



**VERITAS**  
**PKNS Headquarters**  
Perbadanan Kemajuan Negeri Selangor



# PKNS Headquarters

Perbadanan Kemajuan Negeri Selangor

# Foreword from the editors

VERITAS Architects Sdn Bhd was established in 1987 as the original entity within the VERITAS Design Group, and has since experienced rapid growth, expanding into all areas of professional architectural services. Today, despite its relative maturity, Veritas Architects continues to pursue a dynamic approach to design founded on innovation and the principles of professionalism.

VERITAS Architects has been honored over the years for award-winning architectural works commissioned for major international organizations and public listed companies, both within Malaysia and overseas. Completed projects of the firm have been published widely in the local media and the Principals have presented their work and ideas at numerous academic and professional forums.

As a part of the VERITAS Design Group, VERITAS Architects can efficiently integrate related design services provided by its sister companies: planning, interior design, landscape design, environmental consultancy service and quantity surveying & project management. The group's resources include over 380 staff within its 3 Malaysian offices (Kuala Lumpur, Penang and Johor) and 6 international offices.

VERITAS Architects has adopted a flexible and adaptable approach to handling architectural design projects, tailored to respond to the specific needs of each particular project and the decision-making

process of the Client. At VERITAS Architects, the quality and consistency of professional service on each project takes precedence over theoretical design goals. Consequently, the firm's work is marked not by a fixed stylistic signature, but rather by a consistent approach inspired by the principles of good design, environmental concern and contextual integrity.

Azril Amir Jaafar  
Principal  
VERITAS Design Group

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## Introduction

Design

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Appendix



## The first ambition

From PKNS aspiration to have a new iconic and progressive new haegquartes to reflect the dynamism of PKNS. Element of Selangor cultural identity mixed with the latest trend of environmentally and sustainable architecture with signature Green Roof.

Building form treated as building in park setting where open spaces in between blocks acts as window to the park surrounding the site with picturesque Shah Alam skyline and greeneries as the backdrop. GBI concept was integrated into the overall scheme since the inception with minimal GBI Gold target. This building complex straddle on a 4.6 acre site in the midst of Shah Alam recreational area near Tasik Tengah and in the middle of Shah Alam CBD. Laman PKNS consist of 4 office blocks ranging from 4 to 8 storey in height which incorporates business, leisure for PKNS community and public spaces for their customers and public. Total built-up area are 30,163 sq.m. based on 1.1. plot ratio. The offices are built around the public spaces and arrangement are based on passive design approach. DGU curtain walls facade is tailor made to enhance the building performance in ensuring super efficient energy usage also intergrate with Islamic motive sunscreen and green wall replay the bar code lines reminiscent of VERITAS signature lines.

Intertwine of Public/semi-public/private spaces to introduce a permeable and transparent building which incorporates buisness and leisure into one location, a place for conference and celebrations for PKNS and their customers.

Integration and enhancement with site context and surroundings, to achieve an environmentally responsive, energy efficient and sustainable structure to achieve the highest green rating, GBI platinum as their target. Full integration with landscape feature especially at the green roof, open decks, terraces and the ground compound during the early stage of design compliment the site setting in the midst of Shah Alam recreational park and green lung. It echos the vision of Shah Alam Municipality, MBSA which is known as "Shah Alam Bandar Anggerik".



## What makes a building sustainable?



At 37 storeys high, Menara JLand is an outstanding addition to the skyline of Johor Bahru City. Located in the Johor Bahru Central Business District, this premier Grade 'A' corporate tower sits atop the well-known Johor Bahru City Centre or JBCC.

Designed as a modern urban sculpture, Menara JLand features an asymmetrical form with a contemporary facade. The tower's silhouette and structural aesthetics effectively create a centrepiece for Johor Bahru city, commanding attention amidst its commercial surroundings. To reinforce its architectural concept, the facade integrates a series of floorplates that tapers all the way to the top in a contemporary language, which is translated into an exceptional ascending appearance.

The tower's impressive height presents the opportunity to include a public observatory, roof top restaurants, sky garden and sky walk on Level 34. The observation deck

