



PT. DAIKIN APPLIED SOLUTIONS INDONESIA
(Formerly PT. Tatasolusi Pratama)

MCQUAY APPLICATION





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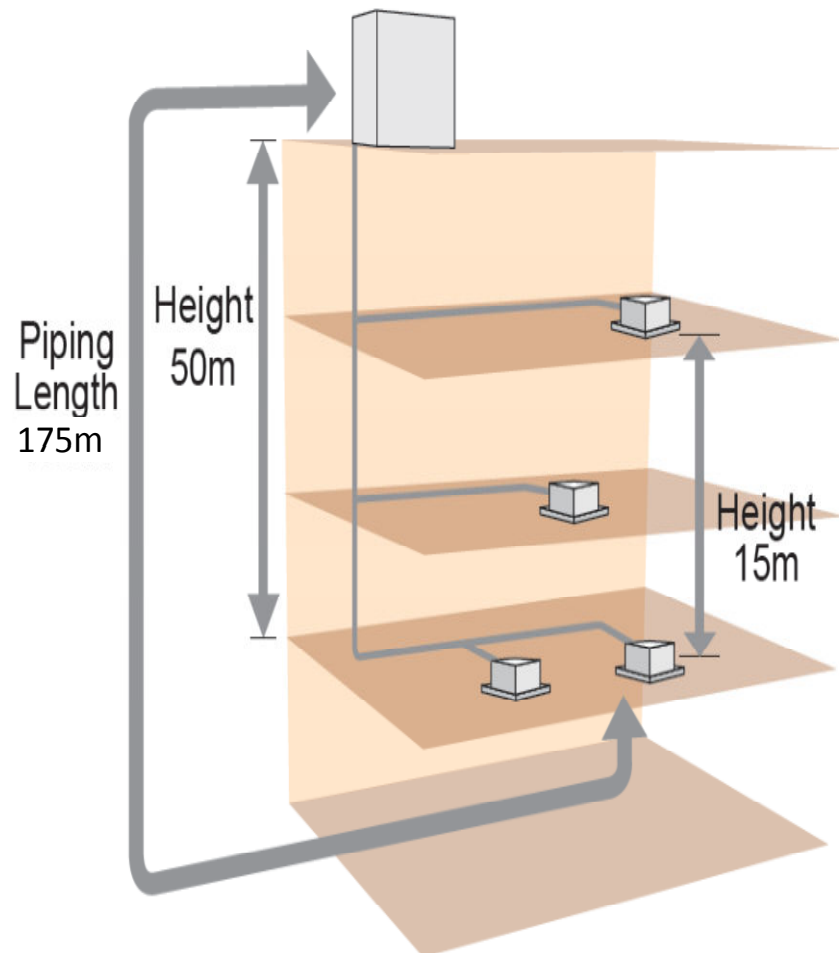


MCQUAY MULTI DIGITAL SCROLL



Another Quality Product by **DAIKIN**

Long Piping Design Offers Flexibility



*2 For 5MDS120B(R) and above

*3 For OD is above indoor

- ❖ Maximum length between OD and ID (longest branch):
R410A - 175 meters *2
- ❖ The maximum height between OD and the lowest ID is 50 meters *3
- ❖ The maximum height between highest and lowest ID is 15 meters

