ACTUAL PHOTO (MAY 2016)

MITI MALAYSIA
MINISTRY OF INTERNATIONAL TRADE AND INDUSTRY

NEW HEADQUARTERS

a **SUCCESS** STORY

MECHANICAL ENGINEERS'
CONFERENCE 2016

JKR

Ir. ZULKIFLI BIN AHMAD

5th SEPTEMBER 2016

A G E N D A

- PROJECT OVERVIEW
- DESIGN & CONSTRUCTION
- JKR IN MITI
- SUCCESS STORY
- LESSONS LEARNT

PROJECT OVERVIEW

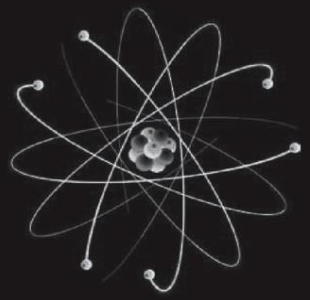
PROJECT & CONTRACT PARTICULARS

OFFICIAL TITLE	**THE PROPOSED DESIGN, CONSTRUCTION AND COMPLETION OF GOVERNMENT BUILDING (MITI HQ) AND EXTERNAL WORKS ON PART OF PT 25966 (FORMERLY KNOWN AS PLOT 8), JALAN KHIDMAT USAHA, MUKIM BATU, KUALA LUMPUR**
NATURE OF CONTRACT	**CONCESSION AGREEMENT (GOVERNMENT vs PJH) PRIVATE FUND INITIATIVE (PFI) – UK MODEL**
CONCESSION PERIOD	**28 YEARS AND 6 MONTHS (3 ½ Years Construction + 25 Years Maintenance)**
SCOPE/COMPONENT	**TOWER (Office - 31Level), PODIUM (Facility - 3Level), SUB-BASEMENT (Parking - 2Level)**
CONSTRUCTION PERIOD	**3 ½ YEARS (42 MONTHS)**
COMMENCEMENT DATE	**4TH JUNE 2012**
COMPLETION DATE (CONTRACTUAL)	**3RD DECEMBER 2015**
CERTIFICATE OF COMPLETION & COMPLIANCE (CCC)	**28TH SEPTEMBER 2015**
CERTIFICATE OF AVAILABILITY	**1ST OCTOBER 2015**
CERTIFICATE OF ACCEPTANCE	**13RD OCTOBER 2015**
END-USER	**MINISTRY OF INTERNATIONAL TRADE AND INDUSTRY (MITI)**
GOV. TECHNICAL REPRESENTATIVE	**JABATAN KERJA RAYA MALAYSIA**
DEVELOPER	**PUTRAJAYA MANAGEMENT SDN BHD**
PROJECT MANAGER	**KLCC PROJEKS SDN BHD**
MAIN CONTRACTOR (DESIGN & BUILD)	**WCT BERHAD**

CONSULTANTS	CHECKER (PJH)	IN-HOUSE (WCT)
ARCHITECT	**RSP ARCHITECTS** SDN BHD	**ARC PARTNERSHIP**
CIVIL & STRUCTURE	**PERUNDING AZIZ, AZALI & TEE** SDN BHD	**JPS CONSULTING ENGINEERS** SDN BHD
MECHANICAL & ELECTRICAL	**LI-ZAINAL** SDN BHD	**J.ROGER PRESTON (M)** SDN BHD
QUANTITY SURVEYOR	**JURUKUR BAHAN UTAMA**	-
INTERIOR DESIGN	**RADIUS GSA** SDN BHD	-
LANDSCAPE	**LANDARC ASSOCIATES** SDN BHD	**CLOUSTON DESIGN (M)** SDN BHD
GBI FACILITATOR	**PETAREKA PERUNDING (M)** SDN BHD	**BSD CONSULTANCY** SDN BHD
FACADE	**PINTAR JAYA (M)** SDN BHD	**MEINHARDT FAÇADE TECHNOLOGY**
ICT	**ODAX SYNERGIE** SDN BHD	-
AV & BSS	**JURUTERA BUDIMAN (M&E)** SDN BHD	-
FAÇADE LIGHTING	-	**LIGHTWAVE LIGHTING DESIGN** SDN BHD
QLASSIC	-	**CANAAN BUILDING INSPECTION & RECTIFICATION SERVICES**
GB COMMISSIONING SPECIALIST (CxS)	-	**COFRETH (M)** SDN BHD
BEHAVIOUR BASED SAFETY (BBS)	-	**BUREAU VERITAS CERTIFICATION (M)** SDN BHD

DESIGN CONCEPT

DESIGN CONCEPT

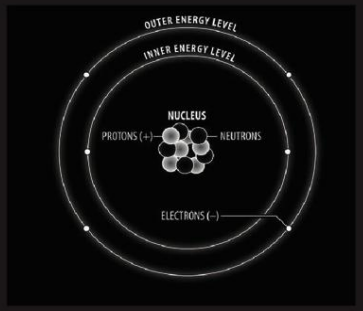


The Icon of Dynamic and Efficiency

The elemental form of energy is the movements of electrons around a nucleus, constantly spinning and moving away from each other yet held in their shells by the electrical force.

The new MITI headquarter is envisioned as an icon identified by the flow of energy, in synchronization with its progressive vision and mission.

The architecture is dynamic with its curving glass façade soaring endlessly to the sky. Within the dynamic of the form, the building is efficient in its space usage. It will incorporate energy efficiency standard, in line with the global vision that MITI is a part of.



The Symbol of Efforts and Sacrifices

In the modern culture, the candle has evolved from being utilitarian to an artwork due to its aesthetic value.

MITI can be identified as a 'candle' in our country for its efforts in spurring the nation economic activities as well as mapping the future of economic growth.

The new headquarter epitomized the characters of a burning candle, as the symbol of MITI continuous efforts and sacrifices.

