

Future of Sustainability: Learnings from the **Supertalls** and **Megatalls**

**The 5th Facility Management Asia Conference
2026**

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FMAC 2022 – Feels like it was only yesterday



FMAC 2022

Takeaway Vision

- Formula 1 is a sport built on digital
- Data driven → Billions piece of data per race
 - Precision → 1.9s "perfect pit stop"
 - Immediate response to win

Now imagine us → F1 race team!



Age test



What's the connection between these two objects?

Not Every Day You Go from the Very Deep to Reaching for the Sky



PETRONAS Carigali
2001-2004



PETRONAS ICT
2004-2019



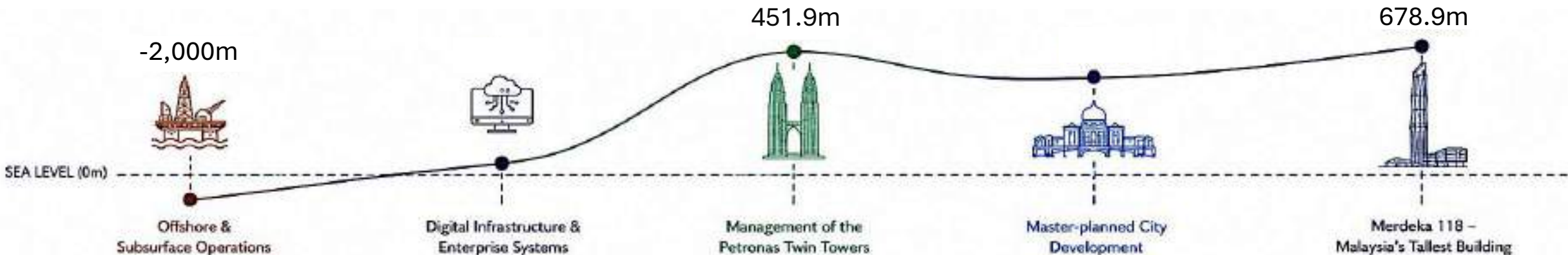
KLCC Urusharta
2019-2024



Putrajaya Holdings
2024-2025



PNB Merdeka Ventures
