

Mechanical, Electrical, Process (MEP) & Cleanroom
- Construction & Project Management -

Tan Si Lim PE, ATD
23th Apr 2018

Content

About Us

- Philosophy
- Key Personnel
- Registration
- Organization Chart
- Safety & Health Policy

Services

- Design & Engineering
- Sourcing & Procurement
- Installation, Construction
- Project Management & Integration
- Testing & Commissioning
- Service & Maintenance

Our Partners

Our Clients – Approved Vendor List (AVL)

Key Project References

About Us

- Philosophy
- Key Personnel
- Registration
- Organization Chart
- Safety & Health Policy



About Us

- Established in 2011 with the **Capital Paid Up of RM1,000,000.00**, in **Penang**, the objective then was to fulfill the needs of our growing buildings and manufacturing industries, especially the **Multinational Corporation (MNC)** in Penang, Malaysia.
- Our core activities are in design, supply, installation, repair, service and maintenance of **Mechanical, Electrical and Process Utilities (MEP)**
- KL office set up in 2014, to extend the service into Data Center, Call Center, TOC, NOC, NMC
- CMEE partners each have over 15 years of experience in supporting clients' critical facility needs.
- The company's staff is comprised of dedicated professionals, encompassing all engineering disciplines, with specialized knowledge in critical facility requirements.
- Our experience allows CMEE to understand clients' needs to optimize and deliver services to meet our clients' specific needs, standards and requirements, by providing the highest level of professionalism and total customer satisfaction.

About Us

- CMEE has extensive experience in consulting, project and construction management and services for critical facilities environments.
- This allows us to extend our expertise and services throughout the region, providing MEP solutions for critical facilities covering the following areas;

Manufacturing Plants & Factories

Data Centers, Call Center, TOC, NOC, NMC

Military

Telecommunication Industries

Hospitals & Medical Centers

Laboratories

Government Buildings & Educational Institutions

Commercial Building & Complex

About Us - Philosophy

The Critical M&E Engineering approach to each project is '**LISTEN, UNDERSTAND, HANDS ON, DELIVER**', where we tailor our efforts to the specific needs of the client.

Vision

To be the leader in the critical facility industry.

Mission

A people oriented organization, team-up and share the common values, to provide unsurpassed solutions and supports, to meet customer needs and expectations, with ZERO compromise to human safety.

About Us – Key Personnel

IR. CHOW CHIN SEANG PEng. MIEM, MASHRAE

Managing Director

Ir, Chow has more than 18 years experience in engineering design, project management and company management. His technical expertise includes detailed mechanical system design and field construction management, as well as all aspects of value engineering, project scheduling and cost containment. He has detailed experience working on Cleanroom construction, Mechanical Plant Room construction, Process Engineering construction, other Industrial and utility projects.

Registration

- Professional Engineer (PE#13513), Board of Engineers, Malaysia (BEM), 2008
- Member (M#25525), The Institution of Engineers, Malaysia (IEM), 2008
- Member (M#8163424), The American Society of Heating, Refrigerating and Air-Conditioning Engineer (ASHRAE), 2010
- Chartered Professional Engineer (CE#13513), ASEAN Board of Engineer, 2016

About Us – Key Personnel

IR. TAN SI LIM PEng. MIEM, ATD

Executive Director

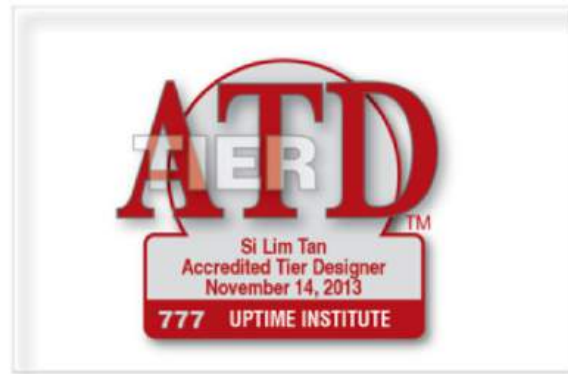
Ir, Tan has 16 years experience in engineering design, project management and company management as an engineer. He has detailed experience working on Mission Critical facilities, including Data Centers, Telecommunications, Military Command Centers, Military Bunkers facilities as well as other Industrial and utility projects.