Modular Digital Scroll & Variable Refrigerant Flow System

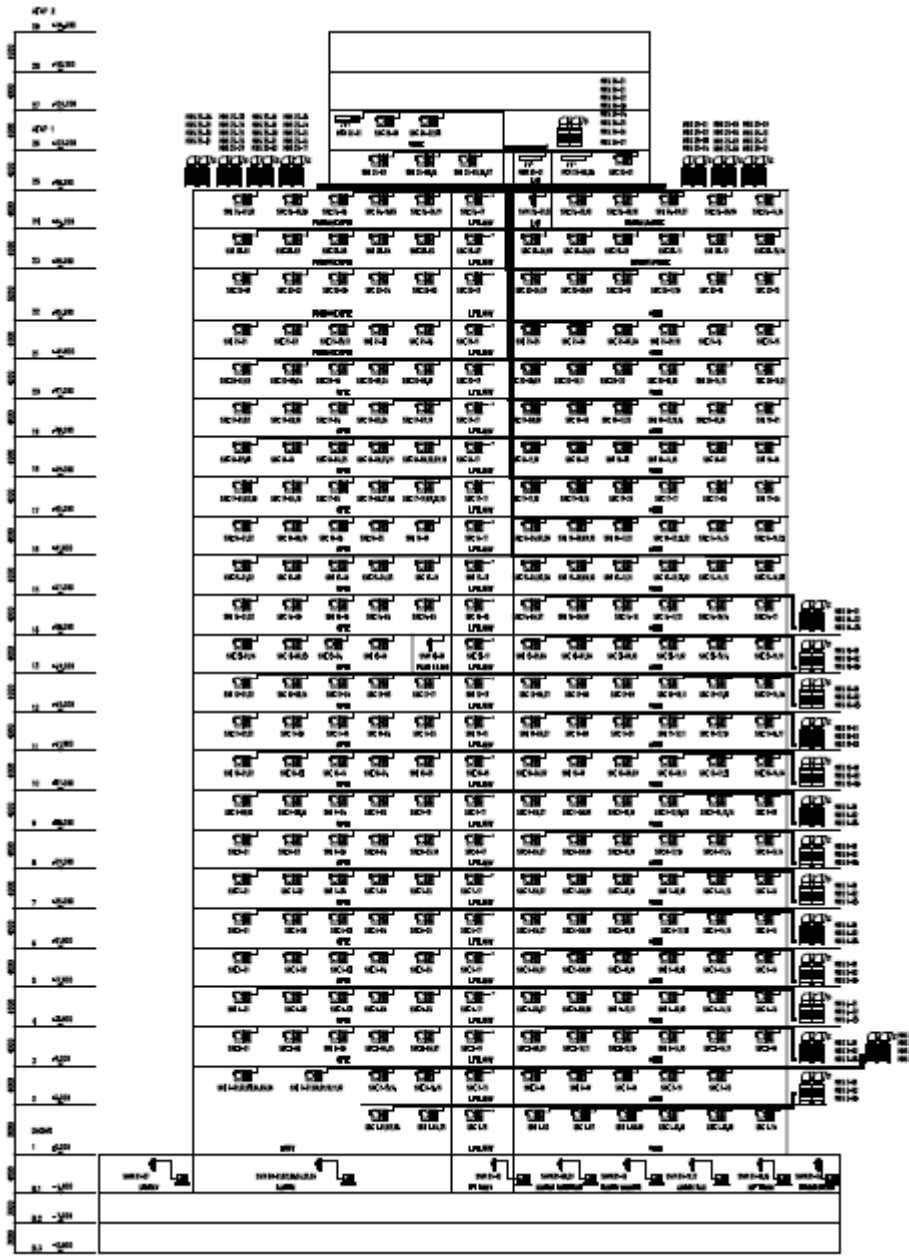
Menara Palma Case Study

Menara Palma is one of the iconic tower in Jakarta Selatan. Total build area is around 30,000m² where the whole building are using McQuay MDS System. The building is 26 level height and all the MDS Outdoor Units were allocated on the rooftop & balcony of level 2 –14. This project was supplied by McQuay and finished installed in the year of 2009.

This project are using all Air Cooled MDS System, by using air cooled DX system, the building are free of chilled water matainance. The main building are mostly using ceiling concealed with ducting system, most of the level are rented out to other tenant like Pt. AIA, ZOMATO, PT. BIMA SAKTI BERJANGKA, KORSINDO FOUNDATION, etc. In order to make the tenant more convenience and flexible to use the Air Conditioners, MDS system allowed the individual control & efficient partial load.

This building have been operated since 2010 and until now the MDS system still providing the comfort & cooling air to the building. With this project reference, we believed that MDS is one of the most reliable system which combining the digital scroll technologies with variable refrigerant flow application.





Build up	Area	30,000 m ²
	Height	26 Floor
System	Total Cap.	18,780,000 Btu/hr
	Outdoor	84
	Indoor	465
Application	Office	MDS System
	Parking	MWM
	Control	Centralized Control 3 Gate Way 3 PC



Diagram Schematic VAC MDS

Another Quality Product by DAIKIN



LOBBY AREA MENARA PALMA



ZOMATO RESTAURANT



AIA OFFICE

Another Quality Product by **DAIKIN**



MWCP18 - MWCP205

Capacity (HP) 5.8 - 68



MWH008 - MWH350

Capacity (HP) 0.8 - 32.4

WATER COOLED PACKAGED



Water Cooled Package System

Mall Bale Kota Case Study



Build up	Area	188,000 m ²
	Height	4 Floor
System	Total Cap.	56,000,000 Btu/hr
	Outdoor	0
	Package	334
Application	Shops	MWH
	Common area	MWCP
	Controll	Individual Controller

MALL BALE KOTA

JL. SUDIRMAN – TANGERANG – BANTEN

Another Quality Product by 

Water Cooled Package System

Mall Bale Kota Case Study

Mall Bale Kota is one of the most largest mall located in Tangerang. The build up area is almost 190,000m². This mall positioning them self as the high class commercial area where their tenants included fashion, beauty, health care, reataurant, life style, etc.