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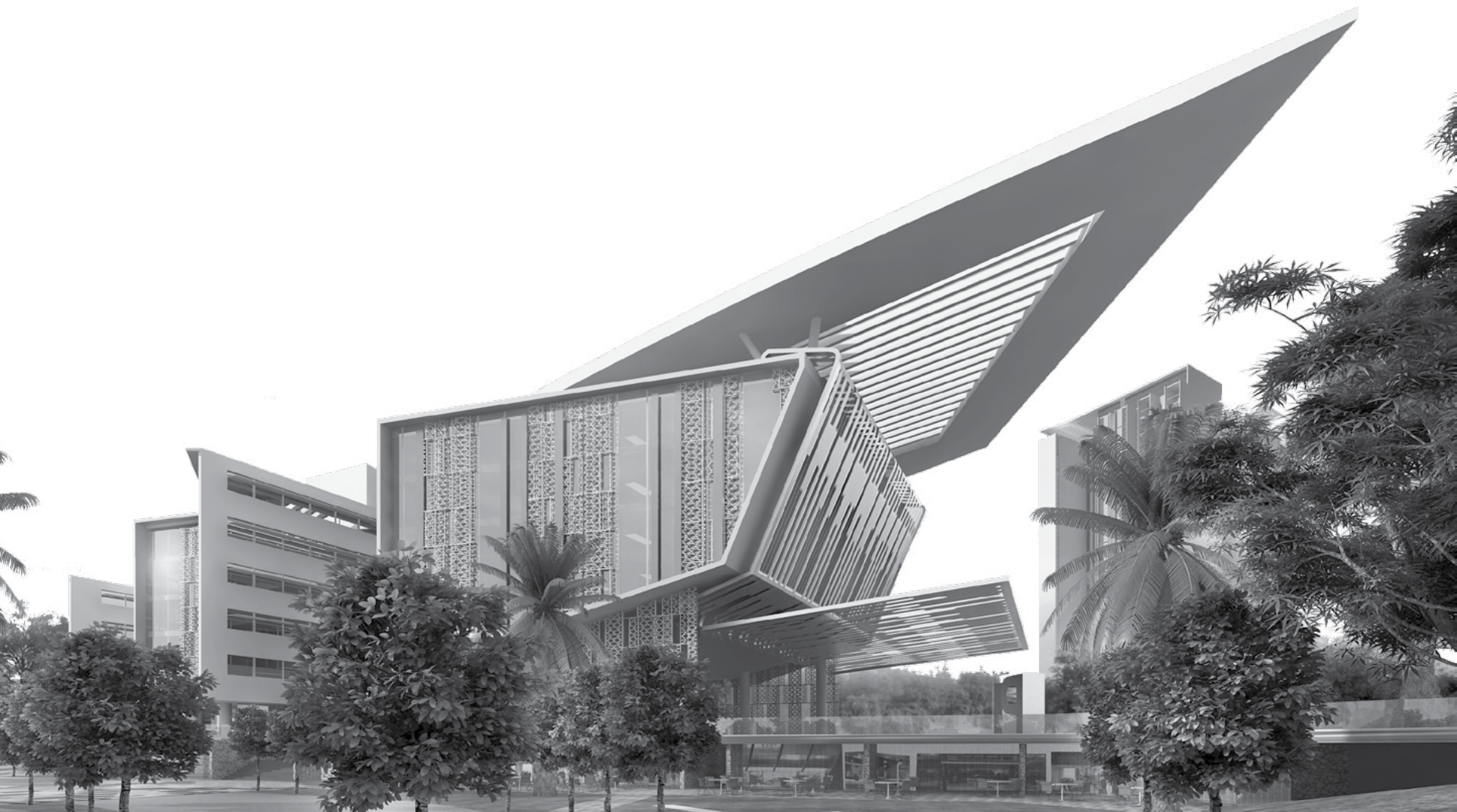
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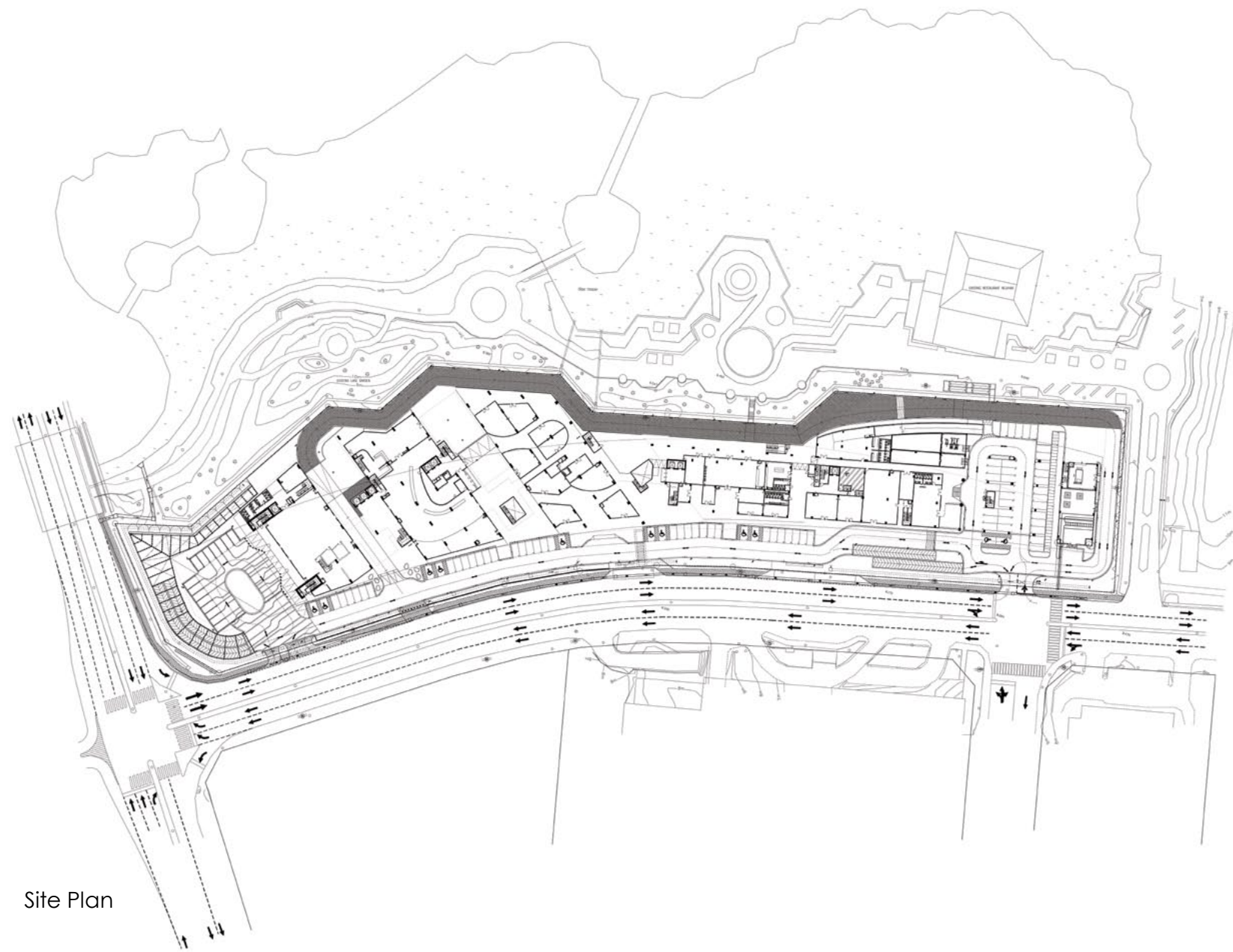
## The creation of an icon

Located in the heart of the Shah Alam administrative centre, the Selangor State Development Corporate Headquarters is sited at the edge of a man made lake/geographic formation. The topography of the lake and the surrounding areas are actually part of a green reserve maintained as part of the lake environment of the Shah Alam Lake ecosystem. The site is long, linear, surrounded by a woodland of greenery and long lake views, yet is well connected enough to be located at the locus of the Shah Alam administrative development.

Making use of the long linear site, the building creates a visual corridor between Jalan xyz and the lake, by creating a long, narrow series of buildings. The depth of the blocks is between 10 to 15 metres long. These house the office spaces of the building. Each building is separated by a courtyard; as many as 20 courtyards line the interior of the building. Each courtyard is naturally ventilated. With ample natural light filtering through the photovoltaic cells on the roof of the building. The form of the building is a long narrow ramp ascending the rising







Site Plan



Section A-A



Section B-B

blocks of office buildings. This ramp doubles around itself towards the lake to reach the pedestrian walkway. This allows pedestrians to walk along the full height of the roof of the building. As well as creates a new public promenade that accedes to the lake environment; because of this project, the lake environment is extended to a new public promenade on the roof.

The highest portion of the roof cantilvers over a porte-cochere at the intersection of Jalan xyz and Jalan abc. A smaller roof is concealed beneath the coverage of





the larger roof, which admit daylight through slits. The front entrance is thus defined as the crest of the ramp, addressing the street corner which it faces. The front façade brings the viewer's attention to the roof.

Retail areas line the front of the office buildings. This is to engage the street and bring people into the courtyards naturally, without interrupting the flow of the pedestrians walking along the lake front. The facades of the building are a natural bar code pattern reminiscent of older veritas projects, facades of glass and sheer wall. The

natural gradient of the landscaped roof becomes a seating area for the public's consumption. An open air cinema screen at the end of the landscaped roof faces the gradient of the roof. The green roof serves also as a green roof, eco friendly, a natural form of insulation for the roof area.





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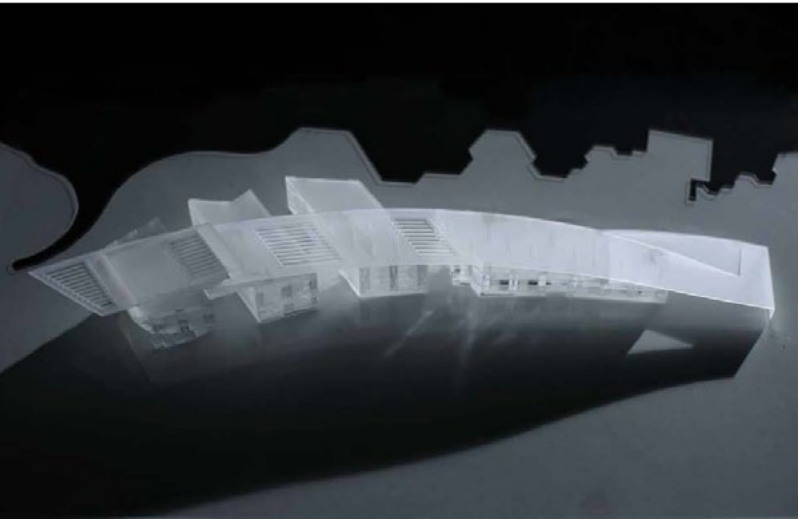
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# The facade