2025-Now



Definition of Tall, Supertall and Megatall Building

TALL BUILDINGS



>150m
from base to
architectural top

SUPERTALL BUILDINGS

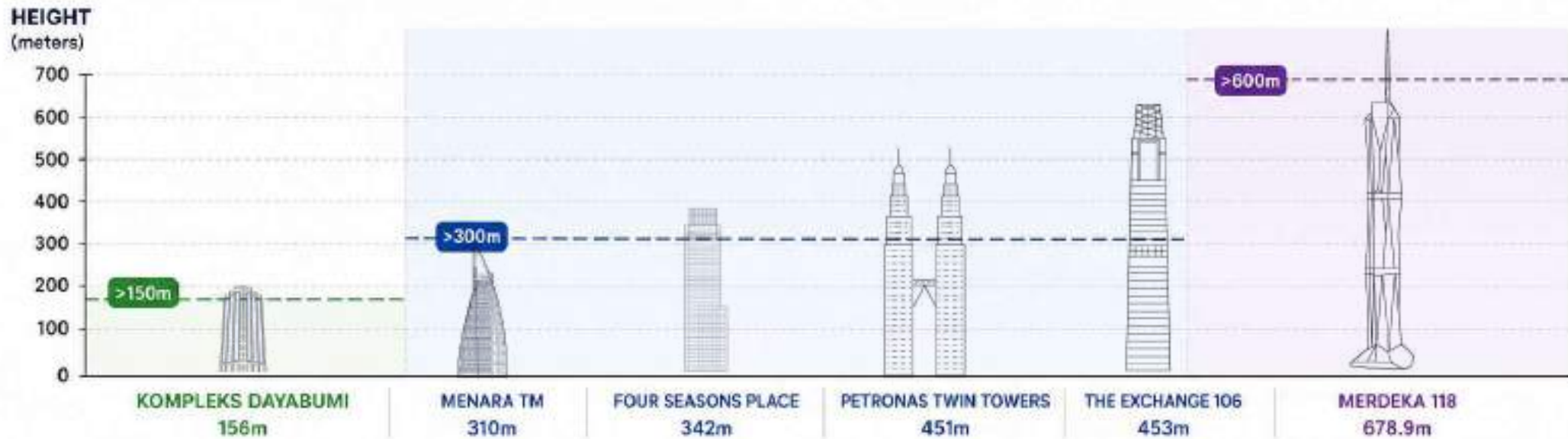


>300m
from base to
architectural top

MEGATALL BUILDINGS



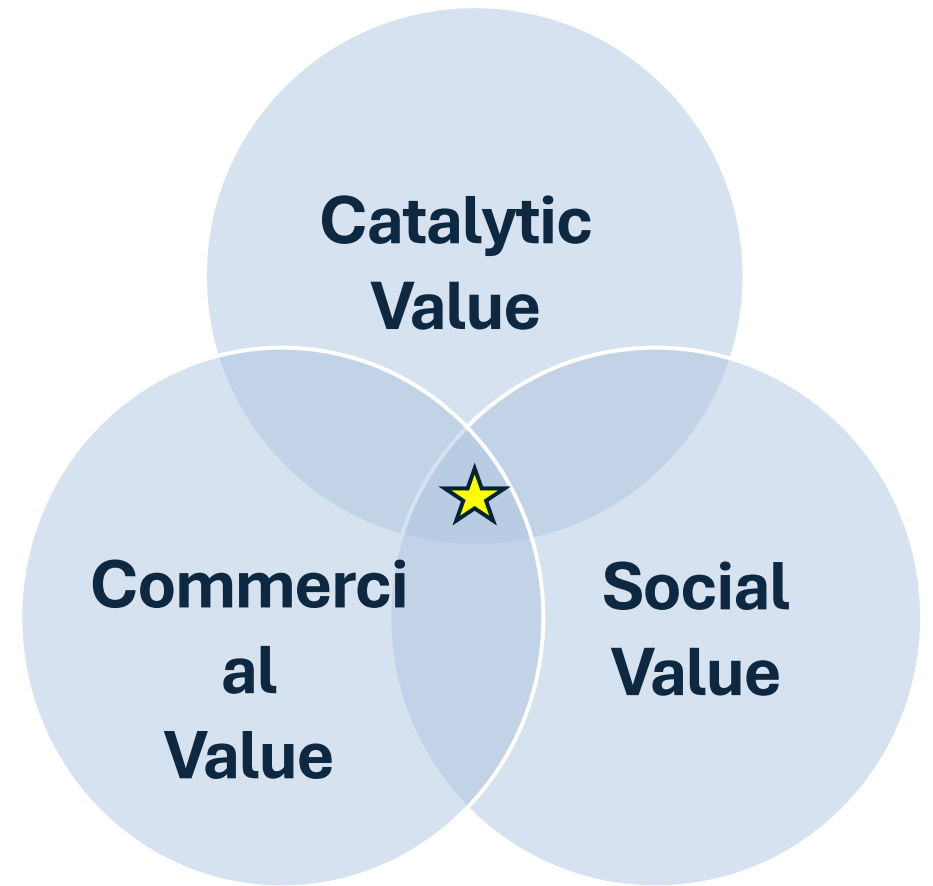
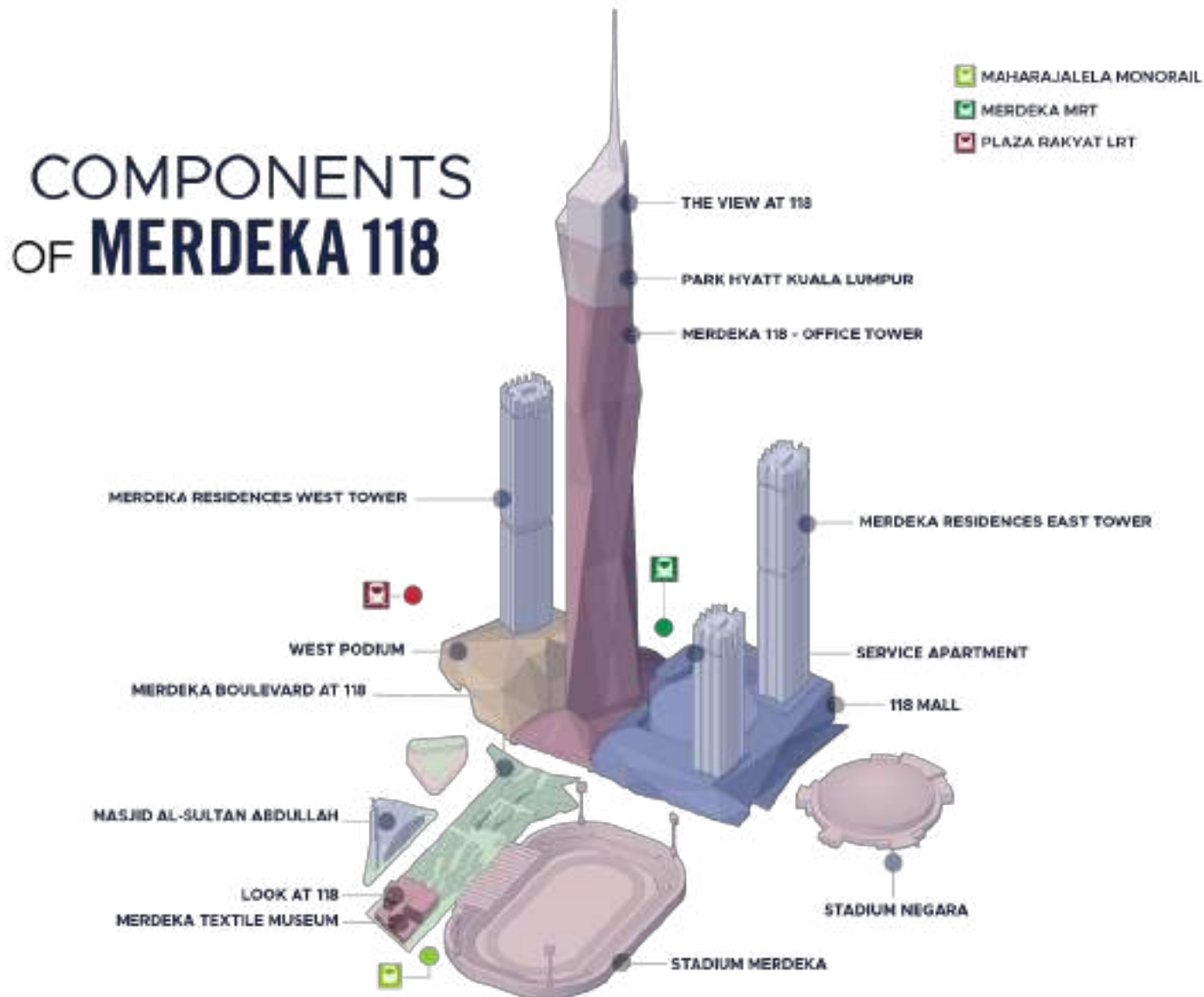
>600m
from base to
architectural top