DEVELOPMENT DATA

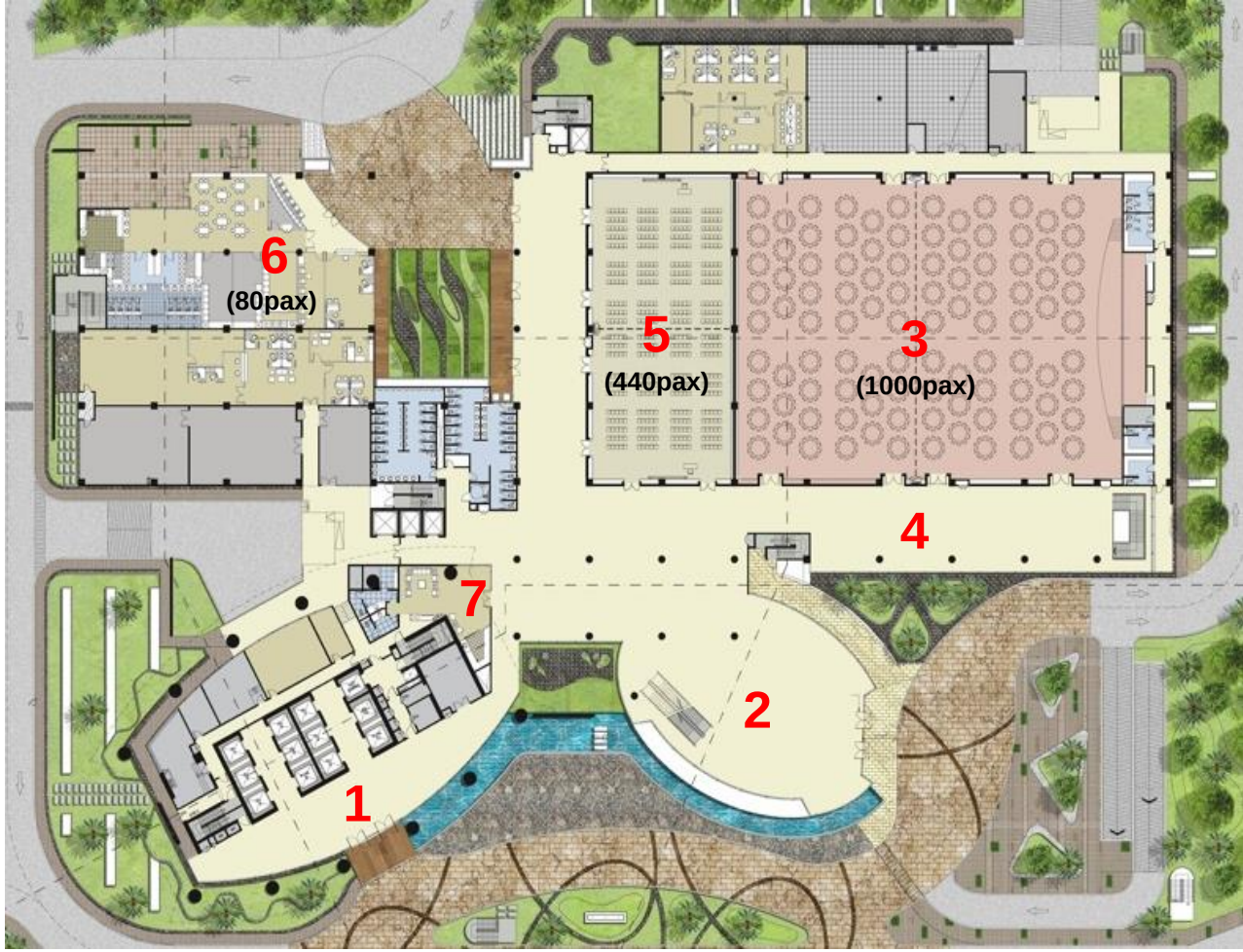
LAND AREA	**30,082.16m2 (7.4 Acre)**
GFA W/O CARPARK	**53,408m2**
GFA WITH CARPARK (GBA)	**84,648m2**
NETT FLOOR AREA	**39,727m2**
PLOT RATIO	**1.77**
PLINTH AREA	**7,894.15m2**
OVERALL EFFICIENCY	**73%**
BASEMENT AREA	**31,240m2**
OPEN SPACE COVERAGE	**22,188m2**
LANDSCAPE RESERVED	**10,500m2**
PARKING BAYS	**CARS 805nos M.CYCLES 134nos**