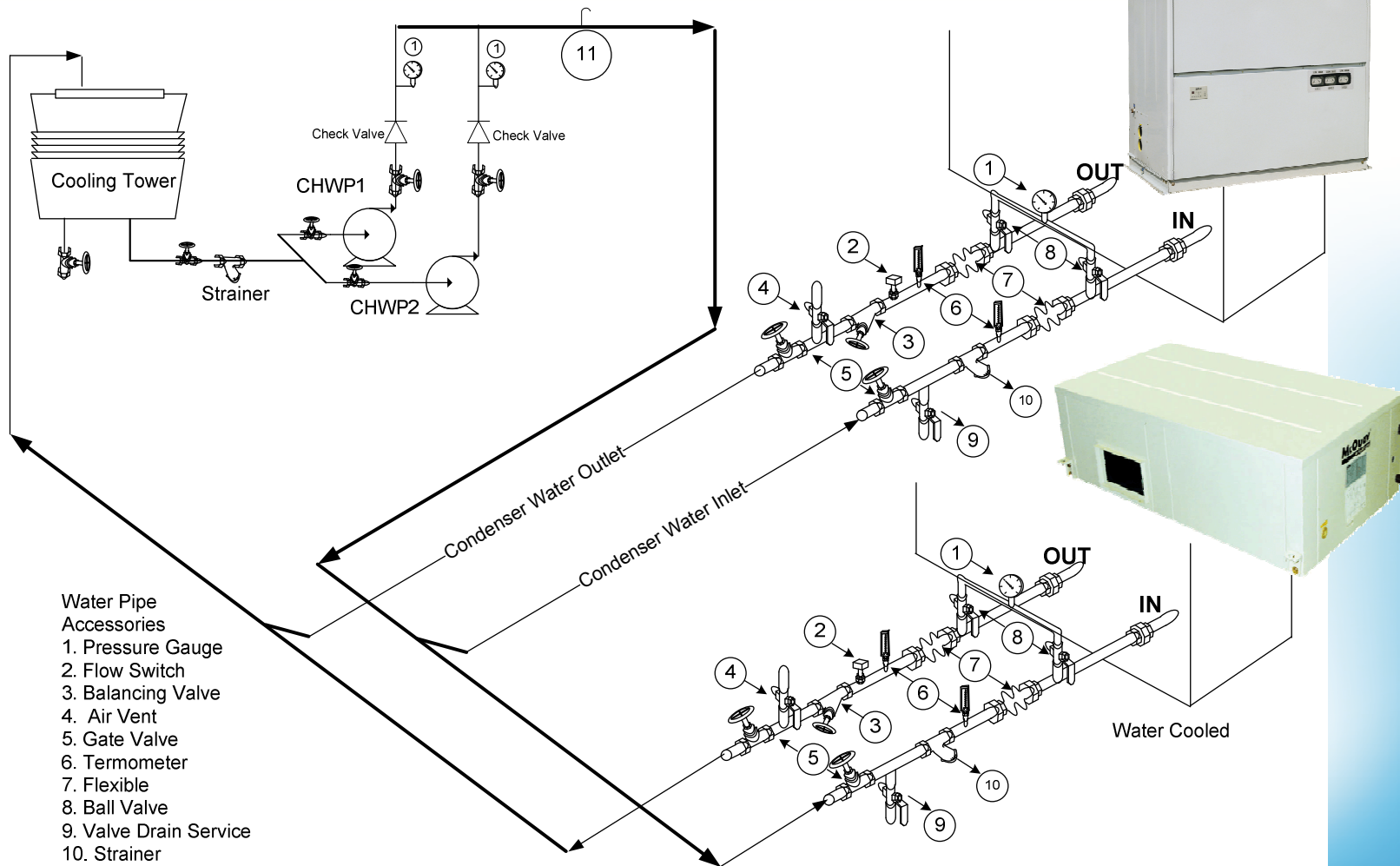
Since the tenants are having various type of business & the business operation hours are mostly difference, their requirement of air conditioning usage will also difference. Thus, with installed the McQuay Water Cooled Pakage System, it is much easier for the individual control as well as the tenant management.