COUNCIL ON
VERTICAL
URBANISM

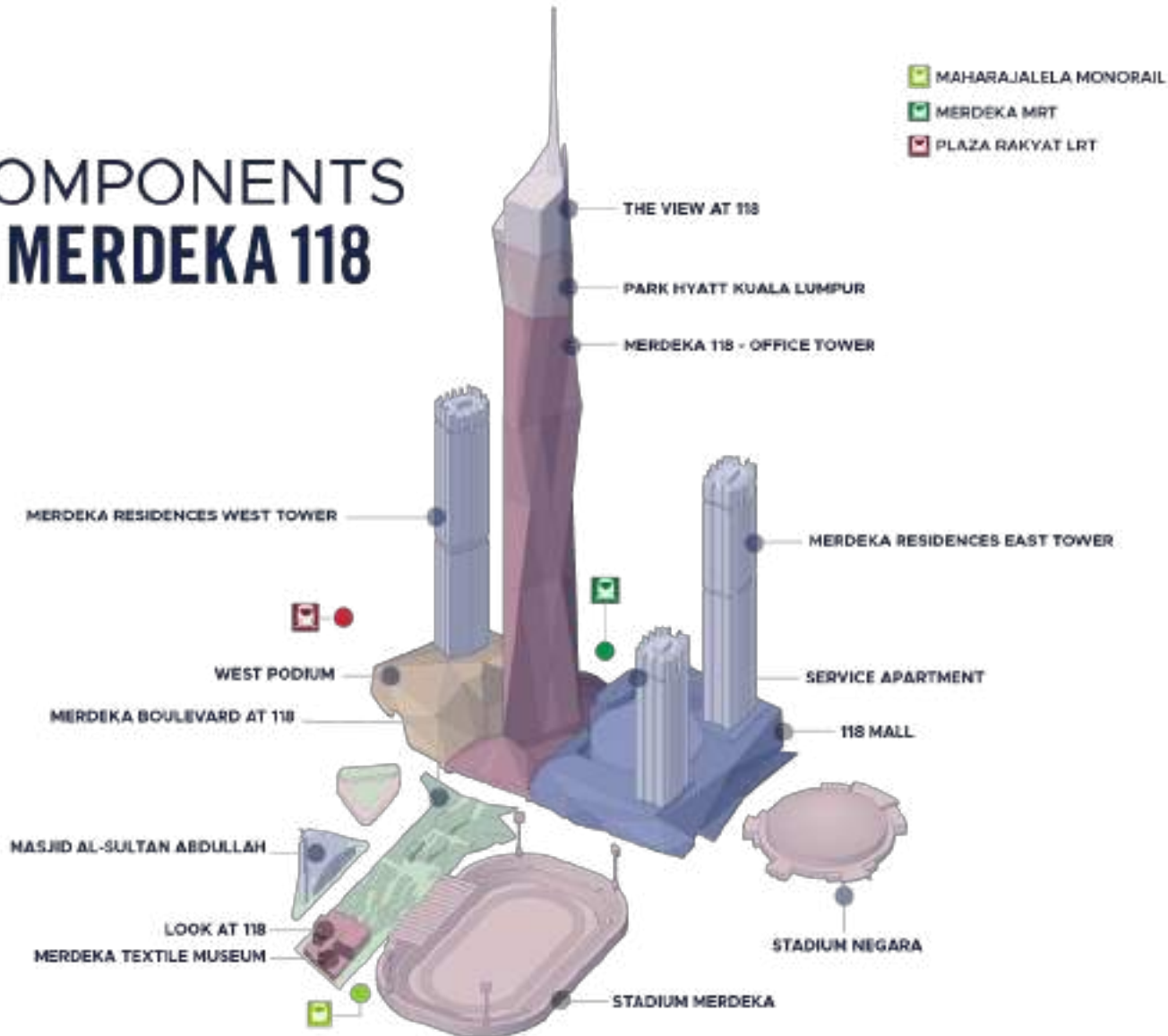
These definitions are established by the Council on Vertical Urbanism (CVU) to provide a consistent global standard for measuring and categorizing building height.