Registration

- Accredited Tier Designer (ATD#777), Uptime Institute, 2013
- Certified Data Center Professional (CDCP#60011029064548), EPI, 2009
- Professional Engineer (PE#13229), Board of Engineers, Malaysia (BEM), 2007
- Member (M#24322), The Institution of Engineers, Malaysia (IEM), 2007

About Us – Registration

CMEE key personnel are registered to below international recognized institution, namely



Critical M&E Engineering – A TRULY PROFESSIONAL COMPANY

The key personnel registered to below international recognized institution, namely

- **Uptime Institute**

- Accredited Tier Designer (ATD) – 2 personnel



- **EPI**

- Certified Data Center Professional – 3 personnel



- **Board of Engineer, Malaysia (BEM)**

- Professional Engineer (PE) – 3 personnel



- **Asean Chartered Professional Engineer (ACPE)**

- Professional Engineer (PE) – 1 personnel



- **The Engineering Council, UK (EC)**

- Chartered Engineer, CE – 1 personnel

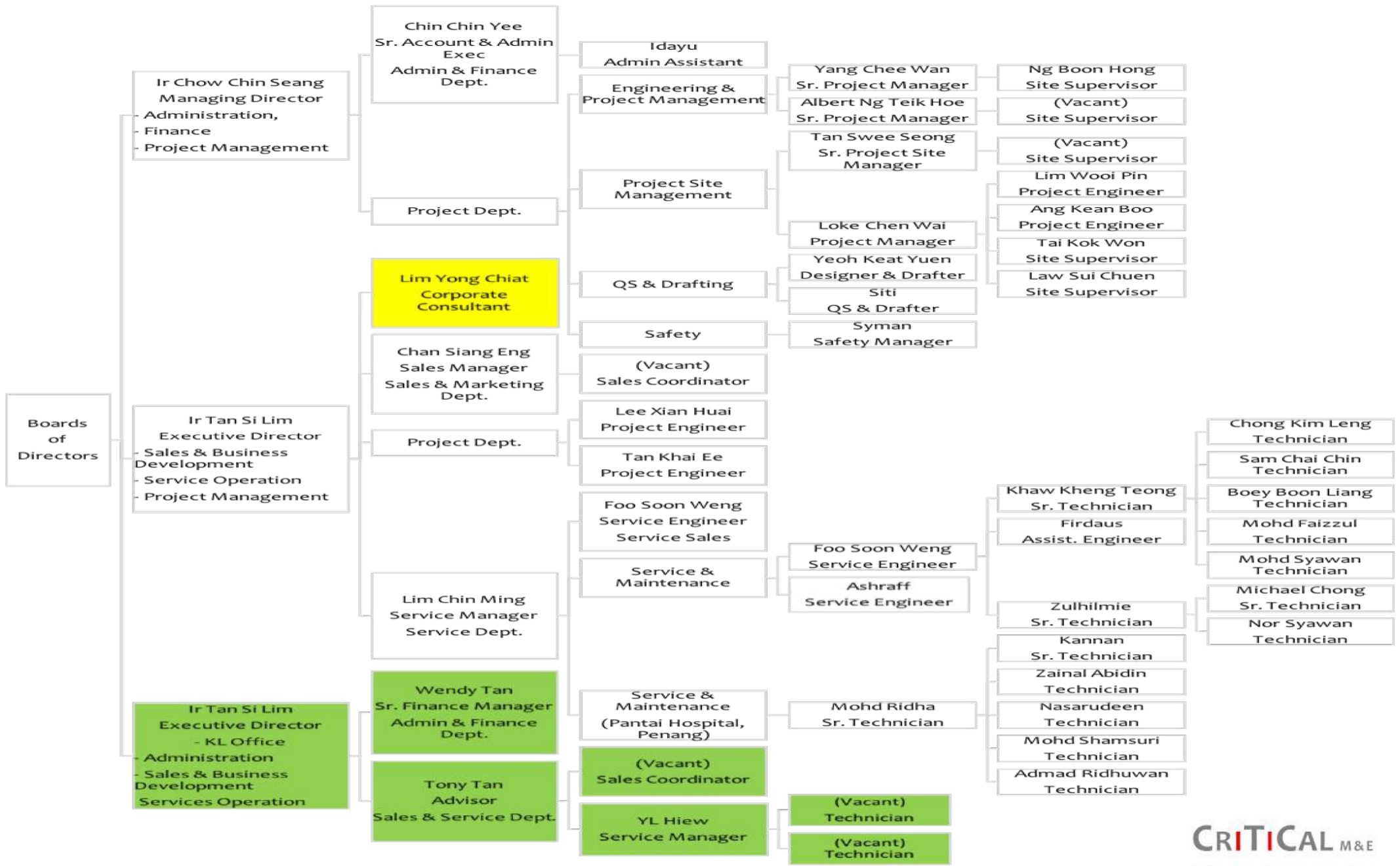


- **The American Society of Heating, Refrigerating and Air-Conditioning Engineer (ASHRAE)**

- Member – 1 personnel



About Us – Organization Chart



About Us – Safety & Health Policy Statement



Safety & Health Policy Statement

Critical M&E Engineering Sdn Bhd is committed to provide a safe and healthy working environment for all the employees and contractors.

Critical M&E Engineering Sdn Bhd understand that, all injuries are preventable and health and safety is the key to the success. Critical M&E Engineering Sdn Bhd is committed to comply with all governmental agencies, regulations, and industry best practices and will use audits to measure and improve safety and health practices.

Critical M&E Engineering Sdn Bhd holds all levels of management accountable to provide a safe work environment and enforcing safe work procedures and practices. Management and supervisors will lead and demonstrate their commitment to health and safety by example, and will ensure that the peer that they are responsible to have the essential knowledge to work safely. Supervisors will put safety and health to the same priority as productivity. They must comply to occupational safety and health requirements.