All tenant are now using the colling water which connected to the cooling tower for cooling down the condenser on their own unit, this process is centralized control by the mall management.

Mall Bale Kota started operating since year 2012 and until now there are zero complaint received by the customer because of the system liability and of course with the good practice of right installation.



Piping Skematik Diagram WCP



- Water Pipe
Accessories
- 1. Pressure Gauge
 - 2. Flow Switch
 - 3. Balancing Valve
 - 4. Air Vent
 - 5. Gate Valve
 - 6. Termometer
 - 7. Flexible
 - 8. Ball Valve
 - 9. Valve Drain Service
 - 10. Strainer
 - 11. Automatic Air Vent



Tenant Mall Balekota



AIR HANDLING UNIT



Selamat Datang di
RSUD Dr. Mohammad soewandhie

RSUD Dr. Mohammad Soewandhie

JL. Tambak Rejo No. 45 – 47, Surabaya

Another Quality Product by  **DAIKIN**

Air Handling Unit

RSUD Dr. Soewandi Case Study



Since the Indonesia economic has been grown rapidly in recent years, the demand of the hospital and its facilities are keep on increased as well. RSUD Dr. Soewandhie is one of the hospital in Surabaya that had improved their facilities to suite the international standard especially for the Operating Theatres.

In order to provide the comfort, clean & safety used medical environment for their patients, RSUD Dr. Soewandhie had choosen McQuay AHU system to be installed into their 4 Operating Theatres.

Total build up area is 4,768 m². They are classified as Class B. The OT room have all the McQuay AHU system design was based on ASHREA standard example air change per hour, RH, design temprature & class of filter.



Buid up	Area	4,768m ²
	Class	B
System	Total Cap.	655,000 Btu/hr
	Airflow	15,000 CFM
	Fresh air	15%
Application	Design Temp.	22degC
	RH	50%
	Filter	Primary G4 Secondary F8

The new OT room were started operating since year 2012 and RSUD Dr. Soewandhie now had obtained the “Akreditasi 5 Pelayanan” from “Komite Akriditasi Rumah Sakit Departemen Kesehatan Republik Indonesia”.

Table 3 Ventilation Requirements for Areas Affecting Patient Care in Hospitals and Outpatient Facilities

Function Space	Pressure Relationship to Adjacent Areas ^a	Minimum Air Changes of Outside Air per Hour ^b	Minimum Total Air Changes per Hour ^c	All Air Exhausted Directly to Outside ^m	Air Recirculated Within Room Units ^d	Relative Humidity, ^a %	Design Temperature, ^e °C
Surgery and Critical Care							
Operating room (class B and positive C surgical)	Positive	4	20	—	No	30 to 60	17 to 27
Operating/surgical cystoscopic rooms ^{a, p, q}	Positive	4	20	—	No	30 to 60	20 to 23 ^r
Delivery room ^p	Positive	4	20	—	No	30 to 60	20 to 23
Recovery room ^p	—*	2	6	—	No	30 to 60	24 ± 1
Critical or intensive care (burn or intermediate)	Positive*	2	6	—	No	30 to 60	21 to 24
Newborn intensive care	Positive*	2	6	—	No	30 to 60	22 to 26
Treatment room ^s	—*	2	6	—	—	30 to 60	21 to 24
Nursery suite	Positive	5	12	—	No	30 to 60	24 to 27
Trauma room ^{f, s}	Positive	5	12	—	No	30 to 60	22 to 26
Trauma room (crisis or shock)	—	3	15	—	No	30 to 60	22 to 26
Anesthesia gas storage	Negative	—	8	Yes	—	—	—
GI endoscopy ^{ab}	—	2	6	—	No	30 to 60	20 to 23
Bronchoscopy ^d	Negative	2	12	Yes	No	30 to 60	20 to 23
Emergency waiting rooms	Negative	2	12	Yes	—	30 to 60	22 to 26
Triage areas	Negative	2	12	Yes	—	—	21 to 24
Radiology waiting rooms	Negative	2	12	Yes ^t	—	—	21 to 24
Procedure room (class A surgical)	Positive	3	15	—	No	30 to 60	21 to 24
Nursing							
Patient room	—*	2	6 ^v	—	—	30 (W), 50 (S)	21 to 24
Toilet room ⁵	Negative	Optional	10	Yes	No	—	—
Newborn nursery suite	—*	2	6	—	No	30 to 60	22 to 26
Protective environment room ^{i, q, w}	Positive	2	12	—	No	—	21 to 24
Airborne infection isolation room ^{b, q, x}	Negative	—	12	Yes ^u	No	30 to 60	21 to 24
Isolation alcove or anteroom ^{w, x}	Pos./Neg.	2	10	Yes	No	—	—
Labor/delivery/recovery/postpartum (LDRP)	—*	2	6 ^v	—	—	30 (W), 50 (S)	21 to 24
Public corridor	Negative	2	2	—	—	—	—
Patient corridor	—*	2	4	—	—	—	—

