solutions



# Hanwha Headquarters



**Address**

86 Cheonggyecheon-ro, Janggyo-dong, Jung-gu, Seoul, South Korea



**Location**

37°34'03.11" N 126°59'09.39" E



**Altitude**

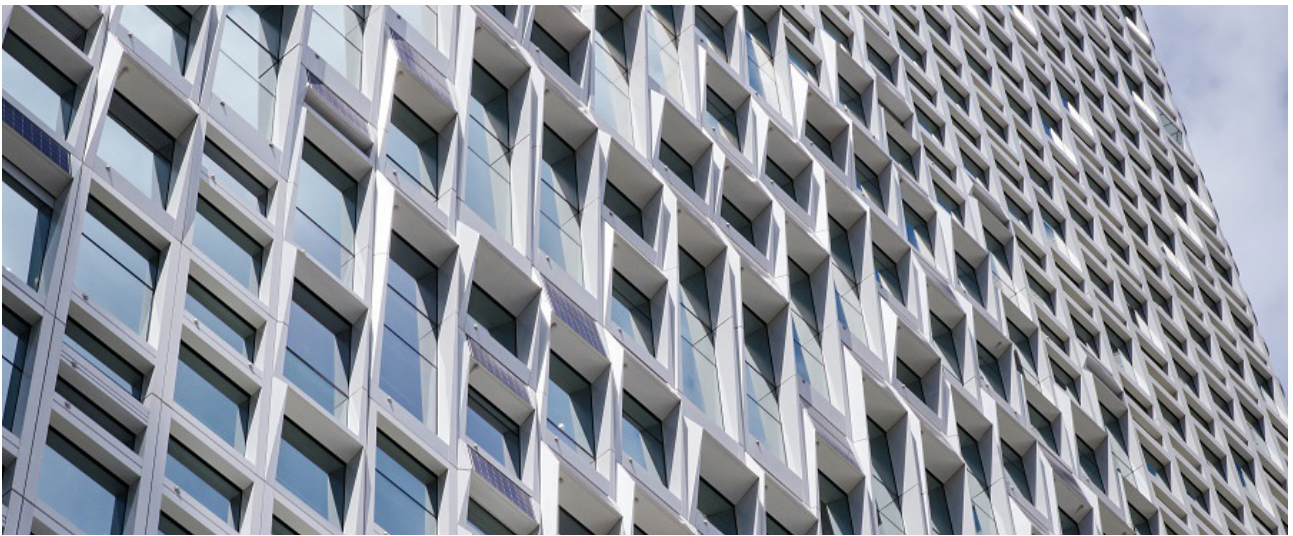
66 MAMSL



# Remodelling “in place”

The retrofit of the facade and the interiors was carried out while the building remained fully occupied and functional, thus enabling the company to remain working in the building throughout the construction period. In order to enable this, three floors were refurbished at a time, on both the interior and the facade.

Electing to choose a construction method that would have minimal impact on both the operation of the company and on the environment, it serves as a good example for all stakeholders in the construction process to consider alternative parameters and sustainable measures that can be introduced when retrofitting existing buildings.



Close up of the facade

## Energy

Active solar surface	n/a	275m <sup>2</sup>
Active solar surface ratio	n/a	<25%
Peak power	61 kWp	73 kWp
Building skin application	Flat roof	Cold facade
Storage	NO	-

### Energy production

# 85500

kWh

Source: UNStudio

### Self-consumption

# 4%

Measurements in progress



# Building characteristics

## Building typology

Administrative

## Construction type

Retrofit

## Year of construction

1998, retrofit 2016 - 2019

## Energy reference surface

-

## Energy index

424.4 kWh/m<sup>2</sup>a (heating and electricity)

## Energy labelling

G-SEED (total score: 88.2)



View of the meeting room

## BIPV module

### Product

Q Peak S-G3 cells

This model is no longer available.

For more information about the available products please consult the manufacturer's website

### Manufacturer

Hanwha Q CELLS GmbH

### Cell technology

Mono-crystalline

### Front glass type/customization

3.2 mm thermally pre-stressed glass with anti-reflection technology.

### Dimensions

1348 x 1000 mm

### Specific power

168 Wp/m<sup>2</sup>



# Building skin

## Roof

### Application

Flat roof

### Description

Standard PV modules are laid on a metallic support system.

### U value

-

### Fastening system

-

### Other

-

## Facade

### Application

PV cladding integrated in the cold facade

### Description

The unglazed surfaces of the southern facades are outfitted with photovoltaic modules. The opaque portions are finished with 150 mm of insulating layer and a 3 mm aluminium back pane.

### U value

0.25 W/m<sup>2</sup>K

### Fastening system

n/a

### Other

Light-Density Open-Cell Spray Foam (ocSPF) was used to insulate the opaque portions of the facades narrow and there is no frame.