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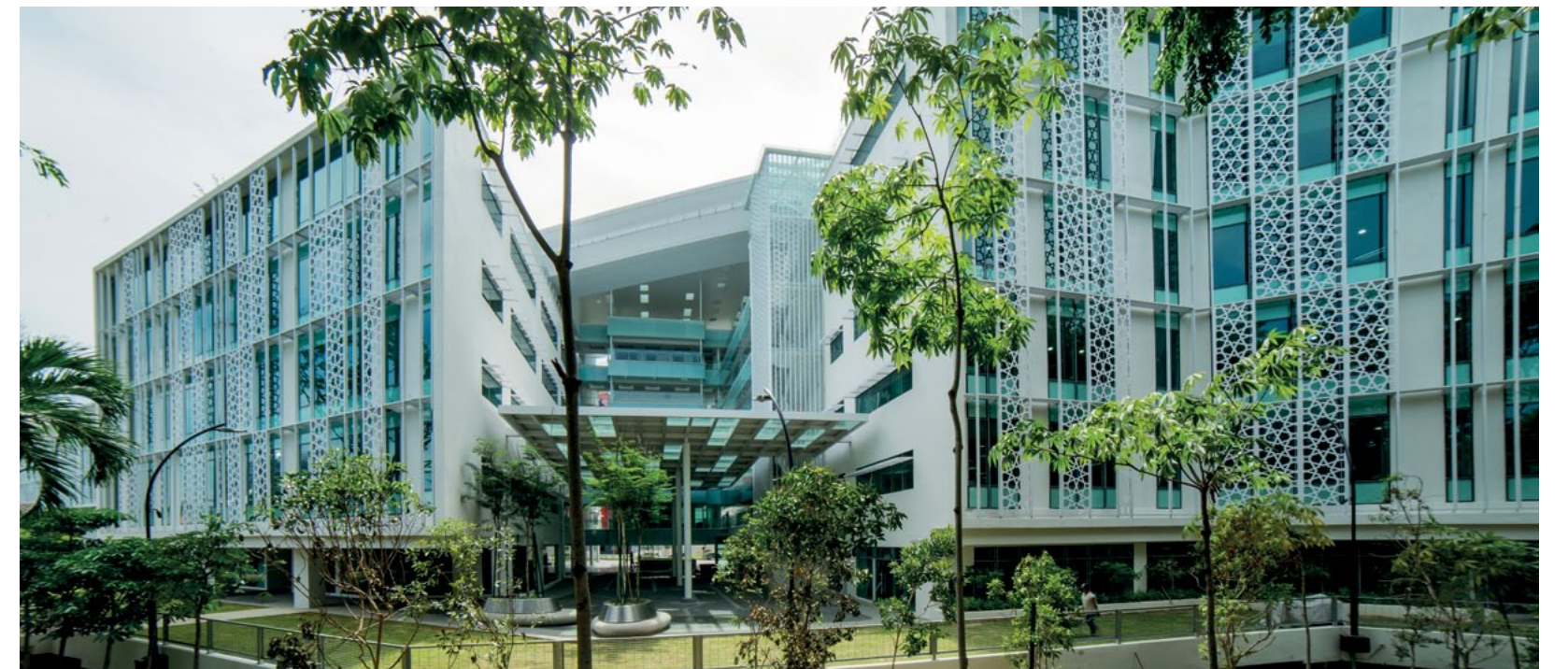
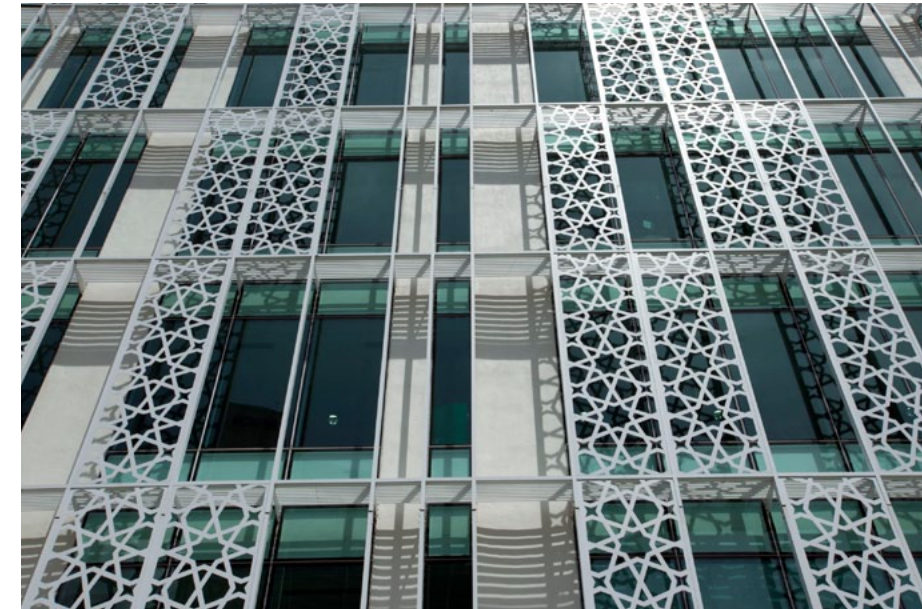
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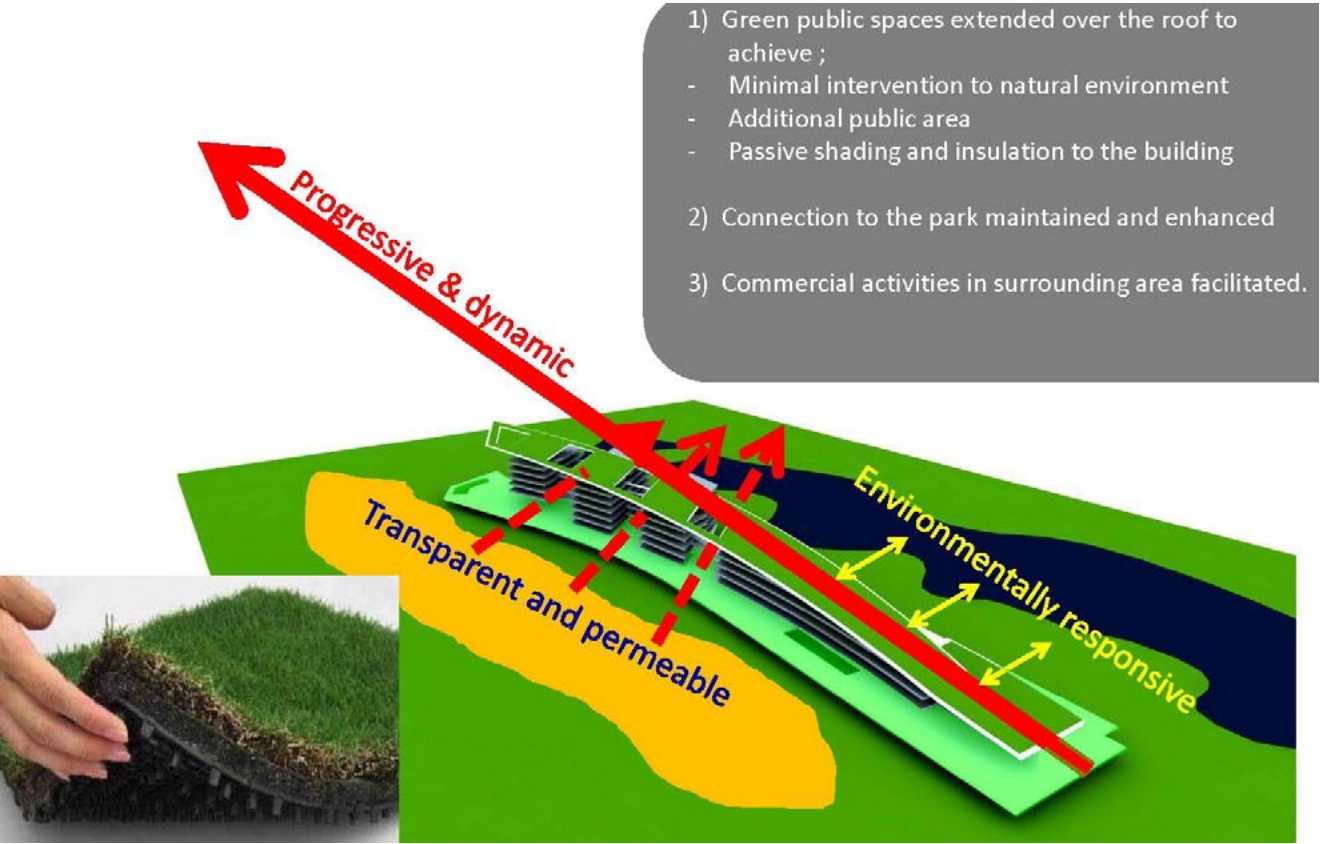