^a See Table 1.



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Workshop

- Building Overview

- **Project Name:** Technology Park Tangerang
- **Design required:** Management office building

1. Prepare a presentation that you could present to owner, work the design by divide into 6 group, each of you shall contribute in the proposal

2. You will be concise and restrict your presentation to 30 Mins and allow an additional 15 Mins for discussion



Workshop

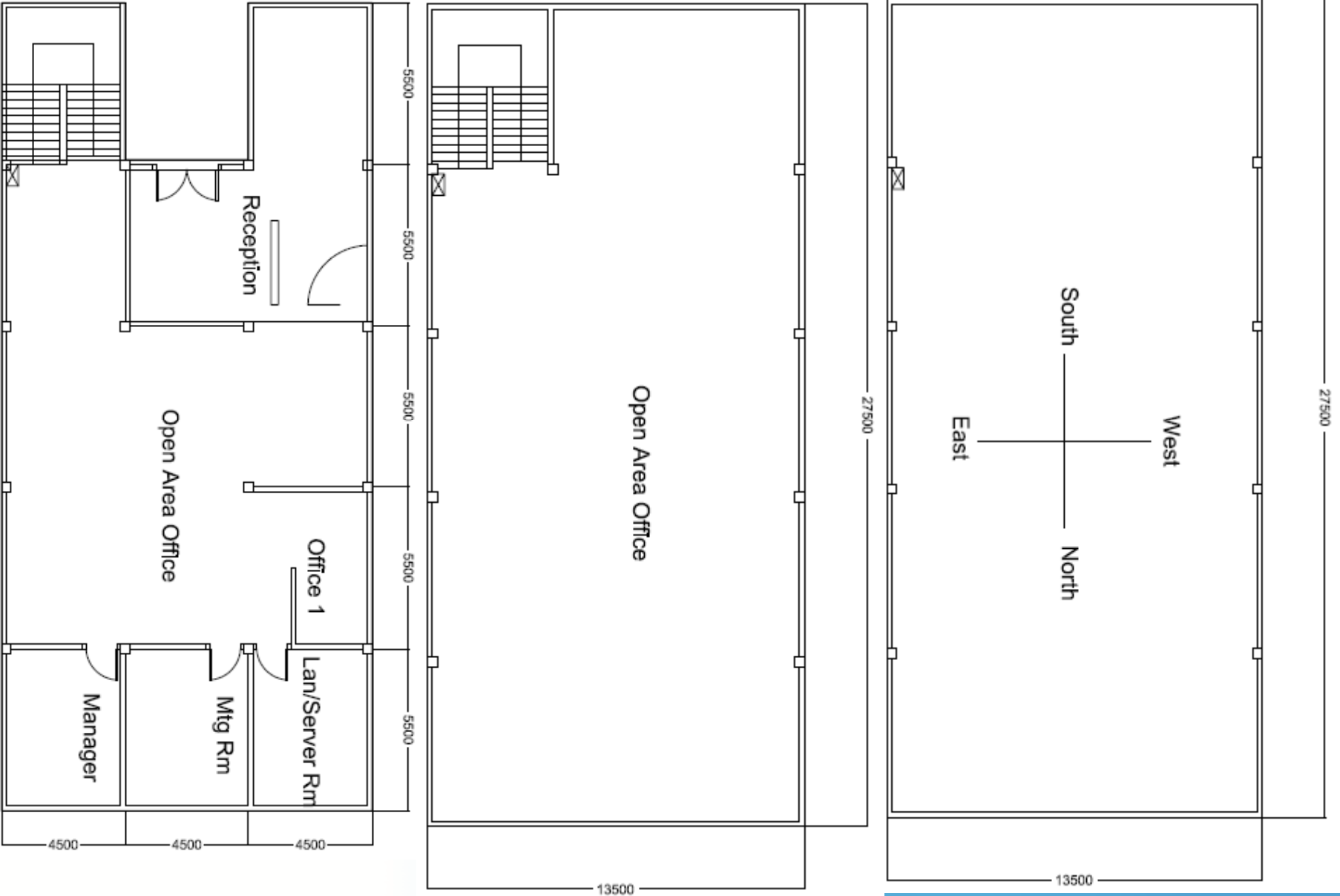
- Supporting photo of the office

Project Name: Technology Park Tangerang

Design required: Management office building



Workshop
- Lay out



Workshop

- Design Load

- **Project Name:** Technology Park Tangerang
- **Design required:** Management office building

Design Condition:

	CDB	R.H. %
Cooling	35	74%

Design Load (kW)

First Floor

	Total
Reception	18.7
Manager	9.7
Meeting Room	9.8
Lan / Server Room	11.2
Open Area Office	34.4

2nd Floor

Total	85.1