Successful Developments are anchored on “3-values”



Merdeka 118 Precinct Magic Ingredient

COMPONENTS OF MERDEKA 118



**Office
Tenants
~11,000**

**Observation
Deck Visitors
~ 1-
1.5mil/year**

**Stadium
Merdeka &
Stadium Negara
10k-15k per
week**

Menara Merdeka 118 – Sustainability Features



TARGETING TRIPLE GREEN PLATINUM CERTIFICATION FIRST IN MALAYSIA



WHY WELL CERTIFICATION MATTERS



Focuses on
people's **health**
and **well-being**



Enhances
comfort, productivity
and **quality of life**



Addresses
air, water, light,
fitness, comfort
and **mind**



Creates a
healthier, more
resilient and
sustainable building
for all occupants



By combining LEED, GreenRE, GBI and WELL certifications, Menara Merdeka 118 sets a new benchmark for **sustainability and well-being** — delivering environmental performance and people-centric design.

WELL Platinum Certification Ceremony

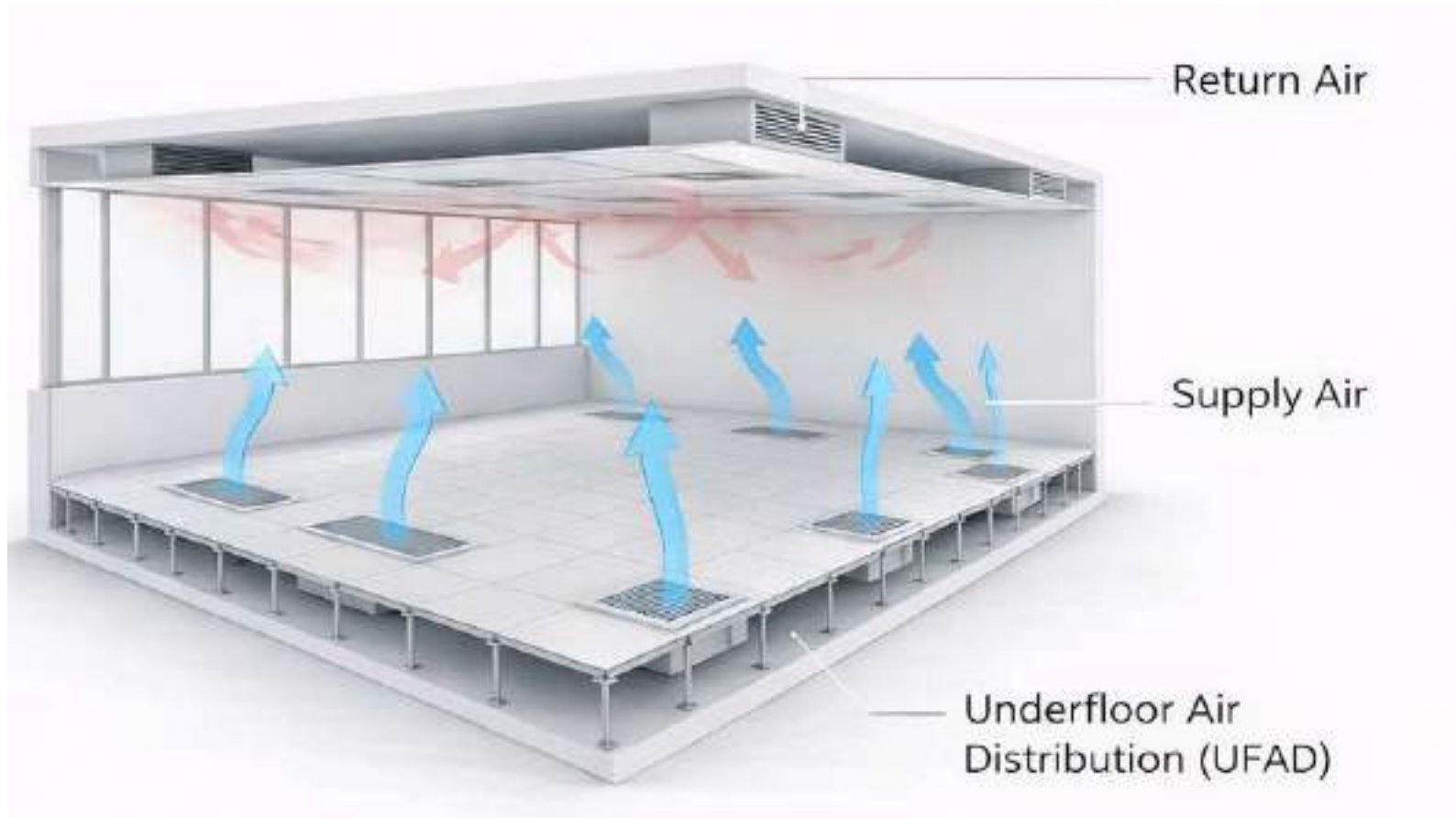


**WELL Platinum
Merdeka 118 Core Building**



**WELL Platinum
PNB Office**

Underfloor Air Distribution (UFAD) improve comfort and energy savings



UFAD Advantage: Cooling from the ground up improves thermal comfort and energy efficiency.

Latent Heat Management: Structural thermal mass stabilises ambient temperatures.

Air Quality Intelligence: CO₂ sensors trigger automatic fresh air intake to prevent Sick Building Syndrome.

Renewable Energy supplies green hot water to Park Hyatt KL



- Hot water supply for Park Hyatt KL
- 1.4% offset of the total energy costs

Vertical Transportation: High-Speed Smart Elevators – KONE DoubleDeck



Rope Protection / Anti tangled



89 lifts, 37 double-deck

Two cabs per shaft — effectively doubling capacity without doubling core space. Each double-deck carries up to 4,000 kg (≈52 people) per deck.

KONE Destination Control

AI assigns each passenger to a specific lift by destination floor before they board. Fewer stops, shorter waits. Ground → L118 in 65 seconds.