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## Natural cooling

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## Daylighting & self shading



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Sun path 7:00 am

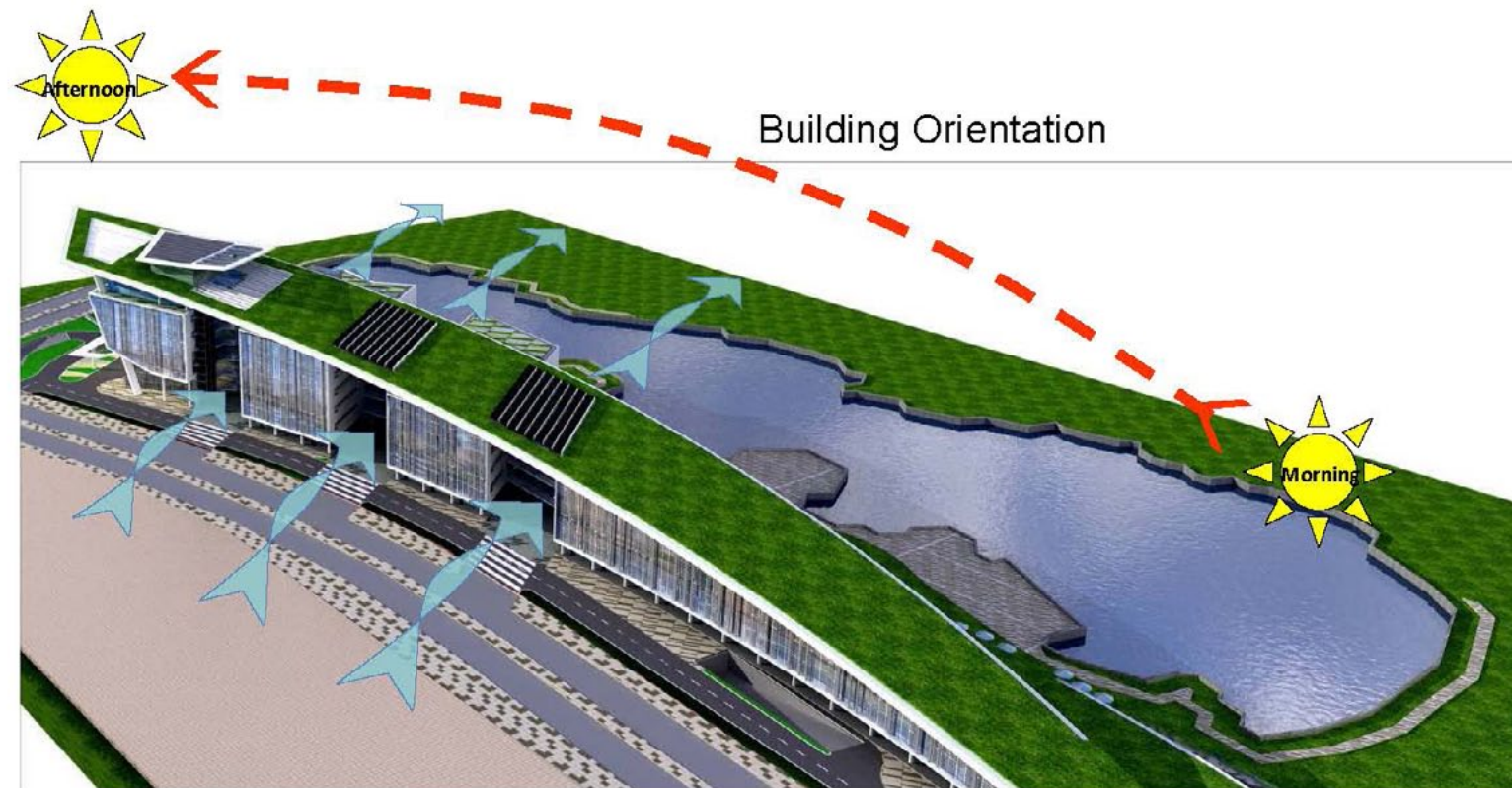
Sun path 9:00 am

Sun path 12:00 pm

Sun path 5:00 pm

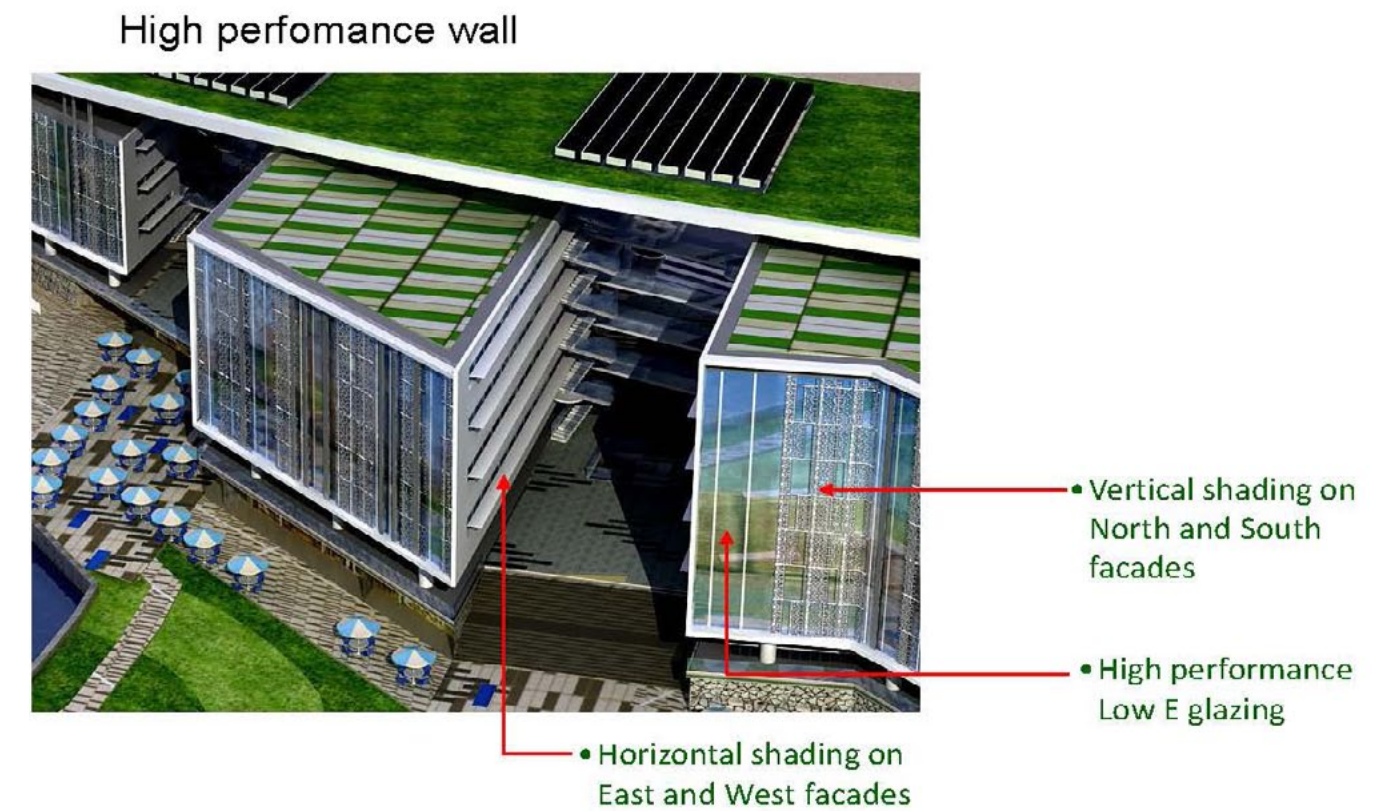
## Testing sun intensity on building facade