Critical M&E Engineering Sdn Bhd will hold all employees and contractors responsible for following safe work procedures and reporting unsafe acts and safety incidents.

Workers have general responsibilities for their own health and safety and that of other persons. In addition, they have the responsibility to refuse unsafe work. Discriminatory action will not be taken against them for refusing to do unsafe work.

Employees from every area of the company, regardless of position, will be encouraged to contribute to the company safety and health program. Critical M&E Engineering Sdn Bhd encourages the involvement of all workers in the development of the program. We will provide support and promote the program to ensure that safety has the overriding priority.

Employee cooperation and compliance with the safety and health program at Critical M&E Engineering Sdn Bhd is a requirement of employment.

Services

- Design & Engineering
- Sourcing & Procurement
- Installation, Construction
- Project Management & Integration
- Testing & Commissioning
- Service & Maintenance



Services - Design & Engineering

- Providing End-to-End Solution for System Engineering & Design.
- System Flexibility, Redundancy and Availability study and analysis.
- Comprehensive Critical Facilities Auditing, Analysis & Assessment
- Developing and managing engineering design, specifications and installation for system improvement and upgrade.
- Total system integration for power monitoring system, power quality and consumption analysis.
- System optimization and energy management solutions.
- Evaluating and identifying energy saving opportunities and provide long term results.
- Adopting green facilities design.

Services – Sourcing & Procurement

- Leveraging vast market knowledge and supplier relations, to delivers proven procurement strategies to substantially reduce supply chain costs and lower cost of ownership.