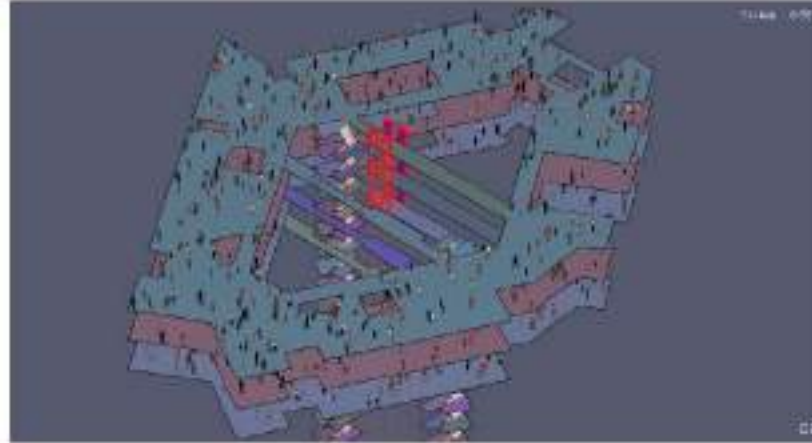
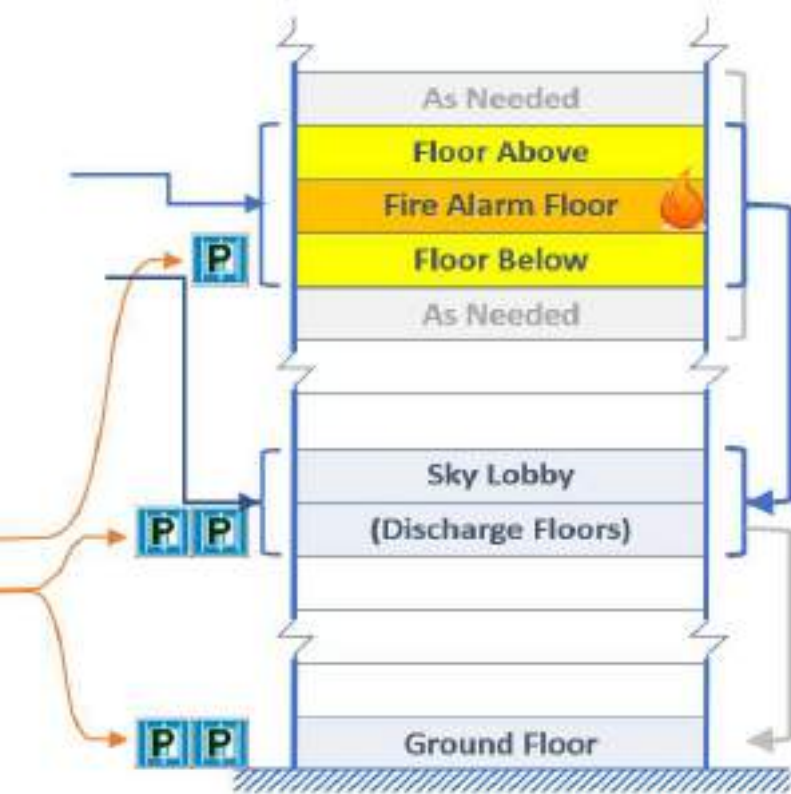
Regenerative drives

Braking energy from descending cars is captured and fed back into the building's electrical grid — reducing net energy consumption.

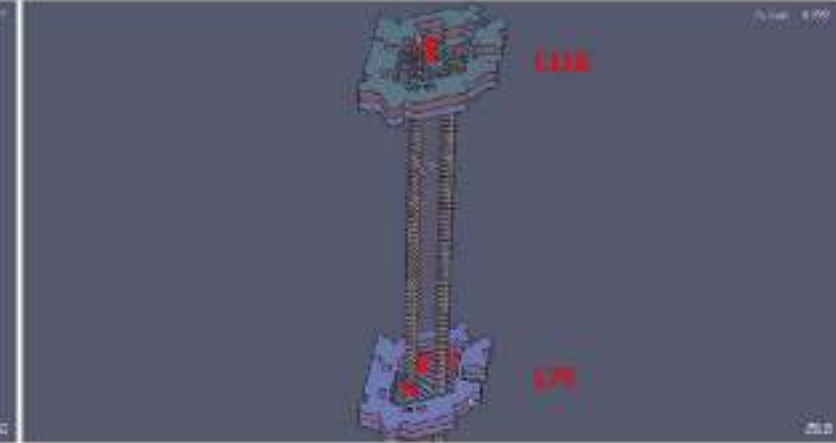


Speed: 10 m/s (36 km/h) · Glass lifts: 8 m/s

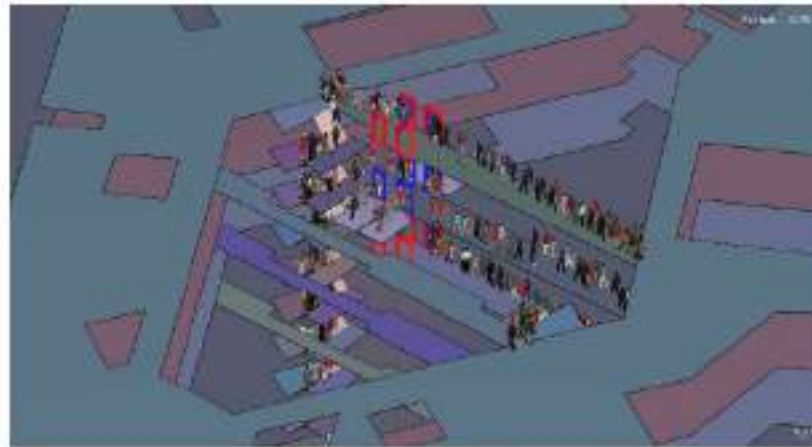
Merdeka 118 adopt smart Occupant Evacuation Operation (OEO)



