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## COMPANY PROFILE

## 1. BACKGROUND

Dr. Toh Associates Sdn. Bhd. is an continuation of Dr. C.T. Toh Consultant which was set up in January 1989 to undertake consultancy works in geotechnical engineering. The firm is based in Kuala Lumpur and has a small staff of 3 professional geotechnical engineers and 1 engineering geologist. The staff of Dr. Toh Associates Sdn. Bhd. are all from Dr. C.T. Toh Consultant.

The areas of consultancy include:

- Shallow and deep foundations for high rise buildings and bridge structures;
- Deep excavations for basements and other below ground structures using embedded retaining structures;
- Engineering of soft clays and peat for infrastructures and buildings;
- Reclamation of disused tin mining land
- Soil and rock slope assessment and engineering;
- Landfills for schedule waste and municipal waste;
- Expert witness in arbitration and litigation.

So far most of the works undertaken are within Peninsular and West Malaysia. However a few projects have been undertaken in Bangladesh, Myanmar and Sri Lanka.

Our clients include general civil and structure engineering consultants, contractors, design – build contractors and developers.

Our principle in consulting is provide advice and designs from use of comprehensive methods of analysis that minimizes the assumptions and couple that with practical experience from construction and knowledge of the performance of structures during and after construction.



## 2. KEY PERSONNEL

- Dr. Toh Cheng Teik (principal, age 65) is a civil engineer a PhD from Monash University Australia for work in soil models and finite elements applied to soft clays. He has 37 years experience in geotechnical engineering including 5 years as a university lecturer and has written about 40 papers in regional and international conferences and journals. He was amongst the first batch of <u>accredited checkers</u> appointed by the Board of Engineer Malaysia. His qualifications and affiliations are: B Eng (Hons), PH D, MIEM, MICE, MASCE, C.Eng, P.Eng. He was deputy chairman of the CIDB committee drafting guidelines on road construction on peat.
- Ir. Chee Sai Kim (principal, age 60) graduated with honours in civil engineering from the University of Florida, United States and worked in general civil engineering for about 4 years and geotechnical engineering for 30 years. Her qualifications are: BSCE, MIEM, P.Eng. She is an expert on deep excavations and construction on peat and soft ground. She is a member of the CIDB committee drafting guidelines for road construction on peat.
- En.Rusli Abdullah (geologist, age 54) has a Masters in engineering geology from the University of Malaya and has worked as an academic and government. His experience includes soil investigations, materials investigation, environmental engineering, slope assessment and slope engineering, bored piles and basement excavations in different geological formations over the last 25 years. His qualifications are: BSc, MSc.
- Ir. Ong Yin Hoe (geotechnical engineer) has a Masters in geotechnical engineering from AIT and has worked as a geotechnical engineer for about 10 years including as resident engineer for foundation works including anchored contiguous bored pile wall, diaphragm walls, bored piles and jack – in piles. He has been involved in the design of highways on soft ground. He has vast experience in three dimensional finite element analysis of tunnels, basement excavations and piles in limestone. His qualifications are: BE, MSc.
- En. Mahat has (53) gas a BSc in geology from the University of Malaya. He has been involved in the materials testing and pile construction in major highways, geological mapping of slopes and pile foundations for a major elevated highway in KL.
- Ir. Lum Peng Fatt (external structural engineer) aged 60 is our structural adviser. He is a graduate in civil engineering from University Malaya and has vast experience in analysis, design and construction of buildings up to 34 storeys. Hs qualifications are BCE, MIEM and P.Eng.



## 3. LIST OF SOME MAJOR PROJECTS IN MALAYSIA

## 3.1 HIGHWAYS AND ROADS

North – South Highway. Machap to Kota Tinggi Design Optimization and construction	This highway traverses through about 20 km of peat ground. Excavation with dewatering of the peat and replacement with compacted residual soil fill.
with Pakatan Runding Yusof for PLUS	Other geotechnical components of the works include pile embankments and surcharge.
Malaysian Singapore Second Crossing Expressway	The main geotechnical problem is associated with the forming of high embankments using very wet GABBRO residual soils.
With Pakatan Runding Yusof North – South Highway. Simpang Pulai to Ipoh	Designing for the contractor alternative methods for reclaiming disused mining ponds and disused tin mining land.
For IREKA Engineering and Construction	
Ring Road, PetraJaya, Kuching	The main geotechnical works include the use of geotextile bamboo fascine mattress to enable fill over peat and surcharging the peat
with Konsultant SHC	
Boulevard, Petrajaya, Kuching	The project involved excavation and replacement of peat, prefabricated vertical drains through the soft clay beneath the peat and surcharge.
With MINSAR	Design and construction for soil tractment through
KESAS Highway from Sungei Besi Inerchange to Kinrara Interchange	Design and construction for soil treatment through disused tin mining land and tin mining ponds
With Hashim and NEH	
Kuching – Kota Samarahan Expressway, Sarawak	Surcharge embankments on soft clay
With Konsultant SHC	
Tubau to Bakun Access Road with KTAS for JKR	100 km road through the jungles of Sarawak involving stability of high cut slopes in sedimentary formations.
North Kelang Valley By Pass Expressway	Design review of the geotechnical treatment of soft clay using surcharge and prefabricated vertical drains.
For ShahPadu	