Services – Installation & Construction

- Pre Construction Services
- General Construction Management
- Field Engineering and Space Management
- Value engineering and constructability reviews
- Procurement and Cost Control
- Expediting of materials and equipment, research on local construction market conditions
- Scheduling / Detailed construction schedule incl. contractual milestones
- Commissioning + Start-up
- EH & S
- Clean Protocol
- Document Control
- Reporting System
- QA/QC

Services – Project Management & Integration

- Initiation
 - The initiating processes determine the nature and scope of the project. If this stage is not performed well, it is unlikely that the project will be successful in meeting the business' needs. The key project controls needed here are an understanding of the business environment and making sure that all necessary controls are incorporated into the project.
- Planning
 - The main purpose is to plan time, cost and resources adequately to estimate the work needed and to effectively manage risk during project execution.
- Production or execution
 - The execution/implementation phase ensures that the project management plan's deliverables are executed accordingly. This phase involves proper allocation, coordination and management of human resources and any other resources such as material and budgets. The output of this phase is the project deliverables.
- Monitoring and controlling
 - Monitoring and controlling consists of those processes performed to observe project execution so that potential problems can be identified in a timely manner and corrective action can be taken, when necessary, to control the execution of the project. The key benefit is that project performance is observed and measured regularly to identify variances from the project management plan.
- Closing
 - Closing includes the formal acceptance of the project and the ending thereof

Services – Testing & Commissioning

Testing and commissioning is to be carried out on installations to ensure that they are safe and meet the design requirements.

The witnessing of tests on and off site shall be defined by:

- Design specifications - Mechanical and Electrical
- Requirements of the validation process
- Safety department policy statements
- Tender documentation
- Estate Facilities requirements
- Building Engineering services particularly requirements

Services – Testing & Commissioning

Quality, reliability, responsiveness, transparency.

- The CMEE service contracts has a solution to suit your requirements whether you are managing an expensive portfolio of equipment or just one basic unit. Our transparent service products are focused to be adapted to meet your specific needs.

Complete transparency for clients.

- When you invest in assets, you need to protect the value of your assets whilst ensuring a return on your investment. CMEE can help you.
- As a end user, you need reliable partnerships. CMEE can help you master the challenge of delivering your business on time, on budget and turn-key ready. Our project managers and site supervisors make sure your mobility solution is finished on time and to specification.

Expert partnership

- To manage a critical business load, you have to make sure it generates the return required and meets the expectations of the tenants and visitors. The solution installed in the building must be efficient and reliable. Everything needs to run smoothly, all the time.
- CMEE can really be the difference here. We will team up with you to ensure the transit flow in your business never stops by making sure the equipment operates effectively. Our maintenance teams work in the background, without hindering business activities

Our Partners



Our Partners

Uninterruptible Power Supply (UPS)



Precision Air Conditioning (PAC)



Battery Monitoring System



Cold Aisle Containment & Server Racking



Raised Flooring System



Smoke Detection System



Water Detection System



Fire Suppression System



Cooling Solution - Chiller, AHU, FCU, VRF



Authorized Distributor



Authorized Dealer

Our Clients - Approved Vendor List (AVL)

- A local company with international reach



Our Clients

Semi-conductor industry & MNC companies



Facility Management Companies



Our Clients

Telco Industry



Bank & Government



Medical & Healthcare



Key Project References – VAT



Reference#1

VAT, Batu Kawan Industrial Park (BKIP), Penang, Malaysia



Owner	VAT Manufacturing Plant - a precision valve manufacturing plant from Swiss.
Main Con	BYG Projects Sdn Bhd
Year Completion	Apr 2018
Location	Penang
Contract Amount	RM7,000,000.00
Type of Project	Base Build
Scope	New factory expansion involving 170,000ft2 area ACMV set up, including of 55,000ft2 cleanroom (ISO6 & ISO8) c/w 15ft Height, walkable ceiling, 2 nos Oil Free Air Compressor, Helium Exhaust, smoke spill system, Dry Cooling Coil, 3 nos chiller, and other associated services