Reducing the Overall Thermal  
Transfer Value (OTTV) < 50 kWh/m<sup>2</sup>



## Testing solar gain impact on the facade

Reducing the Overall Thermal  
Transfer Value (OTTV) < 50 kWh/m<sup>2</sup>



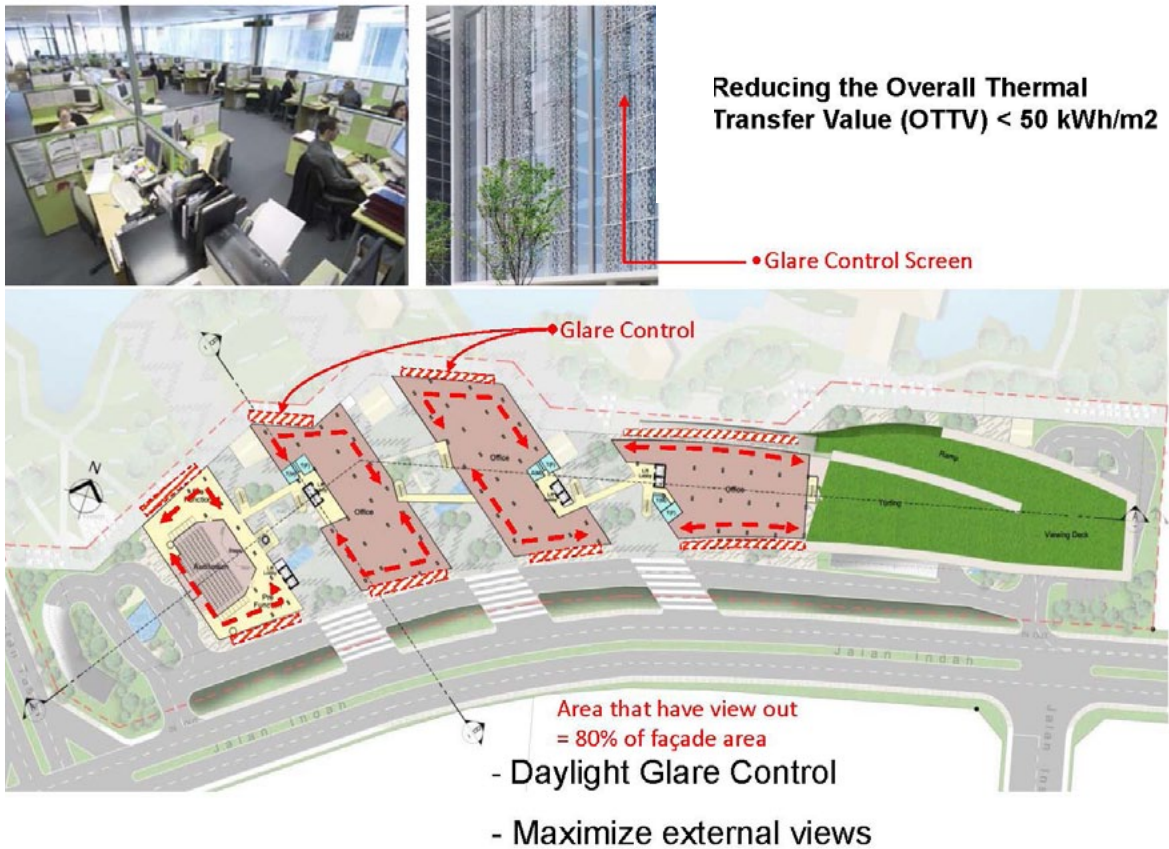


# Insulation

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## Heating, cooling and power

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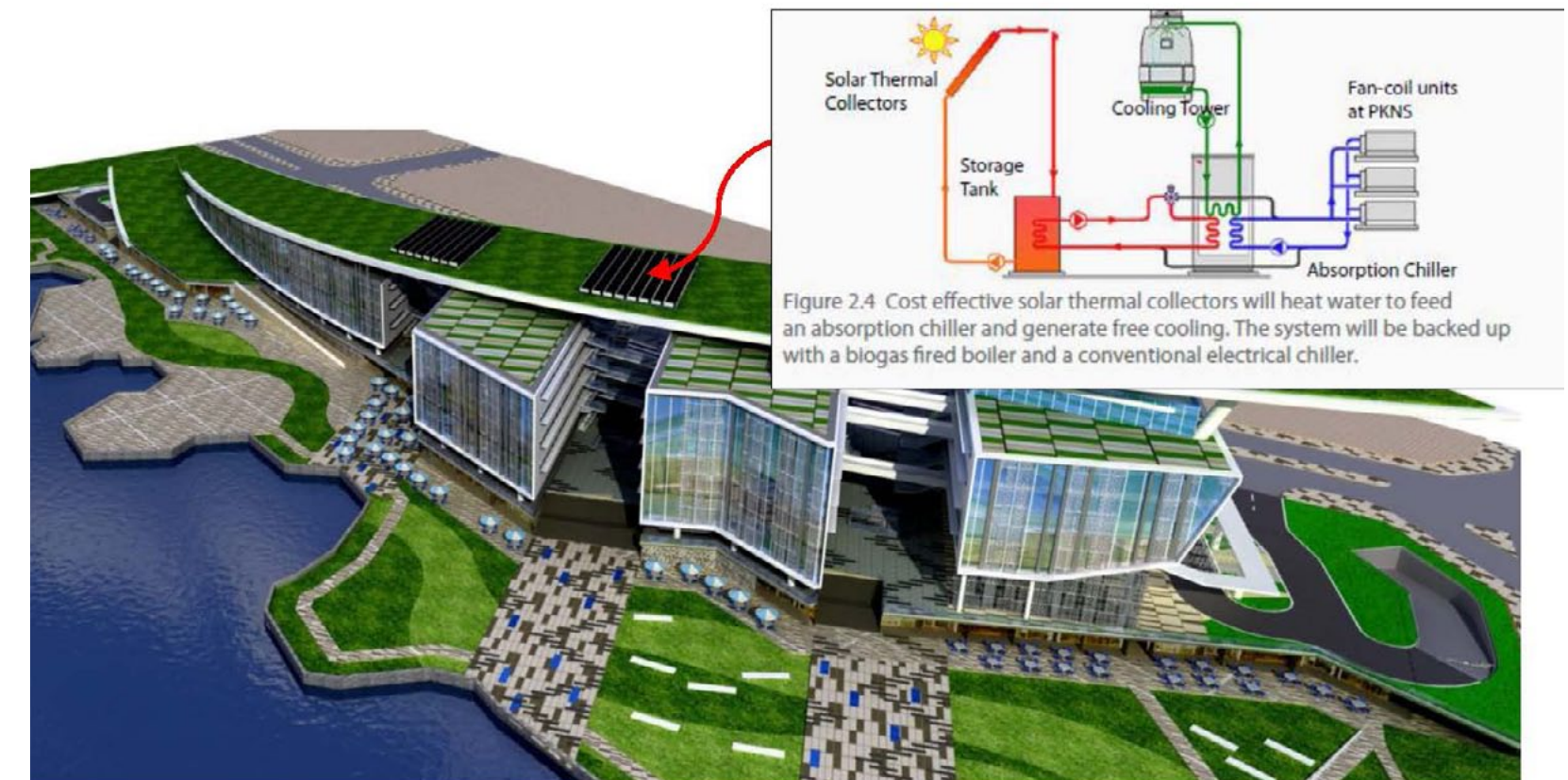
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**Solar cooling system : heat (solar) > energy > chiller > 5% of AC requirement**