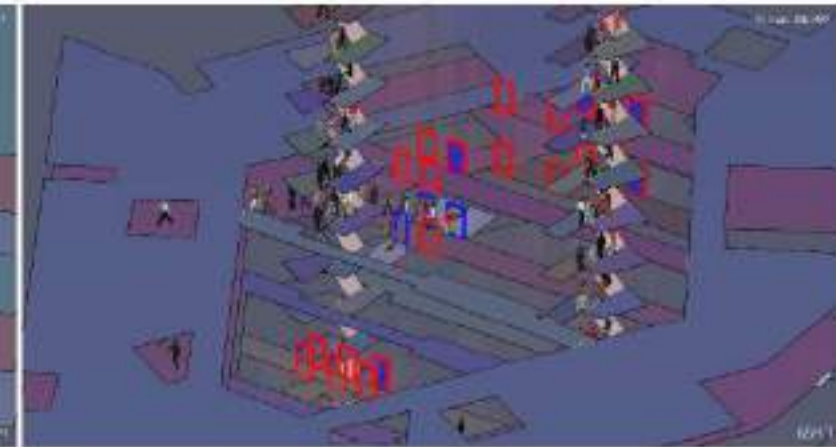
(a) Evacuation Floors



(b) Lift Travel



(c) OEO Lift Lobby at Evacuation Floors



(d) Discharge Level

Building Sway Operations

1. Dual lateral load system

Concrete core walls + 8 mega-columns connected by 3 sets of 3-storey deep outrigger trusses + 6 belt trusses. C105 high-performance concrete — no embedded structural steel in columns.

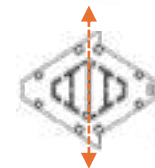
2. Modal sway periods

Mode 1: 12.3 sec (weaker axis). Mode 2: 11.4 sec (stronger axis). Mode 3: 4.0 sec (torsion). Wire mesh installed in lower elevator shafts to protect travelling cables under sway.

3. Spire engineering

160m slender steel spire uses 3D space truss with 30% porosity — reducing wind load and vortex-induced vibration without adding weight.