Access Road to Pelabuhan	Design of surcharge with prefabricated vertical drains
Tanjung Pelepas Johore	
With Pakatan Runding	
Yussoff	
Miri Bypass road	Fill over peat and surcharge peat and underlying soft
	clay.
With MINSARfor SAMLING	
Matang Highway, Kuching	Hydraulic filling over peat and surcharge peat and soft
Sarawak	clay.
With Perunfing TKY for	
ZECON	
Jelutong Expressway.	Surcharge domestic waste.
Penang	Preload soft clay with vertical drains.
Ŭ	Stone columns.
For IJM / Jurutama	Pile embankments
Package 4, 4A and 4B of JKR	Design and construct project. Mountain road.
highway from Simpang Pulai	
– Lojing – Gua Musang	Includes slope stabilization with soil nails, high retaining
	structures, high cut slopes and bridge foundations.
For TRC	
Road from Oya – Mukah-	Design and construct project.
Balingian. Matadeng to	
Balingian	Road over deep deposits of peat and soft clay. Filling
g	and surcharge of peat and soft clay
with MINSAR	
Samarahan Expressway	Treatment of embankments on soft clay by surcharging
Witjh MINSAR	
Tubau – Bintulu Road	Design and construct project .
With Konsultant SHC	Includes the use of light weight EPS to form high
	embankments on soft clay.
Widening of road from Sibu to	Construction of high embankments on soft ground
Julau	
With Konsortium Malaysia	
Sibu – Bawang Assam –	Treatment of road on peat and soft clay by surcharging.
Seredeng – Mukah Road.	station of the state of poor and core only by caronarying.
Package I	
with MINSAR	



Sibu – Bawang Assam – Seredeng – Mukah Road.	Treatment of road on peat and soft clay by surcharging.
Package I	
with Jurutera ARTECON	
DUKE HIGHWAY. Package 3	Stone columns and vertical drains for disused tin mining land.
With Maunsell International	Soil nails for cut slopes
	Bored piles, driven piles and hand-dug caissons.
DUKE HIGHWAY. Karak Link	Stone columns, vertical drains for disused tin mining land.
With HSSI	Bored piles and driven piles.
EAST COAST HIGHWAY	Stage construction of high embankments in form clays
With HSSI	
EXPERIMENTAL FLOATING	Use of light weight EPS to form a floating road over 30
ROAD	m peat in Sibu.
For Sibu Municipal Council	
WIDENING OF THE NORTH	Surcharge, vertical drains and stone columns as
SOUTH EXPRESSWAY	treatment of disused tin mining land
BETWEEN IPOH SOUTH AND JELAPANG	
With HSSI	
SOUTH KELANG VALLEY	Surcharge, vertical drains, stone columns, geotextile
EXPRESSWAY for Muhibbah	reinforcements, stone columns, etc
With Perunding ZKR and	
ISOTECH	
DUKE 2 ELEVATED	Bored piles, jack-in piles, driven piles, stone columns,
HIGHWAY	EPS lightweight fill, retaining structures
With MMSB	
NANGA MERIT, SARAWAK	Mountain road. Slope stabilization with soil nails and rock bolts
With Konsortium Malaysia	



## 3.2 RAILWAYS

ESSO REFINERY RAIL	Treatment of high embankment on soft clay with
TERMINUS, PORT DICKSON	surcharge and vertical drains
With KI. Concult	
With KL Consult KL – KELANG DOUBLE	Widening of existing track from KL to Port Kelang.
TRACK	
With KL – Consult	Includes use of timber mattress as track subgrade treatment, dynamic compaction of loose tin tailings and surcharge over soft clay
RAIL LINK FROM WEST PORT TO PULAU INDAH	Design and construct project.
For TRC – Ho Hup	Pile embankments, surcharge with and without prefabricated vertical drains
RAIL LINK FROM GURUN TO PETRONAS ABF PLANT	Stone columns and excavation and replacement of soft clay
LRT FROM DAMAI STATION TO GOMBAK STATION	At grade section, cut and cover section and piers on piles in Hawthorden Schist. Use of bored piles enveloped with jet-grout for deep seated limestone
WITH Hussein and kh Chong	areas
LRT KELANA JAYA TERMINUS	Ground treatment and stabilization for track subgrade
With Pakatan Runding Yussof	
DESIGN CHECK FOR THE DOUBLE TRACK from Tanjung Malim to Ipoh	Use of dynamic finite element analysis to simulate the loads due to high speed trains
For DRB	
CHORD LINE JOINING KL SALAK SOUTH SECTION TO KL-KELANG LINE	Track subgrade treatment using timber mattress
For IRCON	
KLTO JOHORE BARU DOUBLE TRACK STUDIES	Identification of soil treatment
With KL consult	