Reference#1

VAT, Batu Kawan Industrial Park (BKIP), Penang, Malaysia



Walkable Ceiling c/w FFU Installation



Chilled Water Piping On Site



FFU installation Using Scissor Lift



FFU Wiring Installation

Reference#1

VAT, Batu Kawan Industrial Park (BKIP), Penang, Malaysia



Ducting Installation



Dry Cooling Coil Installation #1



Dry Cooling Coil Installation #2

Reference#1

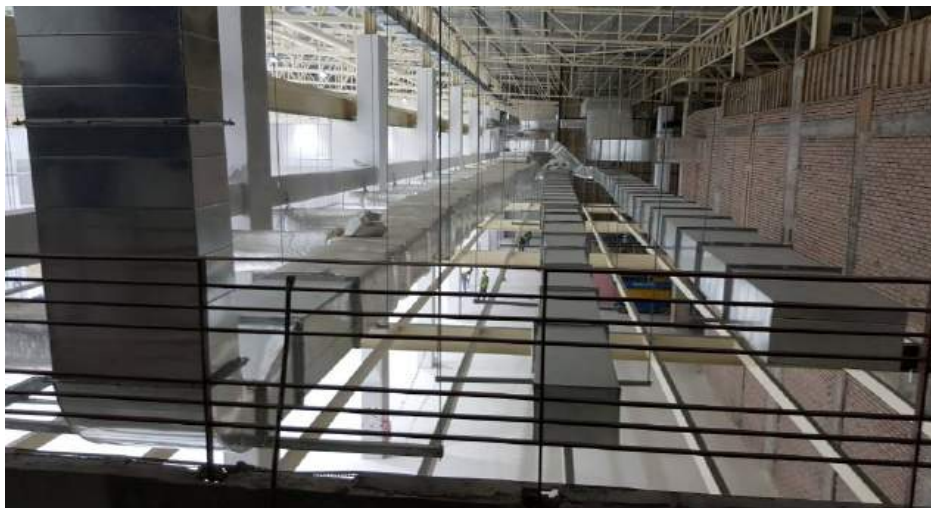
VAT, Batu Kawan Industrial Park (BKIP), Penang, Malaysia



Chiller & Chilled Water Pipe Rack Installation



Chiller Final Positioning



Air Cond Ducting Installation



Exhaust Ducting Installation

Reference#1

VAT, Batu Kawan Industrial Park (BKIP), Penang, Malaysia



AHU Delivery



Plant Room MCC, Chilled Water Piping Installation



AHU piping & ducting installation



Chilled Water Pump Installation

Reference#1

VAT, Batu Kawan Industrial Park (BKIP), Penang, Malaysia



AHU/ FCU Water Balancing #1



AHU/ FCU Water Balancing #2



AHU/ FCU Water Balancing #3

Reference#1

VAT, Batu Kawan Industrial Park (BKIP), Penang, Malaysia



Cleaning #1



Cleaning #2



Cleaning #3



Cleaning #4

Reference#1

VAT, Batu Kawan Industrial Park (BKIP), Penang, Malaysia



T&C #1



T&C #2



Hand Over & Site Walk

Reference#1

VAT, Batu Kawan Industrial Park (BKIP), Penang, Malaysia



Cleanroom #1



Cleanroom #2



Production #1



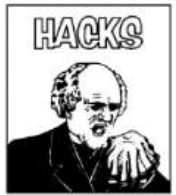
Production #2

Key Project References – HACKS



Reference#2

Hacks, Juru Science Park, Penang, Malaysia

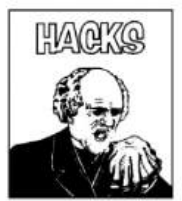


Owner	Hacks
Main Con	Estagold Sdn Bhd
Year Completion	Oct 2017
Location	Penang
Contract Amount	RM5,800,000.00
Type of Project	Base Build
Scope	New factory involving ACMV set up, production having 20degC 35%RH environment
Compliance	GMP certified