TOWER LOBBY


FOYER / GALLERY


MULTI-PURPOSE HALL


PRE-FUNCTION



FLOOR PLAN LEVEL 1

1 TOWER LOBBY

2 FOYER / GALLERY

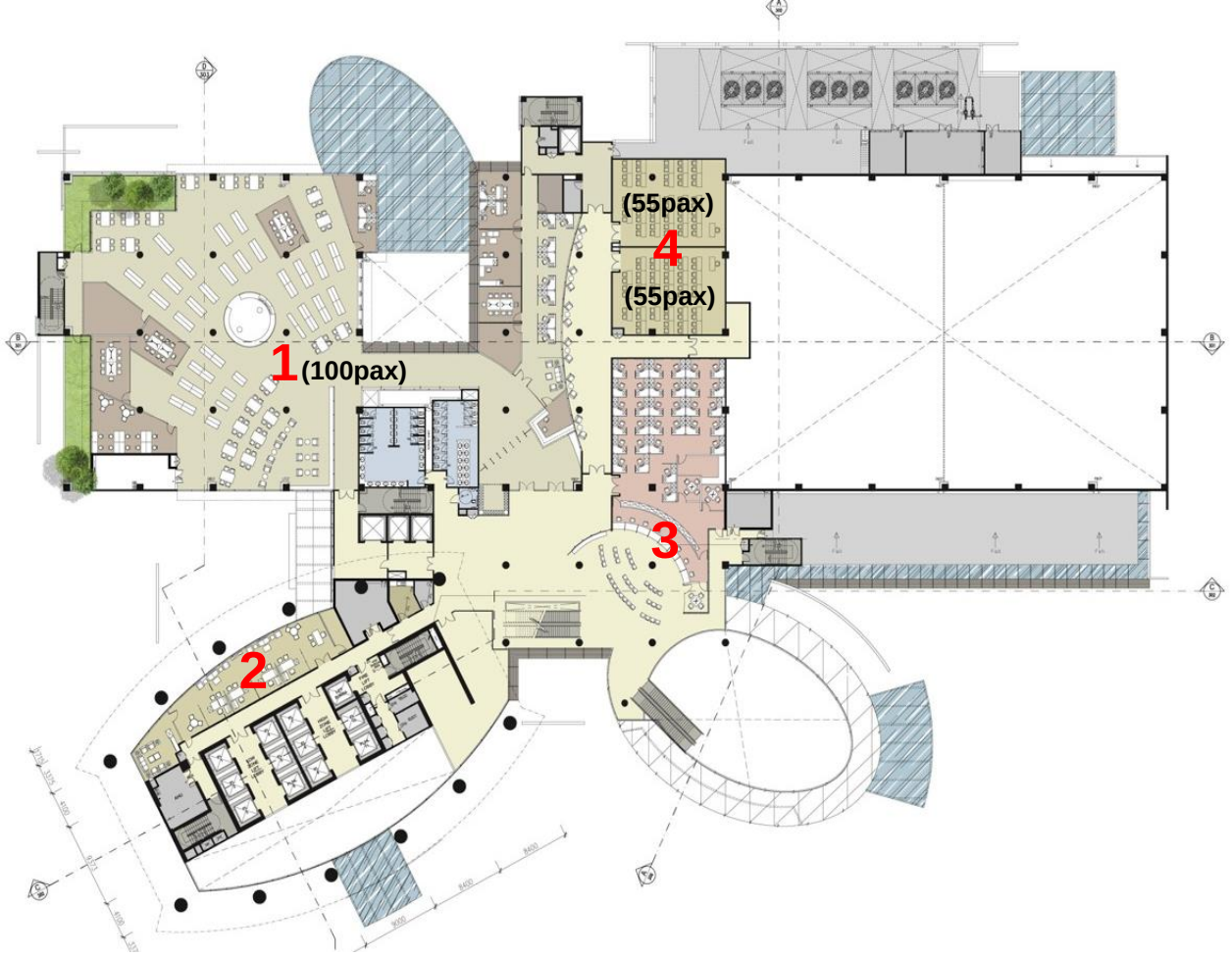
3 MULTI-PURPOSE HALL

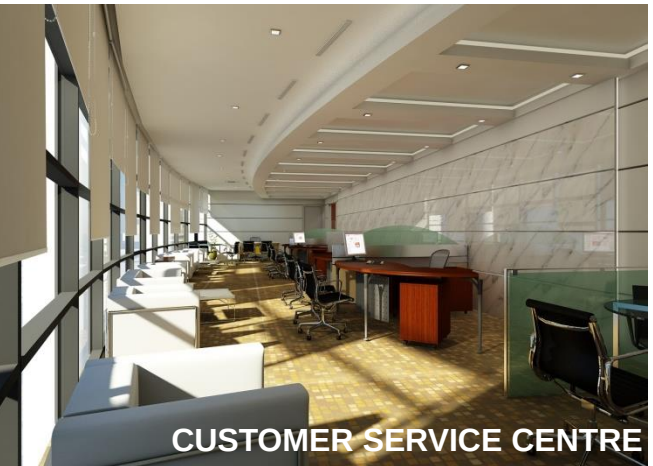
4 PRE-FUNCTION

5 SEMINAR ROOMS

6 TASKA

7 VIP ROOM





FLOOR PLAN **LEVEL 2**

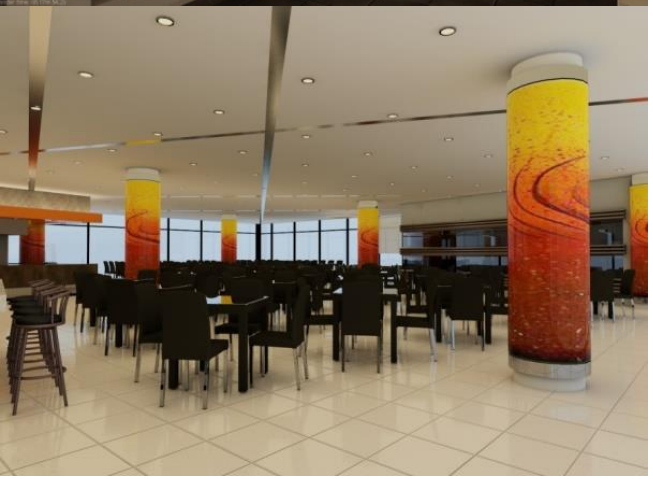
1 LIBRARY