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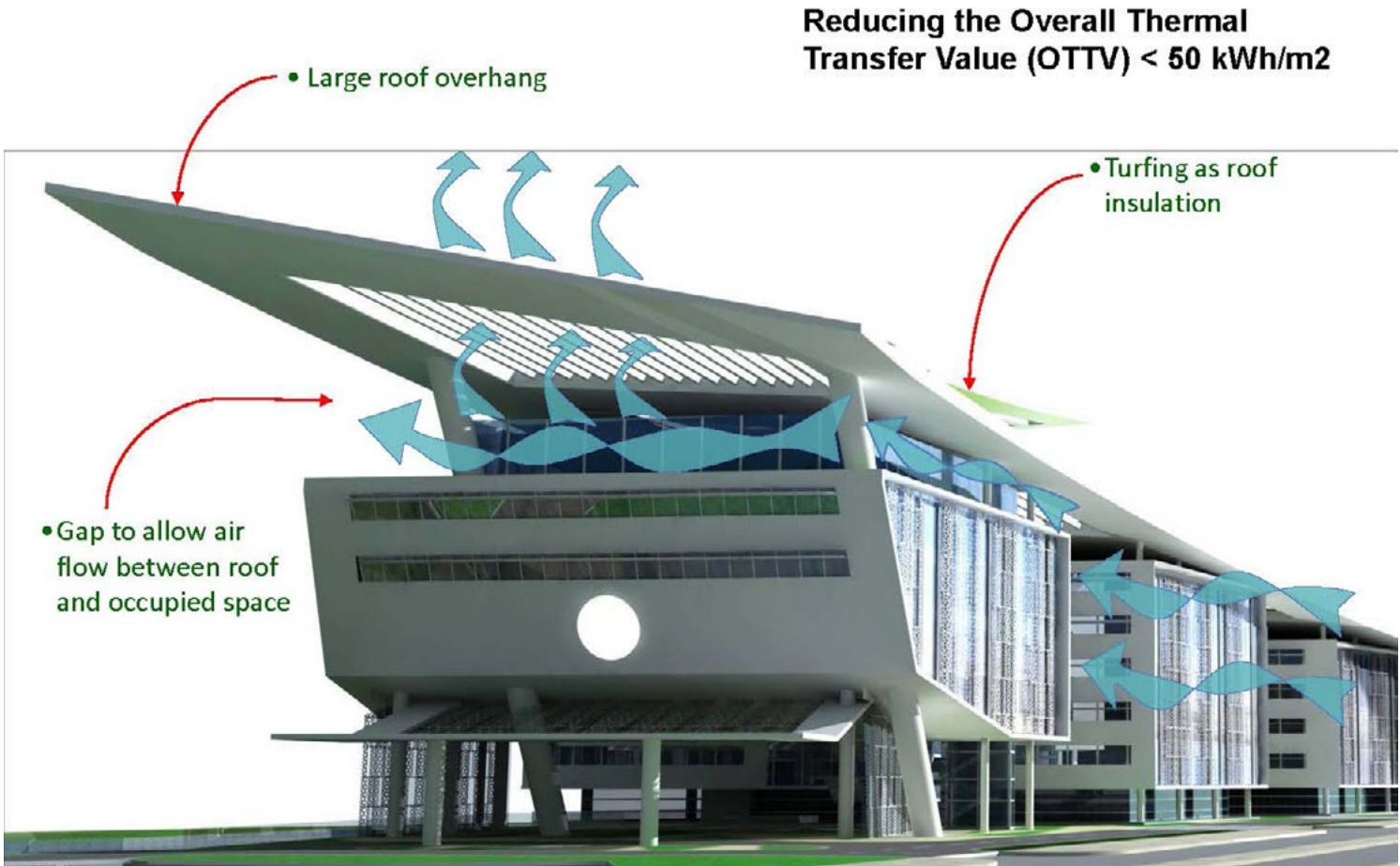
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## Photovoltaic plant

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# Heat and cold generation

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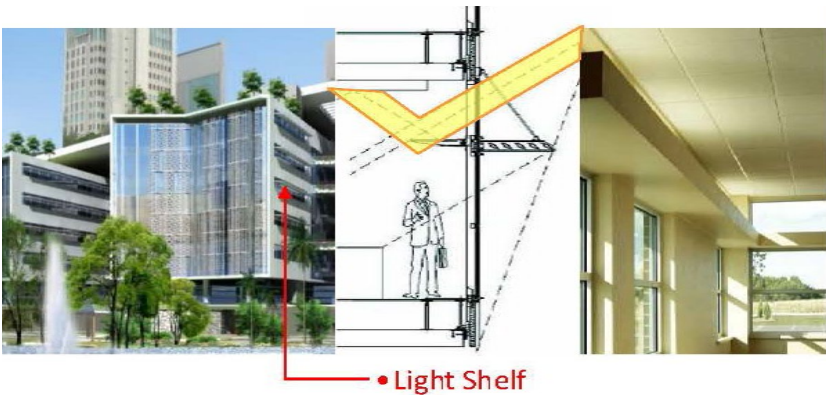


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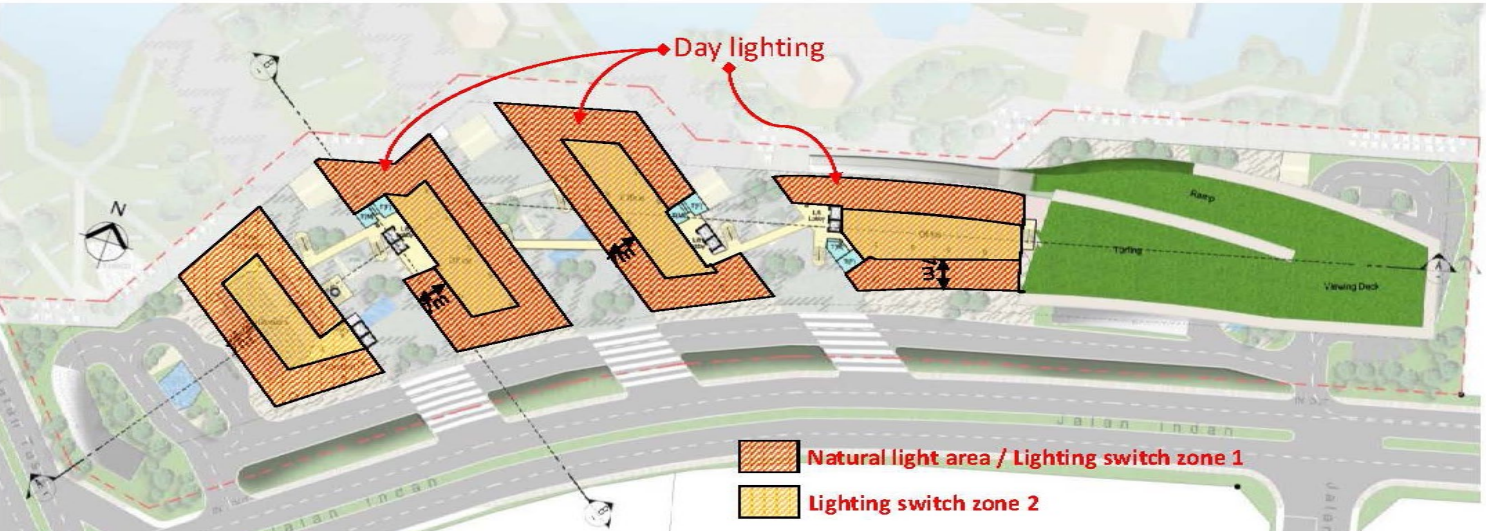
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**Reducing the Overall Thermal Transfer Value (OTTV) < 50 kWh/m2**