RAIL LINK TO TANJUNG PELELPAS	Design check and project management
With KL Consult	
TRACK REHABILITATION WORKS FOR SABAH RAIL	Track works in soft ground
WITH KL Consult	
DETAIL DESIGN AND	Soil treatment works to prevent settlement due to
CONSTRUCTION OF THE	vibrations from high speed trains.
DOUBLE TRACK FRO	Slope stability
SEREMBAN TO GEMAS	Retaining walls
	Soil nails
With KL CONSULT	Contiguous bored pile walls

## 3.3 COASTAL, RIVER STRUCTURES AND WATER STRUCTURES

BAKO CAUSEWAY, Sarawak	Dredging of soft clay with rock fill for river closure
River Regulation Scheme	
With KTAS	
SUNGEI SARAWAK	Rock fill river closure
CAUSEWAY	
en de en na	
With KTAS	
KUCHING BARRAGE,	Deep excavation in soft clay with aquifer pumping,
Sarawak River Regulation	driven and drilled piles, retaining structures
•	unven and unlied plies, retaining structures
Scheme	
With KTAS	
STABILIZATION OF OUTER	Use of stone columns under water
BREAKWATER TO	
ACCOMMODATE NEARBY	
DREDGING	
DIEDGING	
With Konsultant SHC	
SARIKEIU WHARF SHEET	Analysis of sheet piles
PILE WALL	Analysis of sheet piles
With KTAS	
LPG JETTY, BINTULU PORT	Pile foundations
With Konsultant SHC	



BINTULU PORT WHARF	Tied back sheet piles , pile foundations and foundations
EXTENSION	for container stacking
WITH Konsultant SHC	
BESUT RIVER BARRAGE	Dedging soft clay and replacement with sand with vibro-
	compaction
With Ranhill	compaction
	Design shasks on husely ustage dradains, and revetes out
BINTULU INNER HARBOUR	Design checks on breakwaters, dredging and revetment
	design
With Perunding WAHBA	
TRENGGANU RIVER	Dredging of soft clay and sand key installation.
BREAKWATERS AND	
REVETMENT	Material selection
With WAHBA	
TANJUNG MANIS	Tied back sheet piles, dredging and pile foundations
CONTAINER PORT	The back sheet piles, areaging and pile roundations
CONTAINER FORT	
With KTAS	
SIBU CONTAINER PORT	Tied back sheet piles
EXTENSION	
With KTAS	
WIDENING OF THE JOHOR	Rock fill embankment on stone columns installed in the
BARU – SINGAPORE	sea
CAUSEWAY S ABUTMENT	
FOR PROPOSED BRIDGE	
With Hussein Kh Chong	
RIVER BANK	Rock revetment and sand fill
STABILIZATION AT KG	
MELAYU, TELUK INTAN	
WITH RANHILL	
REVETMENT AT JELUTONG	Rock revetment on soft clay
WATER FRONT, PENANG	
IJMP	
COASTAL RECLAMATION	Hydraulic sand filling over soft clay
AT JELUTONG, PENANG	
IJMP/ JURUTAMA	
	On abore and off abore structures
SEPANGAR BAY	On shore and off shore structures
SUBMARINE NAVAL BASE	
with TRC	



RECLAMATION AT DANGA BAY for PARCELS A2, F1, F2, E1, JOHOR	Hydraulic sand fill into the sea and stabilization using stone columns
ISKANDER WATER FRONT / DANGA BAY	
SAMALAJU PORT with KTAS and TRC	Analysis and Design of the wharf structure
MUARA TEBAS CUSTOMS JETTY with Jurutera Perunding Wahba	Jetty structure and foundation piles
RIVER DIVERSION AND TUNNEL THRU LIMESTONE HILL IN PERLIS	Channel design, retaining structures, bridge foundations and tunnel through limestone
With PRY	