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Design Temperature : 24 deg C; RH = 55%

Criteria for the Owner

Building	: 2-Storey Office Block with Slab roof.
Floor to Floor height	: 3.5metres
Floor to Ceiling Height	: 2.7 metres
Metres square/person	: 5 (Office) / 2.5 (Meeting Rm)
Fresh air requirement	: 0.65 l/s per m2 (office)
Fresh air requirement	: 2.8 l/s per m2 (Meeting Rm)
Window thickness	: 8mm
Glass Door at 1 st Floor	: 8mm
Windows	: Venetian Vertical Blinds
Full Height windows	: North, East and West side
Lan / Server room	: Glass with partition wall (Combo wall 150mm)
Lan / Server room	: Standby (Wall mounted FCU/Ceiling Expose)
All area	: Ducted FCU with ducted returned.
Manager and Mtg Rm	: Cassette / Ducted

**Workshop
- Solutions**

- **Project Name:** Technology Park Tangerang
- **Design required:** Management office building



MDS ??



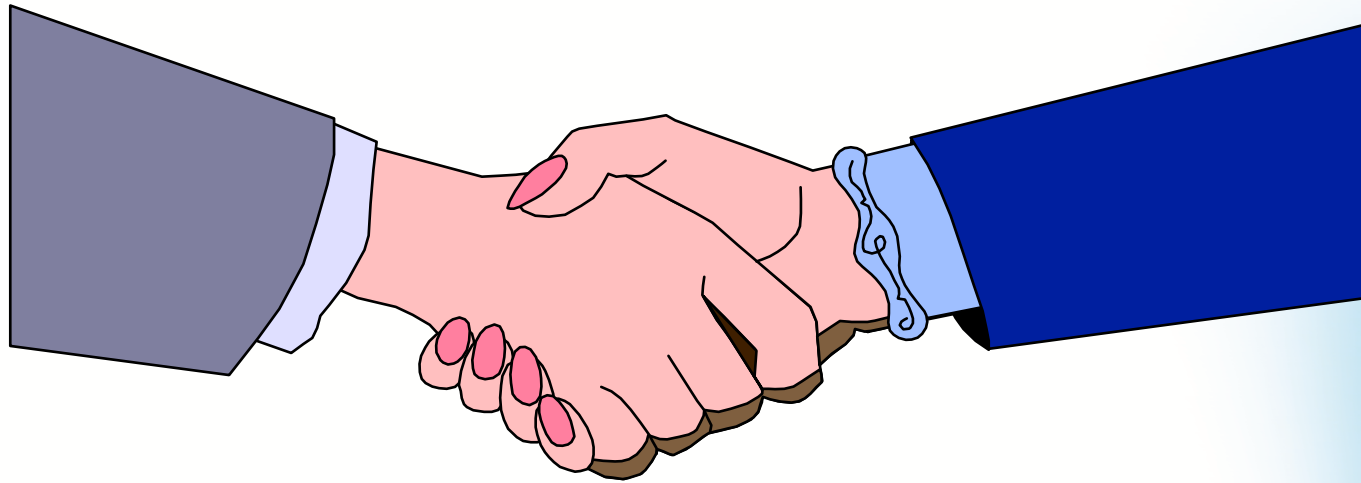
AHU ??



MWCP ??



Thank You



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