- Maximize Day lighting
- Lighting Zoning



# Location specific design

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# Water Supply

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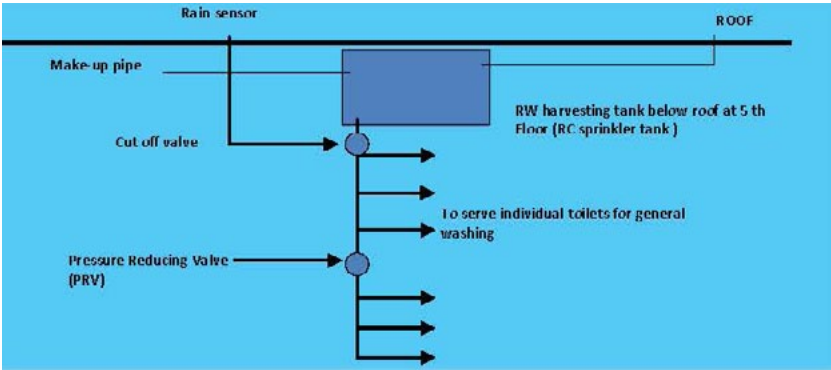
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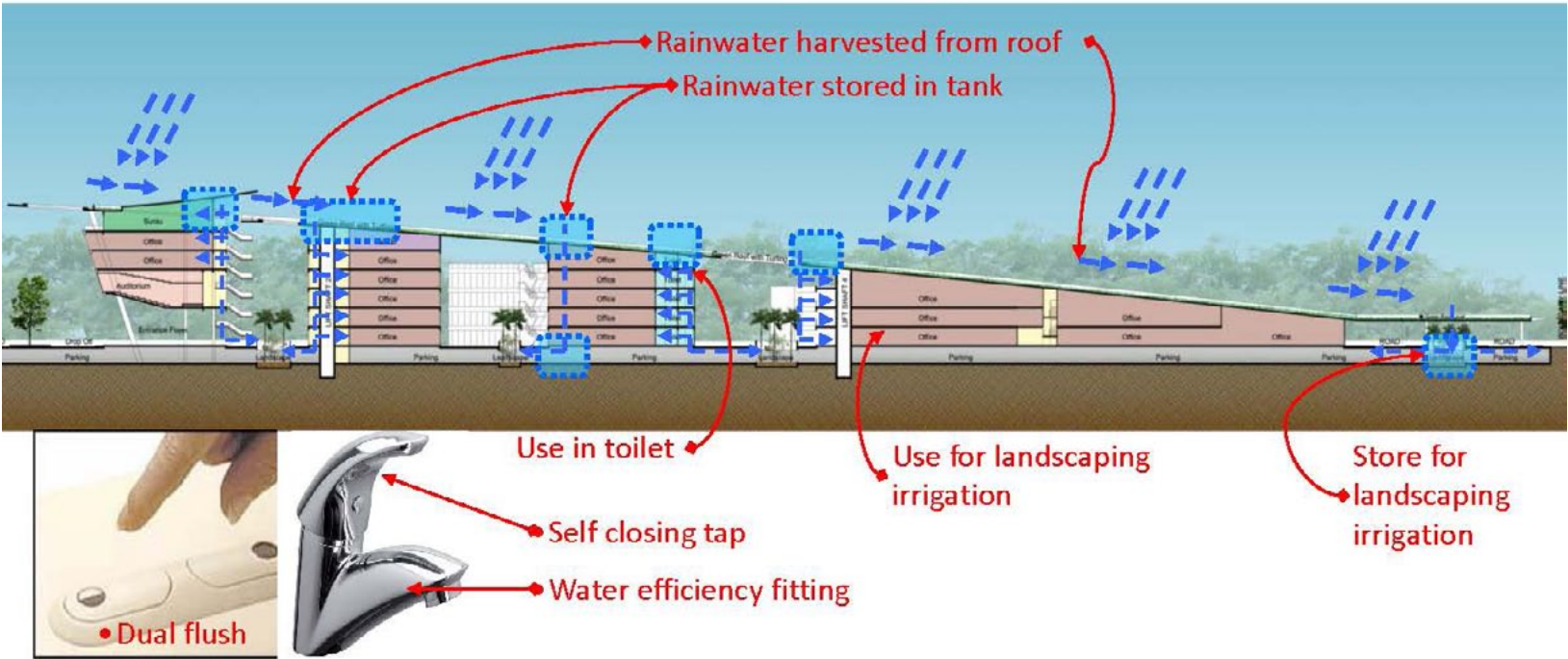
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- Rainwater Harvesting initiatives



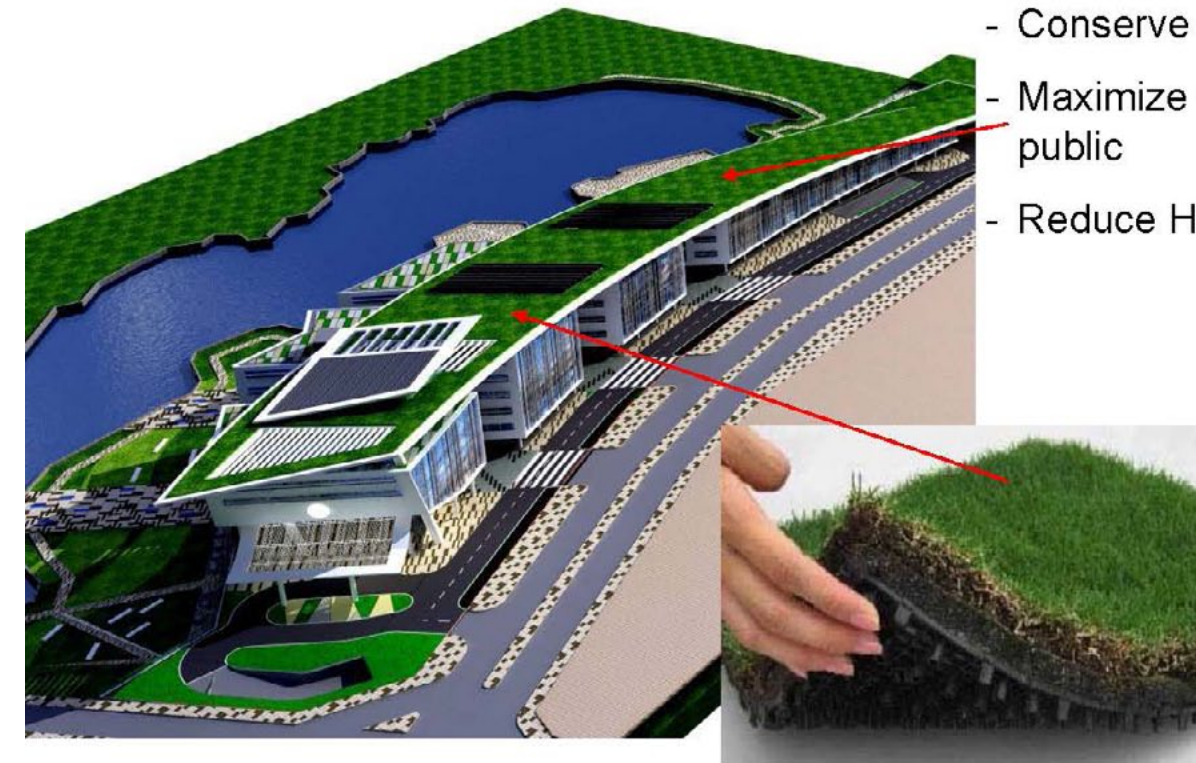


# Conservation

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- Minimize Ecological Intervention to existing natural features
- Conserve Existing natural area
- Maximize Open space for the public
- Reduce Heat Island