# 3.4 BASEMENT AND DEEP EXCAVATIONS WITH EMBEDDED RETAINING STRUCTURES

Rectification to drawdown at Prangin Mall, Penang	Analysis and design
For Penas Corporation	
Aetna Training Centre in Sri	Finite Element Analysis Caisson Foundation and
Damansara	Diaphragm Walls.
for M/s Geopancar Sdn Bhd	
Parcels 1, 4 buildings at	Design of strutted diaphragm walls
Jalan Tun Razak/Jalan Putra	
with M/s Ireka Engineering &	
Construction Sdn Bhd	
for M/s Swasta Holdings	
Anchored diaphragm walls for	Design of anchored diaphragm wall and strutted
Enterprise 4 Taman Teknologi	diaphragm wall
for M/s Ireka Engineering &	
Construction Sdn Bhd.	
Top-down diaphragm wall-	Finite element analysis
basement construction for	



Soka Gakkai Building, Jalan Bukit Bintang	
with M/s Geopancar Sdn Bhd	
Anchored diaphragm wall with soil nails, Ministry of Finance (MOF, Lot 2G2) Building, Putrajaya	Design of the diaphragm wall and bracing system
with M/s Syed Mansur & Associates for M/s Putra Perdana Construction Berhad.	
Top-down diaphragm wall construction for Goldhill Development, KL	Finite element analysis
for M/s Geopancar Sdn Bhd. 24 m diameter circular cantilever diaphragm walls for sewage treatment plant at Pulau Indah	Finite Element analysis
with M/s Geopancar Sdn Bhd Anchored diaphragm wall for Buildings on Lot 2G3 and 2G4, Putrajaya	Finite Element Analysis
with M/s Geopancar Sdn Bhd Diaphragm wall analysis for LRT Station at Jalan Sultan Ismail	Finite element analysis
for M/s GTM-Usaha Sdn Bhd. Anchored soldier pile wall for cut and cover tunnel at Putra Jaya	Analysis and design
for Hasrat Usaha. Strutted diaphragm wall in soft clay for the Bayan Baru Sewage Treatment Plant for M/s Ho Hup Construction	Analysis and design



with M/s Geopancar Sdn Bhd.	
Diaphragm wall with top – down construction for Eng	Finite element analysis
Lian at Bangsar	
with M/s Geopancar Sdn Bhd.	
Anchored and cantilever diaphragm wall for KLCC Hospital for	Finite element analysis
with M/s Geopancar SdnBhd.	
Cantilever contiguous bored piles for basement excavation for Lot N, Sentral	Analysis and design
with M/s Syed Mansur and Associates	
32 m diameter cantilever circular diaphragm wall in soft clay for deep sewage pumping station at Meru, North Kelang	Finite element analysis
with M/s Geopancar Sdn Bhd	
Cantilever contiguous bored pile with RE wall on top for the Express Rail Link	Finite element analysis
With M/s Econpile Sdn. Bhd.	
Cantilever contiguous bored pile wall at Parcel E4 and E5, Putra jaya	Finite element analysis
with M/s Econpile Sdn Bhd	
Cantilever contiguous bored pile for Smart School, Putra Jaya	Finite element analysis
with M/s Econpile Sdn. Bhd.	



Contiguous bored pile wall for extension of basement for Assunta Hospital	Finite element analysis
with M/s Econpile Sdn, Bhd	
Review of anchored diaphragm wall design for	Finite element analysis
KLCC convention centre by	
Bauer (M) Sdn Bhd	
for M/s SSP Geotechnics Sdn Bhd	
Anchored diaphragm wall and strutted sheet pile and soldier	Analysis and design
piles for Holiday Inn on the Park	
with M/s Syed Mansur Associates	
Investigation into the cause of failure of the anchored	Finite element analysis and review of all performance data
contiguous bored pile wall at IOI, Puchong for M/s Azman	
Davidson	
Strutted soldier pile and sheet	Analysis and design
pile wall for the excavation of the sewage treatment plant at	
Puchong	
for M/s Jurutama Sdn Bhd Box sheet piles installed in	Finite element Analysis
water for dewatering	
downstream and removal of the LK2 temporary dam at	
Putra Jaya	
With Loh and Loh Construction Sdn Bhd	
Sheet pile coffer dam for	Finite element analysis
Maran Bridge pier and pile cap construction	
for Ikhmas Jaya Sdn. Bhd	