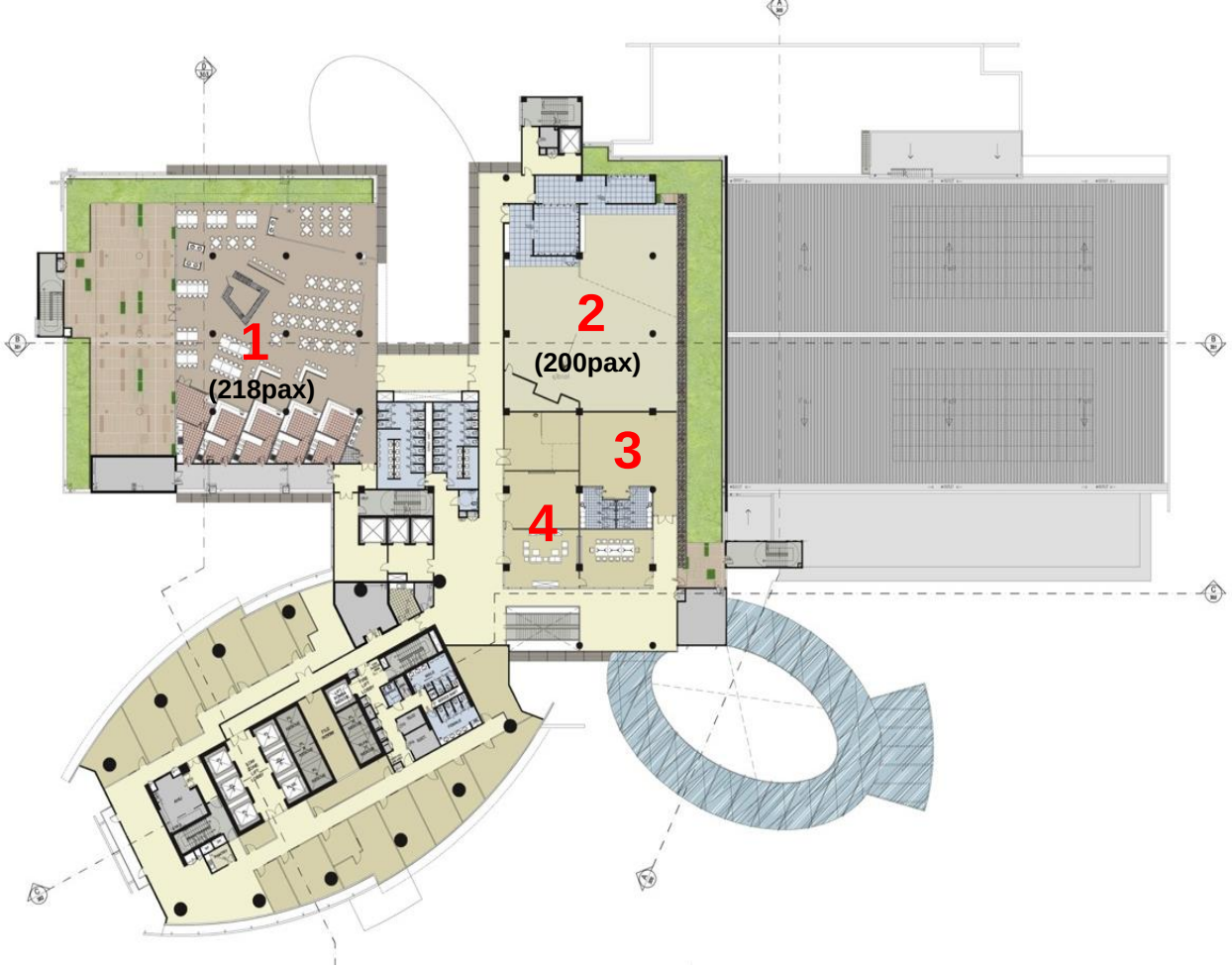
2 CUSTOMER SERVICE CENTRE

3 SERVICE COUNTER

4 TRAINING ROOMS

CAFETARIA






SURAU

FLOOR PLAN **LEVEL 3**

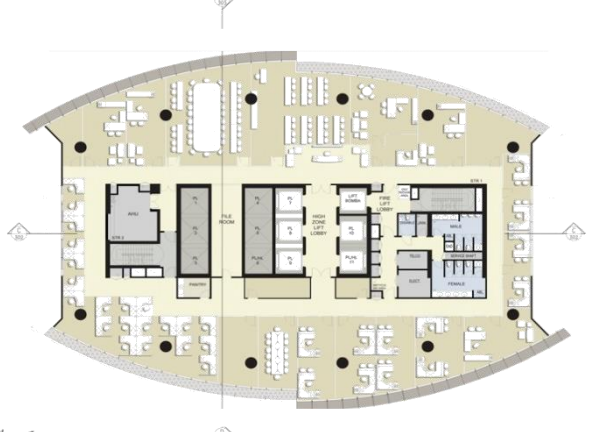
1 CAFETARIA

2 SURAU

3 GYMNASIUM

4 CLUB ROOMS

OPEN PLAN OFFICE



TYPICAL TOWER FLOOR PLATE

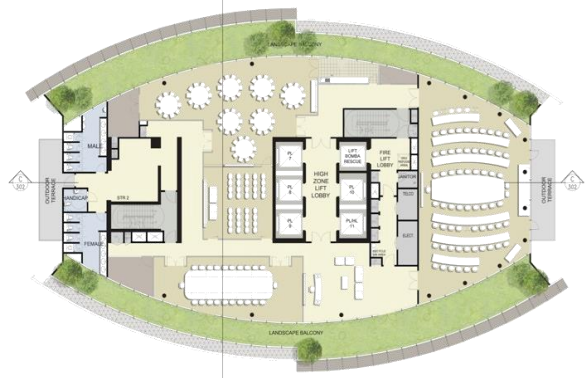
OFFICER ROOM (JUSA)