Reference#2

Hacks, Juru Science Park, Penang, Malaysia



Smoke Spill Fan Installation



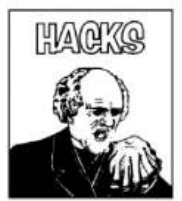
Air Compressor & AHU Hoisting



AHU, MCC & Ducting Installation

Reference#2

Hacks, Juru Science Park, Penang, Malaysia



Steam Piping c/w Pipe Rack Installation



Chiller Final Positioning & Installation



VRV System Final Positioning & Installation



AHU & Desiccant Dehumidifier Installation

Key Project References – QDOS FLEXICIRCUITS



Reference#3

QDOS, Batu Kawan Industrial Park (BKIP), Penang, Malaysia



Owner	Qdos Flexcircuits SdnBhd
Main Con	Kok Construction
Year Completion	Mar 2018
Location	Penang
Contract Amount	RM7,000,000.00
Type of Project	Base Build
Scope	New ACMV, CDA, Cleanroom, Scrubber System, and other associated mechanical services for the new factory set up



Reference#3

QDOS, Batu Kawan Industrial Park (BKIP), Penang, Malaysia



Silo Delivery



Silo Hoisting



Scrubber Final Positioning



Silo Final Positioning

Reference#3

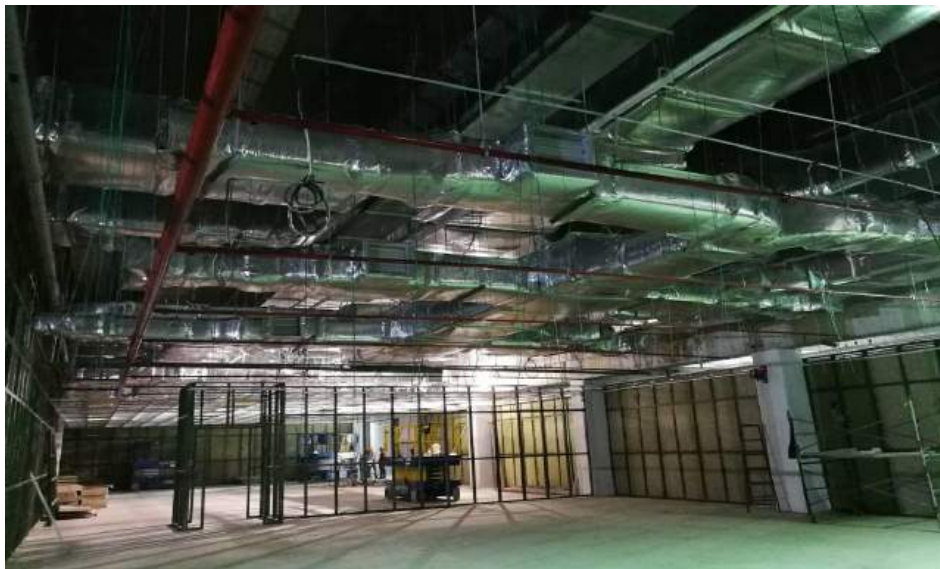
QDOS, Batu Kawan Industrial Park (BKIP), Penang, Malaysia