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# Building automation

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# Efficiency monitoring

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# Site remediation



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# Landscape



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# Community garden

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# Green roof



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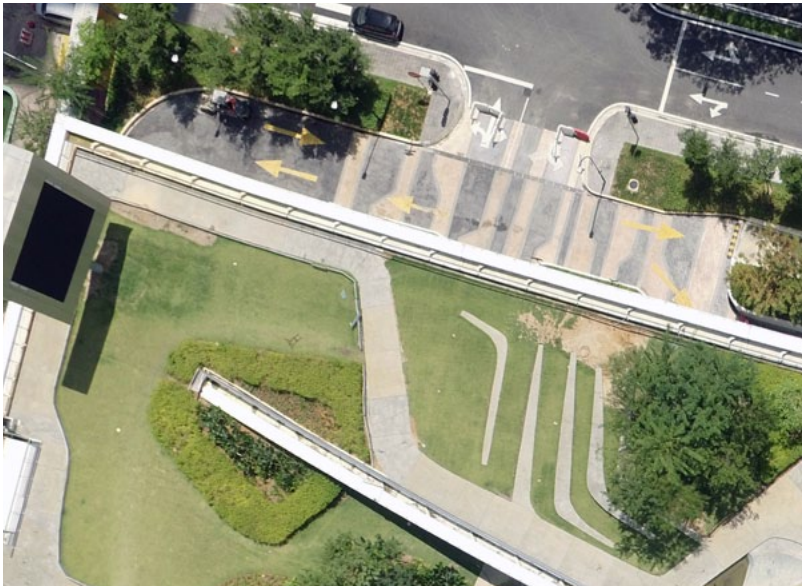
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# Sustainable urban drainage



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# Transport - bikes and links



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## Shah Alam Lake Garden

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# New beginnings

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## The PKNS in the community

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## A lasting legacy



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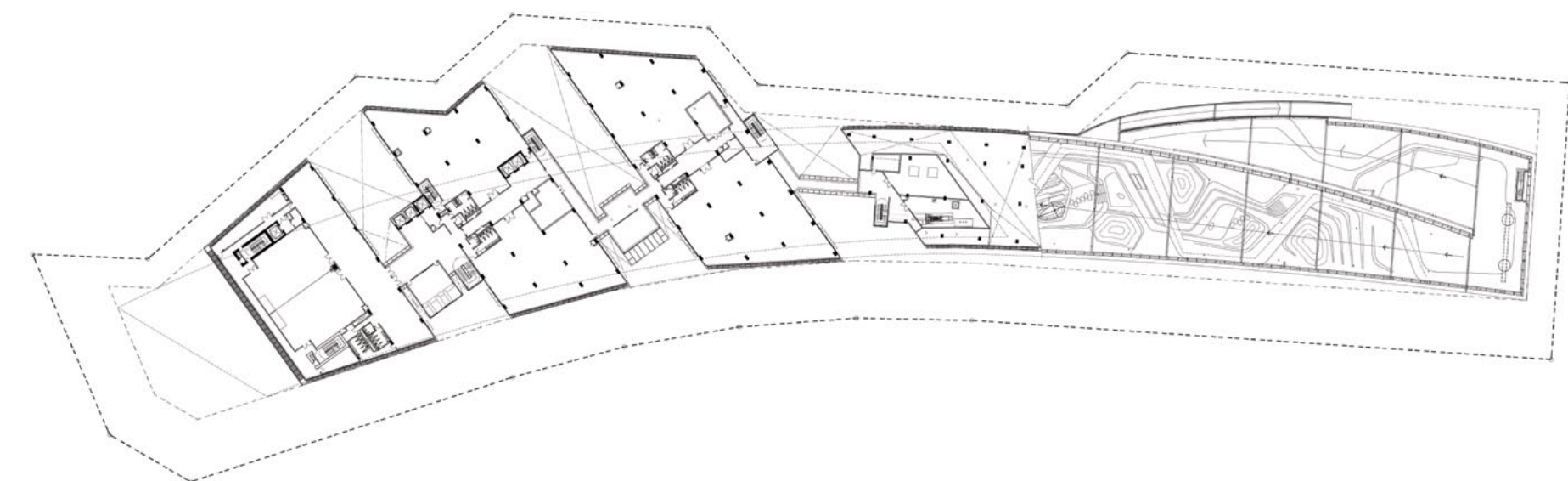
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# Facts and figures

**Construction start:**  
February 2012

**Opened:**  
13 February 2016

**Dimensions:**  
20m x 50m x 100m (H x W x L)

**Gross floor area:**  
6,000m²

**Building parts:**  
Exhibition, auditorium, office space, conference rooms, public cafeteria

**Auditorium:**  
200 seats

**Glazing:**

**Photovoltaic array:**

**Solar thermal array:**

**Length of ground source pipes:**

**Heat and cold production:**

**Mechanical ventilation:**  
11 air handling units (energy recovery, variable speed drives, demand control strategy)

**Natural ventilation:**  
150 motorized air inlets, outlets and roof events

**Lighting:**  
65% florescent, 35% LED lighting, building management system with integrated Digital Addressable Lighting Interface lighting control system

**Rainwater harvesting:**  
Rainwater collected from the roof and stored in 30m³ water tank beneath the building

**Rainwater treatment:**  
90% coverage of total annual water demand (2,900m³ per annum) by rainwater

**Blackwater treatment:**  
Water from toilets and sinks treated to sufficient quality for irrigation and toilet flushing

**Low-energy distribution systems:**  
Passive chilled beam, trench and underfloor heating, low velocity displacement syatems

**Building automation system:**  
3,350 data points

**Meter infrastructure:**  
84 elevtrical, 18 heat and 39 water meters

# Installed products and systems



# Relevant definitions

**Occupied space:**

A room or space within the assessed building that is likely to be occupied for 30 minutes or more by a building user.

**Point daylight factor:**

A point daylight factor is the ratio between the luminance (from daylight) at a specific point on the working plane within a room, expressed as a percentage of the luminance received on an outdoor unobstructed horizontal plane. This is based on an assumed overcast sky, approximated by the 'Commission Internationale de l'Eclairage overcast sky'.

**Average daylight factor:**

The average daylight factor is the average indoor luminance (from daylight) on the working plane within a room, expressed as a percentage of the simultaneous outdoor luminance on a horizontal plane under an unobstructed Commission Internationale de l'Eclairage Standard Overcast Sky.

**Luminance:**

The amount of light falling on a surface per unit area, measured in lux.

**Uniformity:**

The uniformity is the ratio between the minimum luminance (from daylight) on the working plane within a room (or minimum daylight factor) and the average luminance (from daylight) on the same working plane (or average daylight factor).

**Working plane:**

A horizontal, vertical or inclined plane in which a visual task lies, and is normally taken as 0.7 m above the floor for offices and 0.85 m for industry.

# Awards and prizes

**GBI Platinum** Green building certifications – GBI Platinum for the Upper Level Offices with highest point and GBI platinum for the ground floor offices and retails. (2013 – 2014)

Asia Pacific Property Awards – Best Office Development Malaysia

Platinum GBI platinum Non-Residential New Construction (Office) Award (2014)

Platinum GBI platinum Non-Residential New Construction (Retail) Award (2016)



## Images credits

## References





# Acknowledgements









**PKNS Headquarters**  
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