MINISTER'S OFFICE

LEVEL 30 MINISTER'S OFFICE

MINISTER'S MEETING ROOM

BOARDROOM

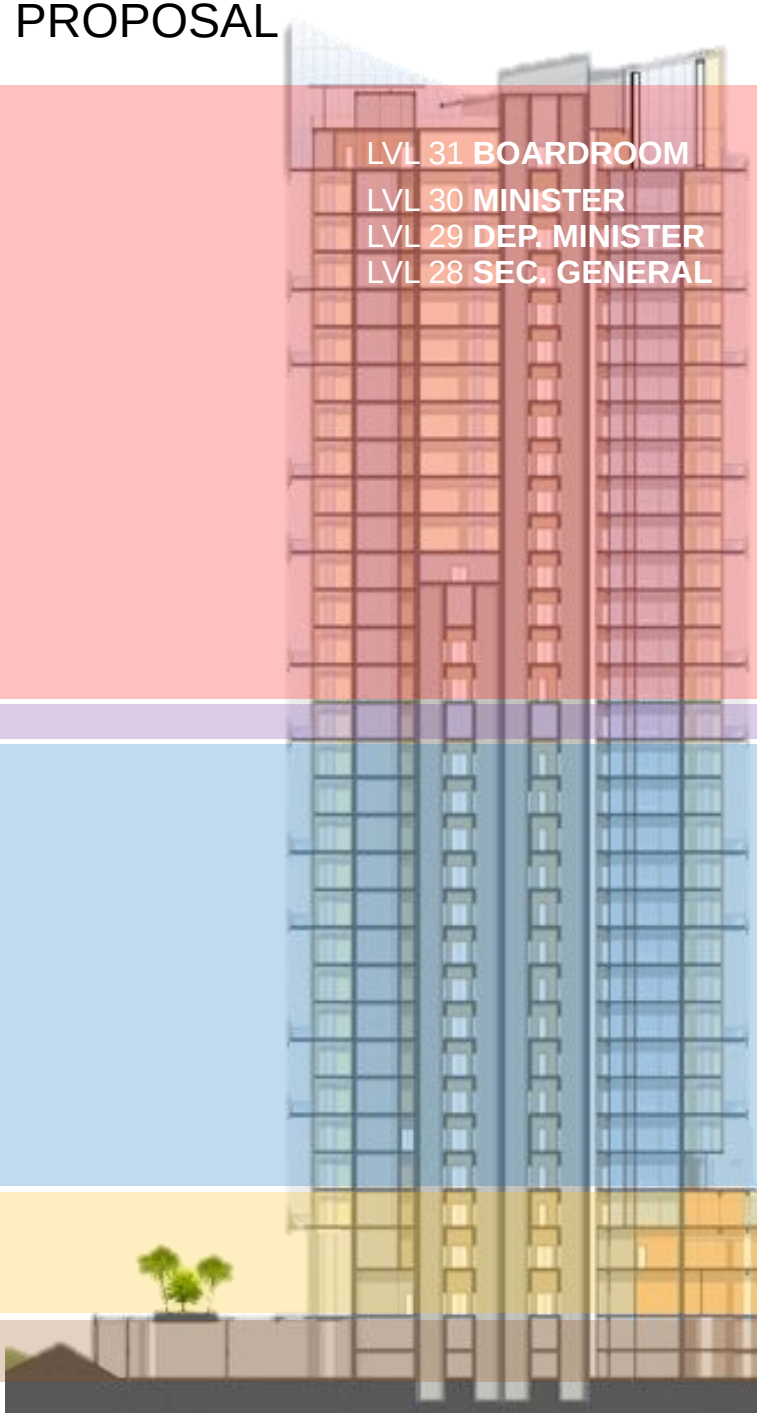


LEVEL 31 BOARDROOM

TOP FLOOR DINING AREA

CROSS **SECTION**

STACKING PROPOSAL



HIGH ZONE (OFFICE) LVL 17 – 31

MECHANICAL FLOOR LVL 16

LOW ZONE (OFFICE) LVL 4 – 15

PODIUM (SUPPORT FACILITIES) LVL G – 3

BASEMENT (PARKING) LVL LG 1&2

ELEVATION

SOUTH

WEST

DESIGN & CONSTRUCTION

SPECIAL PARAMETERS

greenbuilding

GREEN BUILDING INDEX CERTIFICATE NO.
GBI-NRNC-0035(P)

DATE OF ISSUANCE
6 APRIL 2012

MENARA PEJABAT KEMENTERIAN PERDAGANGAN ANTARABANGSA DAN INDUSTRI (MITI)