Ducting Installation #1



Ducting Installation #2



Ducting Installation #3



Ducting Installation #4

Reference#3

QDOS, Batu Kawan Industrial Park (BKIP), Penang, Malaysia



Ducting Installation #5



Ducting Installation #6



Ducting Installation #7



Ducting Installation #8

Reference#3

QDOS, Batu Kawan Industrial Park (BKIP), Penang, Malaysia



Chiller Unloading



Chiller Final Positioning



Chiller Moving In



Chiller Final Electrical Connection

Reference#3

QDOS, Batu Kawan Industrial Park (BKIP), Penang, Malaysia



Machine Hook Up #1



Machine Hook Up #2



Machine Hook Up #3

Reference#3

QDOS, Batu Kawan Industrial Park (BKIP), Penang, Malaysia



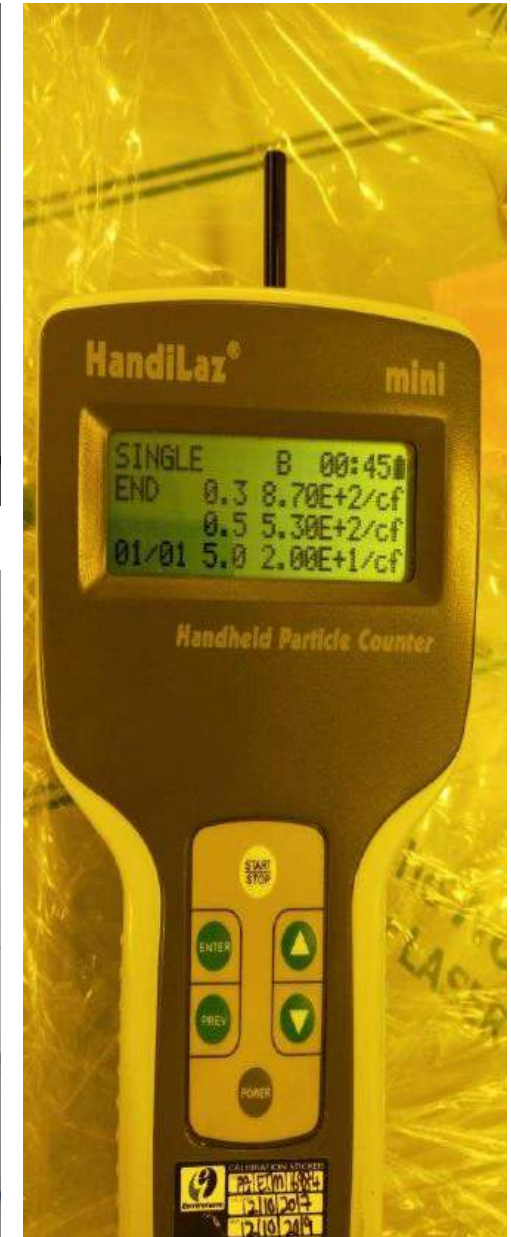
Pressure Testing



Cleaning



Handling Over



Particle Counting

Key Project References



	 	<p>Owner Year Completion Location Contract Amount Type of Project Scope</p> <p>Compliance</p>	<p>First Solar Apr 2016 Kulim Hi-Tech Park, Kedah RM1,035,000.00 Retrofit Project Involving New Acid Scrubber System Installation FM Global Approved</p>
	 	<p>Owner Year Completion Location Contract Amount Type of Project Scope</p>	<p>TS Solartech Jun 2016 Penang Science Park RM3,300,000.00 New Installation Project involving supply, install, testing & commissioning UPS/FC system, having capacity up to 5.5MW (3x800kVA, 1x600kVA, 2x500kVA, 1x250kVA, 3x200kVA, 6x20kVA, 4x10kVA)</p>
		<p>Owner Year Completion Location Contract Amount Type of Project Scope</p> <p>Compliance</p>	<p>First Solar Dec 2016 Kulim Hi-Tech Park, Kedah RM1,700,000.00 Retrofit Project Involving KLM 1&2 T&R New ACMV Installation FM Global Approved</p>



Owner
 Year Completion
 Location
 Contract Amount
 Type of Project
 Scope
 Compliance

Entegris
 Nov 2015
 Kulim Hi-Tech Park, Kedah
 RM950,000.00
 Retrofit
 Project involving ACMV Upgrading, 3 nos air cooled chiller, associated mechanical work
 FM Global Approved