Strutted sheet pile with toe	Analysis and design
pins for the sewage treatment	
plant in soft clay, Putra Jaya	
for Ikhmas Jaya Sdn. Bhd.	
Diapragm wall with top –	Finite element analysis
down construction at	
Persiaran KLCC	
condominium, Selangor	
Dredging	
with M/s Geopancar Sdn Bhd.	
Cantilever diaphragm wall at	Finite element analysis
Jalan Madge with	
-	
M/s Geopancar Sdn Bhd.	
Cantilever diaphragm wall at	Finite element analysis
Persiaran Hampshire for	
Beneton Properties	
Beneton i ropenies	
with M/s Geopancar Sdn Bhd.	
	Analysis and design
Anchored diaphragm wall	Analysis and design
and top-down diaphragm wall	
construction for the Mid valley	
Phase 2. The Gardens	
for M/s Geopancar– Bauer	
JV.	
Diaphragm wall with top –	Finite element analysis and geological mapping of the
down construction and with	rock
wall on rock above lowest	
excavation at Parkwealth,	
Jalan Tun Razak.	
Anchored and cantilever	Finite element analysis
diaphragm wall at Parcel 2C2,	
Putrajaya	
for M/s Econpile – Geopancar	
Sdn Bhd.	
Cantilever contiguous bored	Analysis and design
pile and anchored sheet pile	
at Izen – K1 for M/s Ireka	
Construction Sdn Bhd.	



Cantilever, strutted and anchored contiguous bored pile wall and secant pile wall for deep excavation at limestone – Kenny Hill contact zone. Commerce Asset Holding Berhad	Analysis and design
with IJM Construction Sdn Bhd.	
3 basement excavation using anchored sheet piles , Phase 12 BTC and 12CTC at Taman Melawati	Analysis and design
With A Sani and Associates	
Basement Excavation for Penang High Court and Annexe using strutted jack – in sheet piles (also seepage cut-off)	Analysis and design
With A Sani and Associates	
Anchored and top down diaphragm wall for the KL Pavilion Basement at Jalan Raja Chulan and Jalan Bukit Bintang for KL Pavilion	Analysis and design
with TY Lin International	
Top down and anchored diaphragm wall for the Troika Project, Jalan Binjai with M/s Econpile – Geopancar	Finite element analysis
Anchored and cantilever contiguous bored pile wall at Persiaran Hampshire for M/s Zelan Construction with Hussein and kh Chong	Analysis and design
Anchored sheet pile, and cantilever contiguous bored pile wall for the PJ8 project	Analysis and design



for IJM Properties.	
Cantilever contiguous bored pile walls, anchored diaphragm wall with soil nails	Analysis and design
at One Jalan Menerung for BandarRaya Development	
with T Y Lin	
Top – down excavation with diaphragm wall for UAC building at Mutiara	Finite element analysis
Damansara	
with Geopancar Sdn Bhd	
Top – down diaphragm wall construction ,Water Front project, Jalan Pinang	Finite element analysis
with Geopancar Sdn Bhd	
Cantilever contiguous bored pile wall for Tiffany condominiums for Ireka Land Berhad	Analysis and design
With TY Lin	
Strutted diaphragm wall with buttresses for the basement excavation for the OVAL, Jalan Kudalari, KL for M/s	Finite element analysis
With Geopancar Sdn Bhd.	
Strutted contiguous bored pile wall, cantilever contiguous bored pile wall and anchored	Analysis and design
diaphragm wall for the Bangsar Business Centre	
with M/s Econpile and Geopancar Sdn Bhd.	
Strutted excavation for the cut and cover underpass construction at Sunway shopping centre	Finite element analysis



With M/s Geopancar sdn Bhd	
Anchored and cantilever	Analysis and design
contiguous bored pile wall at	
Hampshire Residences for	
Tan and Tan Development	
With Hussein and kh Chong	
Up – down construction with	Analysis and design and overseeing construction
diaphragm wall for One	, , , , , , , , , , , , , , , , , , , ,
MontKiara for Ireka Land	
Berhad	
Domad	
with IECSB and Geopancar	
Sdn Bhd	
	Analysis and design
Cantilever contiguous bored	Analysis and design
pile wall at Monte Bayu, Jalan	
Kuari, Cheras for IJMP	
with Perunding HNC.	
Strutted excavation with	Analysis, design and overseeing construction
diaphragm walls for GLOMAC	
Al Batha for Glomac	
With T Y Lin	
Anchored and contiguous	Analysis, design and overseeing construction
bored pile walls at Setia walk	
for S P Setia	
With K L Consult	
Top down construction at 12	Analysis, design and overseeing construction
Kia Peng for Cathay	, ,
Organization	
With T Y LIN	
Top down construction at Kor	Analysis, design and overseeing construction
	הומוזטוס, עבטונוו מוע טיבושבלוווע נטוושנוענוטוו
Joo Saik development, Jalan	
Binjai	
With GEOPANCAR	
Basement reconstruction with	Analysis, design and overseeing construction
cantilever diaphragm walls at	
Jalan Ampang for DNP	
With Econpile	