DI ATAS SEBAHAGIAN PT25966, JLN KHIDMAT USAHA, MUKIM BATU, WILAYAH PERSEKUTUAN KUALA LUMPUR, MALAYSIA

HAS BEEN AWARDED

green building index

GOLD

PROVISIONAL GBI CERTIFICATION

AWARD SYSTEM	
CERTIFIED	50-65
SILVER	66-75
GOLD	**76-85**
PLATINUM	86-100

DA
DESIGN ASSESSMENT

OWNER/APPLICANT
PUTRAJAYA MANAGEMENT SDN BHD

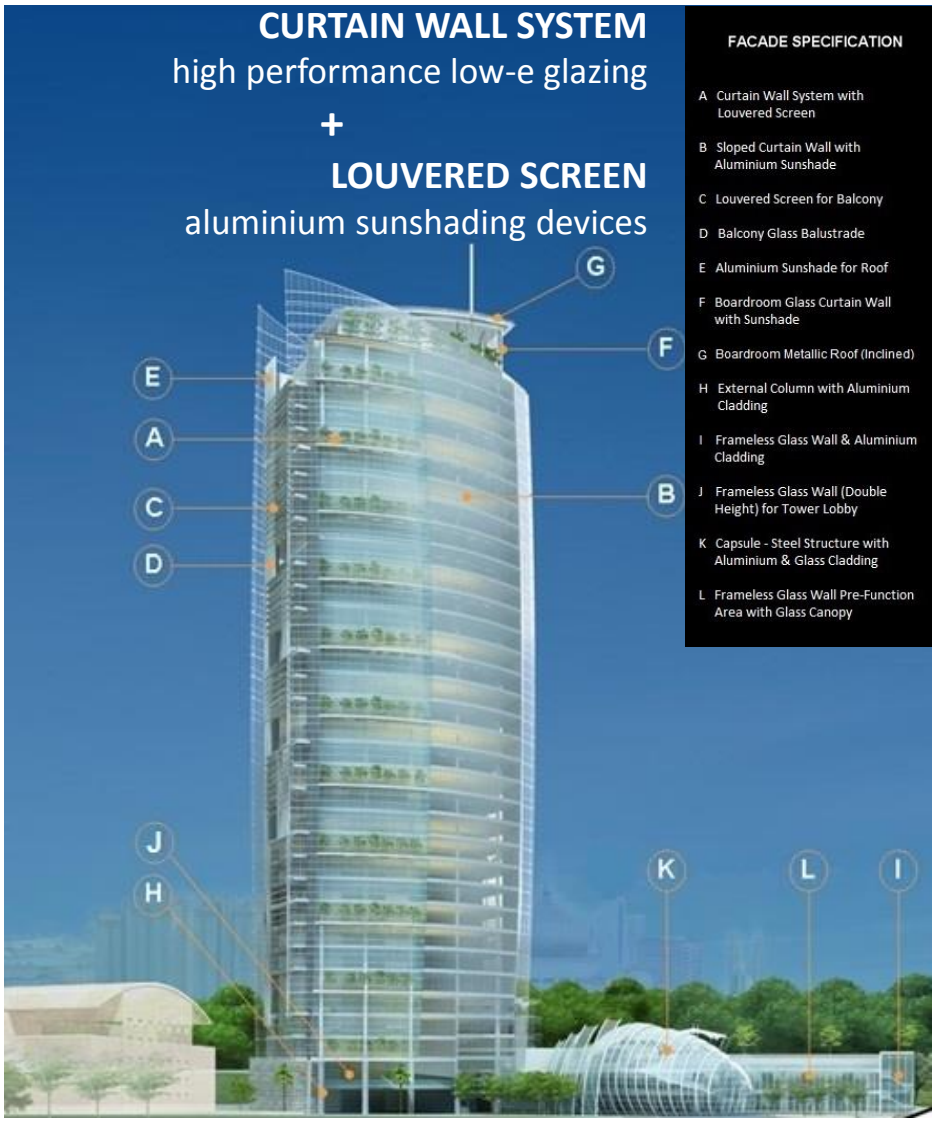
84
POINTS

AR. SOON CHE WEE
CHAIRMAN
GREEN BUILDING INDEX (GBI) ACCREDITATION PANEL

GREENBUILDINGINDEX SDN BHD (805444-H)
A-12-13A Menara UOA Bangsar, 5 Jalan Bangsar Utama 1, 59000 Kuala Lumpur, Malaysia
Tel 603 2282 2566 Fax 603 2284 2566
www.greenbuildingindex.org | info@greenbuildingindex.org

SOLAR **FAÇADE**

CURTAIN WALL SYSTEM
high performance low-e glazing
+
LOUVERED SCREEN
aluminium sunshading devices

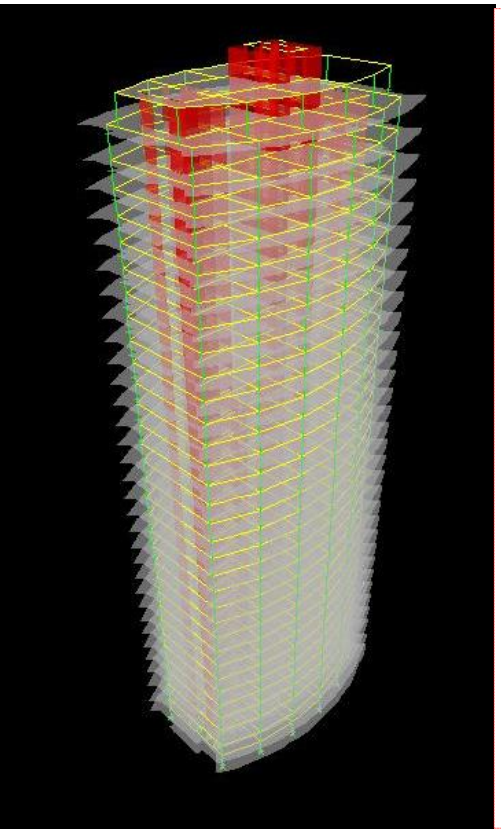


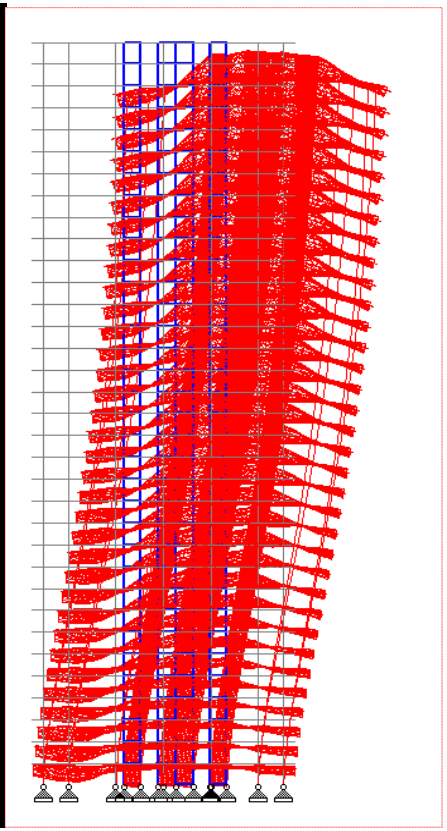
FACADE SPECIFICATION

A Curtain Wall System with Louvered Screen
B Sloped Curtain Wall with Aluminium Sunshade
C Louvered Screen for Balcony
D Balcony Glass Balustrade
E Aluminium Sunshade for Roof
F Boardroom Glass Curtain Wall with Sunshade
G Boardroom Metallic Roof (Inclined)
H External Column with Aluminium Cladding
I Frameless Glass Wall & Aluminium Cladding
J Frameless Glass Wall (Double Height) for Tower Lobby
K Capsule - Steel Structure with Aluminium & Glass Cladding
L Frameless Glass Wall Pre-Function Area with Glass Canopy

High performance façade design achieving **OTTV less than 45W/m²**

SEISMIC **DESIGN**





Seismic Zone: Zone 1 (JKR Needs Statement)

Seismic Ground Motion: 0.075g (UBC 1997)