## Glass surface

### Application

Glazed facade

### Description

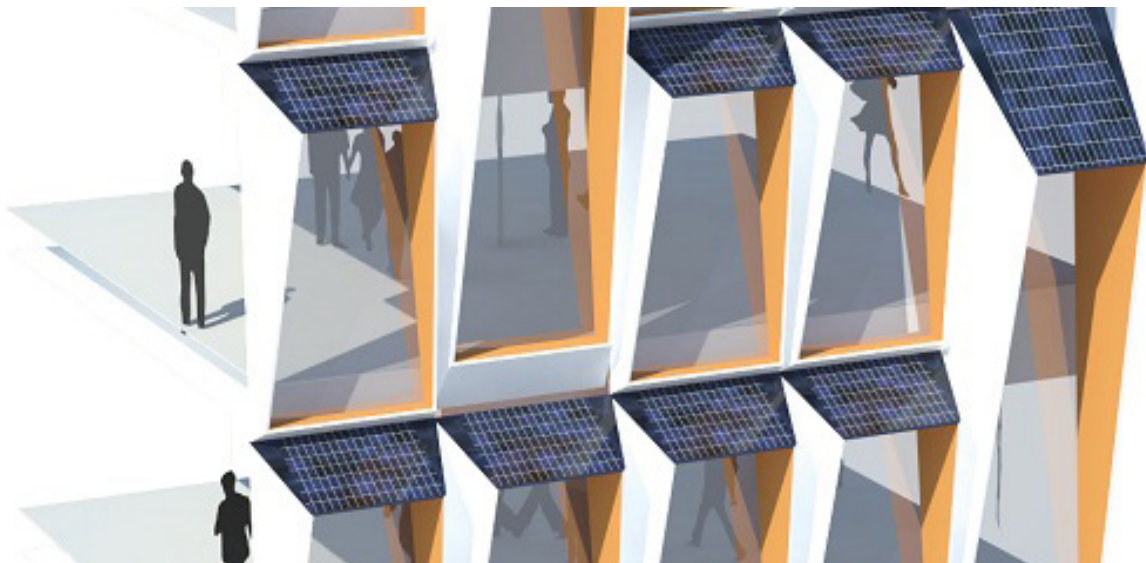
Insulated glass in aluminium framing covers about half of the building surface.

### U value

1.06 W/m<sup>2</sup>K

### Other

-



Installation of photovoltaic modules



## Costs

### Total cost of the building

n/a

### Price per m<sup>3</sup>

n/a

## Parties involved

### Owner

Hanwha Group

### Architect

UNStudio

### Local consultant and executive architect

Gansam Architect & Partner

### Landscape consultant and designer

Loos van Vliet, Haarlem

### Facade and sustainability consultant

Arup Hong Kong

### Lighting consultant interior and facade

AG Licht, Cologne

### Photo

©Rohspace

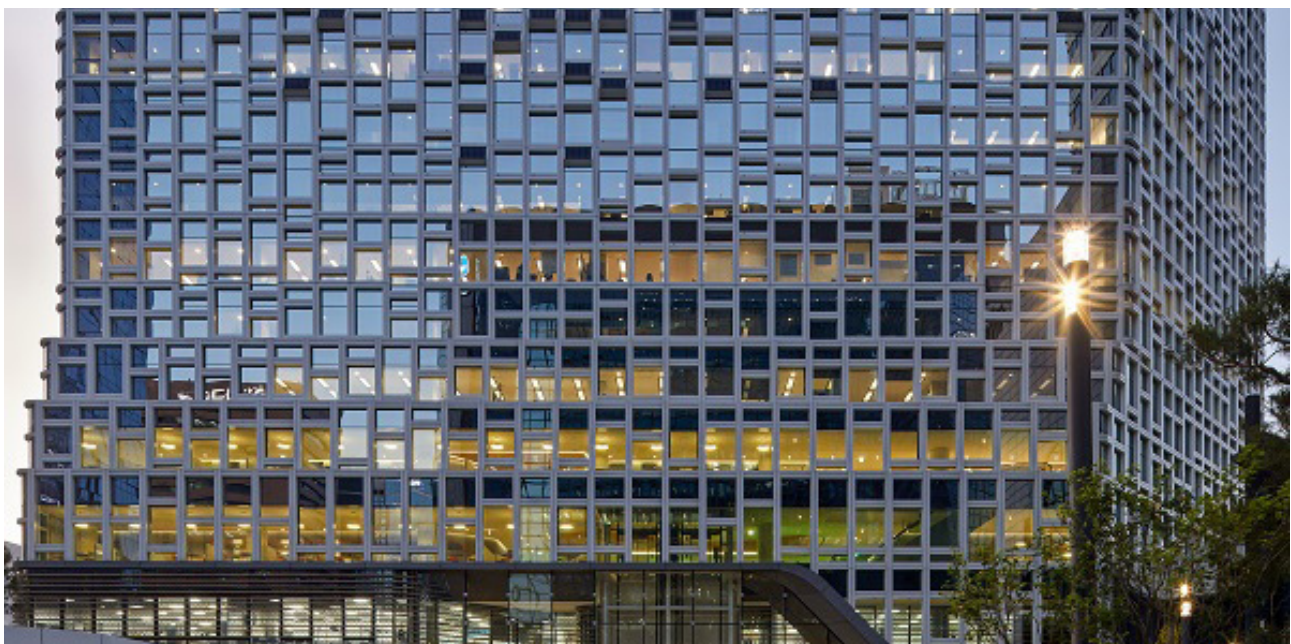
## Awards & recognitions

### Awards

CTBUH Awards 2020 - Renovation Award 2020 Award of Excellence Green Building Award 2014, Finalist

### Publications

Tall + Urban Innovation 2020: Dominant Trends - Mar 2020 - CTBUH Journal 2020 Issue II High-Rises From the Past and For the Future – Oct 2019 – 2019 Chicago 10th World Congress Proceedings – 50 Forward | 50 Back



Facade expression

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