Deep excavation next to Holy Rosary Church Brickfields	Strutted contiguous bored pile with jet grout block to mitigate risk to 100 year old church
For ArchBishop of Kuala	
Lumpur	
Deep excavation for KL	Strutted contiguous bored piles. Soil cement mixing and
Ecocity	bored piles
With IHKMAS JAYA	
Condominium development at	Contiguous bored pile walls with soil nails and bored
Medang Seria, Bukit	piles
Bandaraya, KL for Bandaraya	
Development	
With TY Lin	
Condominium development at	Diaphragm wall with top-down construction and
Jalan Stonor for IGB	foundations piles
with HNC	
Lot W Hotel. Jalan Ampang	Diaphragm wall with top-down construction and
	foundation piles
with T Y Lin	
Deep excavation for extended	Contiguous bored pile wall wall with top- down
Pavilion along jalan Bukit	construction in limestone
Bintang	
with Econpile	
Deep excavation with	Diaphragm wall with top – down construction and bored
diaphragm walls and top-	pile foundations
down construction and bored	
pile foundations for TA3 and	
TA4, Jalan P. Ramlee	
with TY Lin	
Ecocheras development at	Soil nails, ground anchors, contiguous bored piles, pile
Jalan Cheras for Ekovest	and raft foundations, rock fiddure grouting and drain
Berhad	basement
With HNC	
Tropicana city for Tropicana	Anchored contiguous bored piles top down construction,
Berhad	bored piles and raft
with TY Lin	



Service apartment at Jalan Kia Peng for	Top - down diaphragm wall construction and bored piles
Cathay Organization	
12 Kia Peng Service	Top-down construction with diaphragm walls and
apartment	barretes
for Ireka Land	
Development at Jalan Conlay	Top down construction with contiguous bored pile in limestone
for Econpile	
Menara Kuan Choo, Jalan	Top-down construction with diaphragm wall and raft
Raja Chulan (next to Pavilion	foundation
Tower)	
fer Meller	
for Malton	

## 3.5 BUILDING FOUNDATIONS

CEMENT SILOS FOR TASEK CEMENT AT SG BULOH	Design of bored piles
With KL Consult	
BDA HQ at Kidurng, Bintulu	Shallow foundations
With MINSAR	
AMCORP BUILDING , PETALING JAYA	Shallow and deep foundations in limestone
With AKC Consultants	
PJ DEVELOPMENT BUILDING AT JALAN RAJA CHULAN	Bored piles
With MINSAR	
10 storey apartment blocks, Taman Seri Manja, off Old Kelang Road	Driven piles in limestone
With REKA Perunding	
Westin Hotel, Jalan Bukit Bintang	Hand dug caissons and micropiles in limestone



With HASHIM AND NEH	
28 storey condominium at	Bored piles
Taman Seputeh	bored plies
with Hussein and kh Chong	
Service apartments and	Bored piles
Commercial Development at	
Jalan Binjai for PNB	
With Hashim and NEH	
Menara Maybank at Jaan	Raft foundation
Bangsar / Jalan Maarof	
With Hashim and NEH	
11 storey building on fill at	Raft foundation
Relau, Penang	
For IJMP	
San Yang Tower, SIBU	Large diameter spun piles driven into sand
With E C Sepakat	Define de la desfi
Enterprise 4 – Taman	Raft and piled raft
Teknologi	
With IREKA Construction	
Ministry of Finance Building,	Footings and bored piles
PutraJaya	r ootings and bored piles
Putra jaya Convention Centre	Footings and bored piles
With IJMC	
Putra Jaya 4G3 and 4G4	Raft, driven piles and bored piles
With IREKA Construction	
Putra jaya Mosque, Dataran	Driven piles and bored piles
Putrajaya and Brdige	
With Hussein and kh Chong	
Sarawak State Library	Bored piles
With KTAS	
Putra jaya 4G1 and 4G2 for	Bored piles
Putra Perdana	
With Sund Marsur and	
With Syed Mansur and	



associates	
Palace of Justice, Putra Jaya	Footings and bored piles
With KJM	
Yayasan Tun Razak at jalan	Footings and micropiles
Bukit Bintang	
With KTAS	
Dewan Undangan Negeri,	Bored piles
Kuching, Sarawak	
With KTAS	
36 Storey condominiums,	Bored Piles
Sentral, Jalan Travers	
With Pintaras Geotechnics	
Lot N,Sentral	Raft foundation
With Syed Mansur associates	
PJ 8 with 30 storey service	Bored piles
apartment and 10 storey	
office blocks	
For IJMP	
Apartment blocks at Ampang	Bored piles
For Suditasia	
With Perunding TYL	
Hotel development, Kuching	Bored piles
With MINSAR	Dered elles
Office Block at No. 24, Jalan	Bored piles
Tun Perak for WTW Bovis	
With TV Lin	
With TY Lin	Driven niles through doon fills
Malaysian Security Printing	Driven piles through deep fills
Plant, Bukit Tagar	
With TV Lin	
With TY Lin	Factings on rook and hared ailes
Apartment block at Monte	Footings on rock and bored piles
Bayu, Jalan Kuari, Cheras for	
IJMP	
With HNC	