Analysis Program: ETABS

Overall Tower Deflection Due to Seismic: 178mm (280mm)

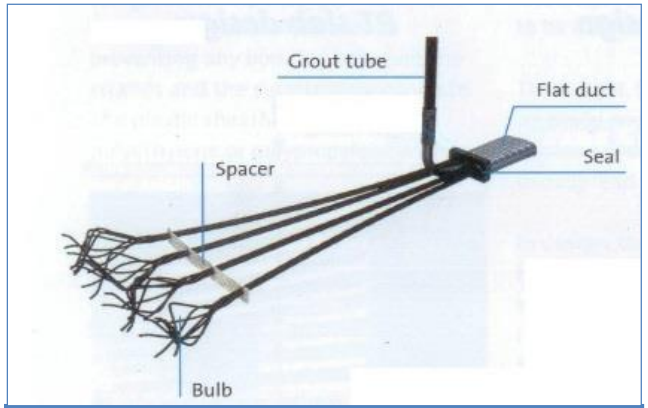
Inter-Storey Deflection Due to Seismic: 7.95mm (8mm)

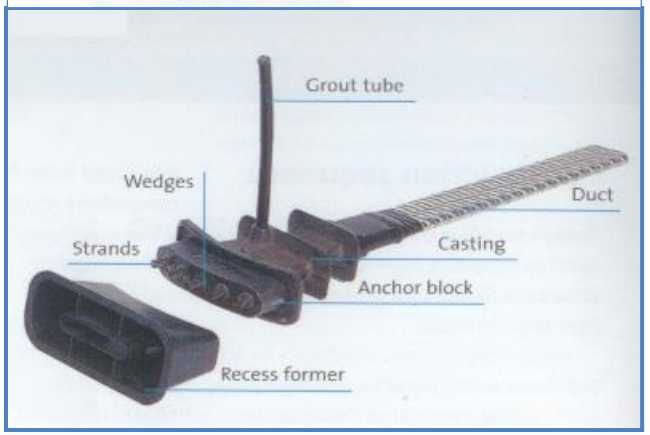
Impact:

1) Confinement at Column-beam connection required

2) Core Wall confinement required

POST TENSIONED SLAB





Structural System: One Way Post Tensioned Slab

Floor: All Tower Floors from L3 to L31

Span: a) 200mm thick PT Slab Spanning 8.9m

b) 550 mm deep PT Beam Spanning 17.5m

PT System: Flat duct with Strand 12.7mm/0.5”seven wires

Concrete Grade: G40

Reinforcement: a) PT Slab: Mesh A8 Bottom Mat

b) PT Beam: 16T16(T&B) & L3.T10.250 Links

doka

The Formwork Experts

- COUNTRY OF ORIGIN : **AUSTRIA**

JUMP FORM SYSTEM
(CORE WALLS)

TABLE FORM SYSTEM
(SLAB AND BEAM)

world-leading **standing seam roofing** and **wall cladding** system

Industrial Building System

QLASSIC
Quality Assessment System In Construction

SCORE SUMMARY

Part 1 :

Structural System = **23.66**/50.00 points

Part 2 :

Wall System = **14.10**/20.00 points

Part 3 :

Others Simplified

Construction Solution = **30.00**/30.00 points

TOTAL IBS SCORE FOR MITI **67.76**/100.00points

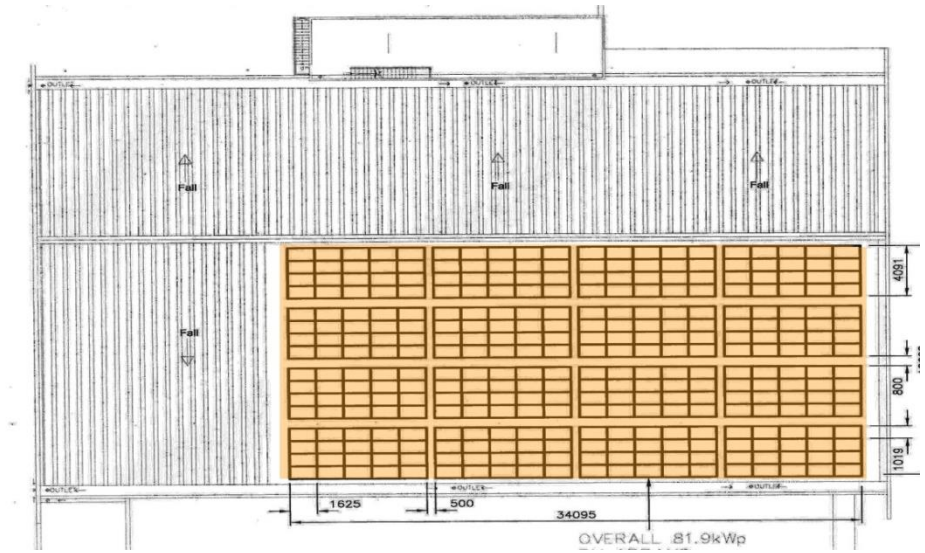
** Calculation For IBS Score (Form CIDB IBS Score M1 rev 2010)*

TARGET QLASSIC SCORE DISTRIBUTION - MITI PROJECT

Assessed Area	Targeted Percentage (%)	Weighted Score (%)	Score	Remark
1. Internal Finishes (80.18 %)				
Floors	75%	14.92	11.19	
Internal Walls	65%	14.92	9.70	
Ceilings	80%	5.60	4.48	
Doors	70%	5.60	3.92	
Windows	75%	5.60	4.20	
Components	80%	5.60	4.48	
Roof	80%	9.32	7.45	
External Wall	80%	9.32	7.45	
Apron & P.Drain	80%	3.70	2.96	
Materials & Functional Test	100%	5.60	5.60	Declaration by Architect (Pre- pack Plaster & Wet Area -Water Tightness Test)
Architectural Works Score			58.19	
External Works	80%	17.82	14.26	
5.0 M&E Fittings				
Sub-Total (E)	75%	2.00	1.50	
		100		
QLASSIC SCORE FOR MITI			77.19%	