Owner
 Main Con
 Year Completion
 Location
 Contract Amount
 Type of Project
 Scope

Classified (Top Tier Semicon Player)
 Johnson Control
 Dec 2015
 Penang
 RM180,000.00
 Retrofit
 Project involving chiller plant room upgrading, 1 nos 800RT water cooled chiller replacement



Owner
 Year Completion
 Location
 Contract Amount
 Type of Project
 Scope
 Compliance

Latexx (Semperit)
 Dec 2015
 Taiping, Perak
 RM4,700,000.00
 Base Build
 Project involving Process Utility pipe work, Boiler pipe work, Natural Gas pipe work, & mechanical Ventilation system
 FM Global Approved

 	<p>Owner Main Con Year Completion Location Contract Amount Type of Project Scope</p>	<p>VAT BYG Projects Sdn Bhd Mar 2016 Penang RM380,000.00 Retrofit Project involving new ISO6 & ISO8 cleanroom set up</p>
  	<p>Owner Year Completion Location Contract Amount Type of Project Scope</p>	<p>Osram Jan 2017 Penang RM950,000.00 Retrofit New Oil Free Compressed Air System in Wafer Plant</p>
 	<p>Owner Year Completion Location Contract Amount Type of Project Scope</p>	<p>Osram Aug 2017 Penang RM800,000.00 Retrofit New PEN5 ISO8 Cleanroom set up</p>
  	<p>Owner Year Completion Location Contract Amount Type of Project Scope</p>	<p>CPI Oct 2017 Penang RM1,800,000.00 Retrofit New ISO8 cleanroom set up, having total area of 32,000ft2. PU ducting instead of GI ducting deployed, to achieve to a better workmanship</p>

	 	<p>Owner Main Con Year Completion Location Contract Amount Type of Project Scope</p>	<p>TF-AMD Tialoc Sdn Bhd Oct 2017 Penang RM4,000,000.00 Base Build New factory set up involving total CHW, CW, CDA, Process Piping Work</p>
	 	<p>Owner Year Completion Main Con Location Contract Amount Type of Project Scope Compliance</p>	<p>Schlumberger Jun 2015 Tialoc Malaysia Sdn Bhd Port Klang Free Zone (PKFZ), Klang, Selangor RM3,700,000.00 Base Build Project involving supply, install, testing & commissioning ACMV, CDA, Desiccant Wheel System, Smoke Spill System, Process Utility & BMS LEED Certified by U.S Green Building Council FM Global Approved</p>



Owner
Main Con
Year Completion
Location
Contract Amount
Type of Project
Scope

Compliance

Owner
Year Completion
Location
Contract Amount
Type of Project
Scope
Compliance

Rembina Sdn Bhd
South Island Sdn Bhd
Jan 2016
Penang
RM1,750,000.00
Base Build
Project involving ACMV, CDA ISO8
Cleanroom, Smoke Spill System, BMS
system

GMP Certified

Sun Phama
Mar 2017
Sg Petani, Kedah
RM320,000.00
Retrofit
Water cooled chiller replacement
GMP certified



Owner
 Year Completion
 Location
 Contract Amount
 Type of Project
 Scope
 Compliance

Pantai Hospital
 Sep 2015
 Sg Petani, Kedah
 RM720,000.00
 Retrofit
 Project involving 2 nos 300RT water cooled chiller replacement @ level 3
 Sustainable Energy Development Authority Malaysia (SEDA)



Owner
 Year Completion
 Location
 Contract Amount
 Type of Project
 Scope

Pantai Hospital
 Oct 2017
 Penang
 RM1,800,000.00
 Retrofit
 Project involving chiller plant room upgrading, 3 nos 300RT water cooled chiller, 2 nos 500Rt cooling tower, 2000Amp MCC panel, and associated work @ Level 6 roof top

Thank You