CIQ Johore for Gerbang Perdana	Bored piles and retaining structures
With Hussein kh Chong	
KL Pavilion Project, Bukit	Drained basement, raft and bored piles
Bintang	
With TY Lin	
Twin tower apartment for	Bored piles
Zelan Construction at	
Persiaran Hampshire	
With Hussein and kh Chong	
K1 Development, Mont Kiara	Hand dug caissons and bored piles
For IREKA Land	
With IECSB	
K2 Development, Mont Kiara	Barretes and bored piles
for IREKA Land	
With IECSB	
K5 Development, Mont Kiara	Bored piles
for IREKA Land	
With IECSB	
Tiffany Development, Mont	Bored piles
Kiara	
for IREKA land	
Bungalows in Sungei Long on	Surcharge construction and domestic waste and
slopes and construction and domestic waste	construct raft foundations for 3 storey bungalows
For Green Soultions	
Court yard homes for Regal	Bungalows on footings on 20 m thick fill
Mont , Mont Kiara	
With TY Lin	
Condominiums at Gombak	Raft foundations
For Yat Seng development	
Commerce Asset HQ at Jalan	Footings, rafts and bored piles
Raja Laut	
With IJMC	



One Menerung, Bandaraya for Bandaraya Development	Bored piles
With TY Lin	
One Mont Kiara	Footings, Bored piles and barrettes
With IECSB	
Seta Walk, SP Setia	Bored piles
With KL Consult	
12 Kia Peng, Cathay	Bored piles
Organization	
With T Y Lin	
MK 11, Sunrise	Bored piles and jack in piles
With T Y Lin	
Lot A Sentral	Pile raft
With MRCB , T Y Lin	
Paradigm, Kelana Jaya	Bored piles
With IKHMAS JAYA	
Lot G Sentral	Bored piles
With T Y Lin	

## 3.6 FOUNDATIONS FOR SOME LARGE BRIDGES

Sayong Bridge, Kuala Kangsar across the Sungei Perak	Bored pile foundations
With Perunding KJP	
Bridge over the Kuching Barrage	Driven pre-stressed spun piles
With WAHBA	
Pulau INDAH railway bridge for TRC – HO HUP	Driven pre-stressed spun piles
Baram River Bridge, MIRI, Sarawak	Driven steel pipe piles



With KTAS	
Durin Crossing Bridge across	Bored piles
Rajang River, Sibu, Sarawak	
with KTAS	
Rajang River Bridge, Sibu,	Bored piles constructed with reverse circulation
Sarawak	
With KTAS	
Balingian Bridge, Sarawak	Driven prestressed spun piles
With MINSAR	
Widening of the Penang	Bored piles steel casings and constructed with reverse
Bridge	circulation next to existing bridge piles
-	
With HSSI	

## 3.7 OTHER MAJOR INFRA STRUCTURE WORKS

RECLAMATION OF SLIME	Development of geotextile bamboo fascine mattress
PIOND FOR PALACE OF	
GOLDEN HORSES, SG BESI	
LK3 ROCK FILL CLAY CORE	Design and construction project
DAM PUTRAJAYA	
with Loh & Loh Construction	
PUTRA JAYA CORE ISLAND	Design and construct project.
DEVELOPMENT AND	
EARTHWORKS	High embankments on very soft clay stabilized with
	stone columns
With Loh & Loh Construction	
KOTA KINABALU WATER	Reservoirs on slopes and pipelines
SUPPLY PRIVATIZATION PROJECT FOR JOHN	
PROJECT FOR JOHN	
HOLLAND	
With KTAS	
SEPANGAR BAY NAVAL	Slope stability and stabilization and reclamation works
BASE. PHASE 1	
With Muhibbah Engineering	
SEPANGAR BAY NAVAL	Pile foundations for jetties, bridges and ship lifts
BASE PHASE 2	



WITH TRC	
BRUNEI AIRPORT EXTENSION	Shallow and deep foundations and slope treatment
WITH TRC	