TARGET SCORE **77.19%**

QLASSIC SCORE FOR MITI **82.00%**



INSTALLATION AT L3 ROOF (MULTI-PURPOSE HALL)

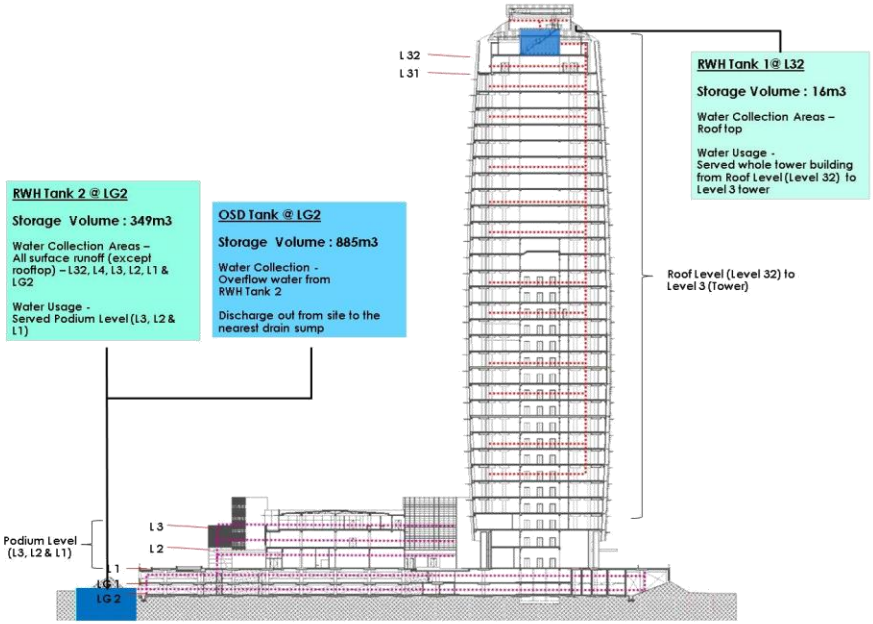
TOTAL SOLAR MODULE : **320 NOS.**

ANNUAL RENEWAL ENERGY : **74,471.75 KWH/YEAR**

KNX is the worlds only standard for open protocol building control

Facilities management can easily monitor the entire building and can control whole areas from one central position

RAINWATER **HARVESTING**



WASTE MANAGEMENT

SCHEDULED WASTE

TIMBER WASTE

RECYCLABLE WASTE

CONSTRUCTION WASTE

CHEMICAL WASTE

DOMESTIC WASTE

JKR IN MITI

APPOINTMENT BACKGROUND

Nature : **Temporary Post Transfer (JKR to MITI)**

Duration : **1ST January 2012 – 31ST December 2016 (5 Years)**

Strength : **6 Officers [J54 (1) - J52 (1) - J48 (4)]**

Role : **Technical Advisor to MITI**
P.D(MITI's Sec. Gen.) Rep. in Projects

Projects : **MITI HQ – MITEC – Malaysia Pavilion - Others**

Ir. ZULKIFLI AHMAD

MECHANICAL ENGINEER (J54)

Ir. MUHYI @ MOHAMAD YUSOF ALI

CIVIL ENGINEER (J52) - Retired

TEAM JKR

Sr. HAZLAN GHAZALI

QUANTITY SURVEYOR (J48)

AHMAD ZAIDI MAT SAID

STRUCTURAL ENGINEER (J48)

MULYADI MOHAMED

ELECTRICAL ENGINEER (J48)

NORIMAN MUHAMMAD

ARCHITECT (J48)

SUCCESS STORY

ACHIEVEMENTS

TIME

- COMPLETED 4 MONTHS AHEAD OF SCHEDULE

COST

- NO ADDITIONAL COST (V.O) TO THE GOV.

QUALITY

- GBI COMPLIANCE : ACCREDITATION GOLD RATING
- HIGH QUALITY FINISHES & WORKMANSHIP WITH QLASSIC SCORE EXCEEDING 70 POINTS
- SUCCESSFUL DELIVERY OF A COMPREHENSIVE OFFICE COMPLEX WITH COMPLETE FACILITIES UNDER ONE ROOF
- HIGH USAGE OF LOCAL MATERIAL IN CONST.

FUNCTIONALITY

- BEFIT THE IMAGE AND FUNCTIONS OF MITI
- ENERGY EFFICIENT BUILDING WITH **BEI** LESS THAN 120KWH/M^2/YEAR
- CONSIDERABLY LOW POST OCCUPANCY DEFECTS COMPLAINTS

OTHERS

- ZERO CASUALTY DURING CONSTRUCTION
- SMOOTH AND SPEEDY MIGRATION PROCESS
- LETTER OF APPRECIATIONS FROM CLIENT
- JKR REDEEMS ITS IMAGE IN MITI

LESSONS LEARNT

LESSONS LEARNT

RELEVANCE OF JKR

- Higher Level Project Management
- Pivotal Multi-Level Liaison Role
- Custodian of Gov.'s Interests
- Complete – All Disciplines
- Standard Setting
- Good Governance
- Quality Leadership

IMPLEMENTATION PROCESS

- True Partnering Practice
- Output Driven / Result Oriented
- Simplify Procedure / Minimize Bureaucracy
- Systematic Monitoring
- Project Delivery Priority
- Encourage Use of Latest Technology / Innovation
- Learn From Mistakes of Others
- Workers Welfare
- Managing Human Factors

LESSONS LEARNT

THE PROJECT TEAM

- The ‘Right’ Key Players
- Well-Organized Structure
- Clear Line of Communications
- Respect Each Other’s Roles
- Competent & Committed
- Harmonious Relationship
- Collective Ownership
- Sharing Of Knowledge

THANK YOU