MODE 1
12.3
sec



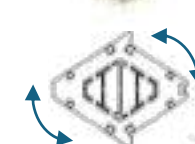
Building translation
In weaker axis

MODE 2
11.4
sec



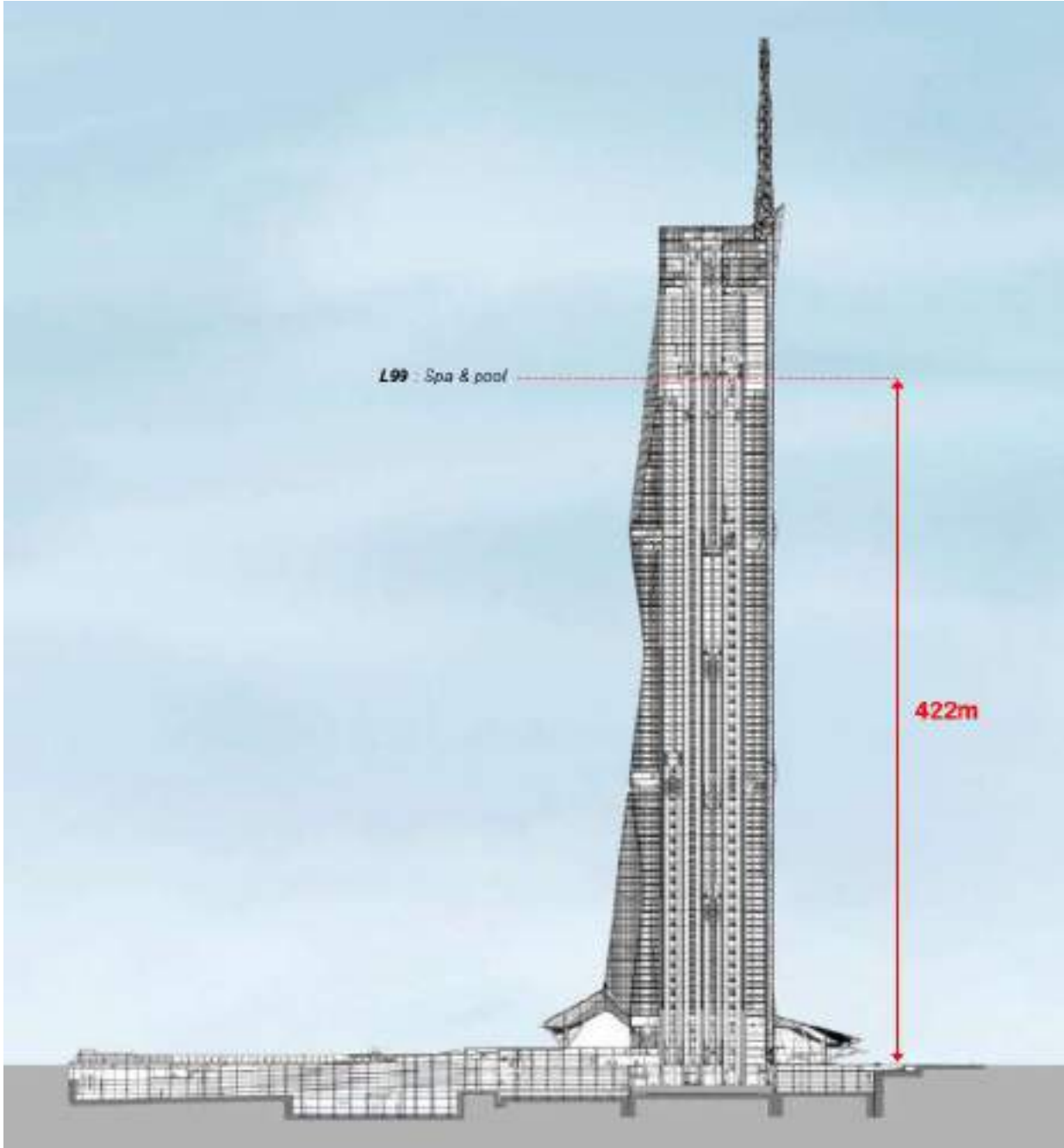
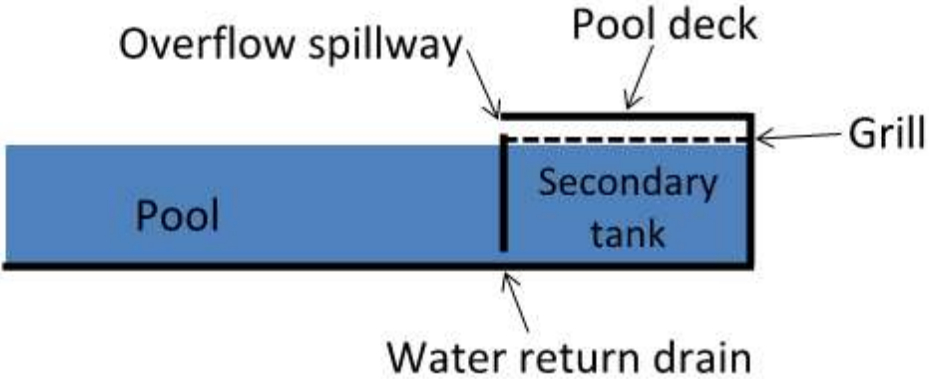
Building translation
In stronger axis

MODE 3
4.0 sec



Building under torsion

Wind Engineering: Swimming Pool



Merdeka 118 is at the Forefront of Technology, Innovation and Sustainability



February 2026
First MD Nexus



March 2026
First WELL
Core Platinum



April 2026
First building in Malaysia
with SPKA system



May 2026
StarProperty Iconic
Development of the
Year Award



June 2026
2 Gold Trophies at FIABCI
Prix d'Excellence Award

(My closing wish)
Moga kita terus Menggapai Ke Langit...
May we continue reaching for the sky...



Kompleks Dayabumi



Petronas Twin Tower



Menara Merdeka 118

... Dan Sentiasa Berakar di Bumi
(...always rooted to the earth)



**2026 Asia's Largest Girl Guide Camp
at Stadium Merdeka**



**2026 Bazaar Ramadan
Stadium Merdeka**



Instagram: @stadiummerdeka

We are OPEN. Come Run for FREE

THANK YOU

MENGGAJAI KE LANGIT

BERAKAR DI BUMI