## 3.8 ENVIRONMENTAL – LANDFILL PROJECTS

MASTER PLAN KUALITI ALAM FOR MALAYSIA INTEGRATED SCHEDULED WASTE TREATMENT FACILITY LANDFILL AT BUKIT NANAS, NEGERI SEMBILAN, MALAYSIA (IN ASSOCIATION WITH GOLDERS ASSOCIATES PTY LTD, AUSTRALIA)	Master Plan development and submissions to DOE for approvals
KUAILITI ALAM. DETAILED DESIGN OF CELLS 1 TO 6	Detail design and QAQC over a period of 13 years
KUALITI ALAM. PUTRESCIBLE WASTE CELL	Detail design and QAQC
KUALITI ALAM. PROGRESSIVE CAPPING OF CELLS AS WASTE IS RAISED	Detail design and QAQC
SIBU MUNICIPAL LANDFILL. MASTER PLAN AND DETAIL DESIGN OF THREE CELLS	Design and QAQC of liner
FOR SIBU CITY COUNCIL QAQC OF PUCHONG MUNICIPAL WASTE LANDFILL CONSTRUCTION FOR WORLD WIDE SITA ENVIRONMENTAL MANAGEMENT	QAQC works and rectification works to liners
ASIAN RARE EARTH STORAGE FACILITIES	Peer review



## **3.9 SLOPE STABILIZATION WORKS**

STABILIZATION OF SLOPE MOVEMENTS USING ANCHORED HAND DUG CAISSON AT GENTING HIGHLANDS	Design and construct anchored hand dug caissons
	Design of growting oliding plane
STABILIZATION OF HIGH ROCK FILL AT PADANG RENGAS	Design of grouting sliding plane
FOR M/S PERAK HANJUNG.	
STABILIZATION OF FAILED REINFORCED SOIL WALL IN KAJANG	Analysis and design of retaining structures
STABILIZATION OF FAILED SLOPES AT RAUB DISTRICT HOSPITAL	Analysis and design rock fills
STABILIZATIONN OF CUT SLOPE FAILURES AT PETRONAS UNIVERSITY, TRONOH	Analysis and Design of retaining structures and soil reinforcements
FOR KLCC	
STABILIZATION OF FILL SLOPE AND RETAINING WALL FAILURE AT PRIME MINISTER'S OFFICE, PUTRA JAYA	Analysis and Design of slope reconstruction
FOR KLCC STABILIZATION OF ROCK SLOPES	Analysis and Design of soil nails and rock bolts
AT PAYA TERUPONG, PENANG	
22 m HIGH RE WALL ON HAND DUG CAISSONS AT PAYA TERUPONG, PENANG	Analysis and design of wall and caisson foundations
STABILIZATION OF FAILED FILL SLOPES WITH REINFORCED SOIL	Analysis and design of retaining wells and slang
SLOPES WITH KEINFUKCED SUIL	Analysis and design of retaining walls and slope



WALL AT GUA MUSANG	reconstruction
WITH PATI – HO HUP	
STABILIZATION OF CUT SLOPES AT SEPANGAR BAY NAVAL BASE	Geological investigations and design of revised slope configurations
STABILIZATION OF UNRAVELLING SLOPE AT PULAU LANGKAWI	Analysis and design of rock bolts and gunite
SLOPE STABILIZATION FOR 4 SEASONS, PENANG For Belleview	Hand dug caissons, soil nails, rock bolts, retaining structures,
TAMAN MELAWATI DEVELOPMENT – SLOPE STABILIZATON For IGB	Soil nails, rock bolts, concrete buttress walls
SLOPE STABILIZATION FOR PETRONAS GAS PIPELINE at LIMBANG, SARAWAK	Permanent sheet piles, soil nails, rock bolts, gabions
With TRC for Petronas Carigali	

## 3.10 UNDERPINING OF BUILDINGS

UNDERPINNING RESIDENTIAL BUILDING UNDERGOING SETTLEMENT AT DAMANSARA HEIGHTS KULA LUMPUR	Design of micropiles
UNDERPINING APARTMENTS AFFECTED BY SLOPE MOVEMENTS USING MICROPILES	Design of micropiles



## 3.11 TANK FARMS

PSR 2 TANK FARM AND OTHER FACILITIES FOR PETRONAS, MALACCA	Analysis and design of different foundations for more than 30 tanks
WITH WMK	
OIL PALM TANKS AT BINTULU PORT	Analysis and design of pile foundations for more than 10 storage tanks
WITH PERUNDING WAHBA	

## 3.12 AIRPORTS

KUCHING AIRPORT RUNWAY AND TAXIWAY EXTENSION	Advise on fill materials
With MINSAR	
JOHORE BARU AIRPORT TERMINAL	Design of building foundations
BUILDING EXTENSION	
WITH KTAS	
BALINGIAN AIRPORT	Replacement of peat and surcharge soft
	clays with vertical drains
With MINSAR	

## 3.13 EXPERT WITNESS – ARBOTRATION AND COURT HEARINGS

Dr Toh Cheng Teik has been an expert witness at several arbitrations and court hearings.

## 3.14 MISCELLANEOUS PROFESSIONAL ACTIVITIES

PUBLICATIONS IN REGIONAL AND INTERNATIONAL CONFERENCES AND JOURNALS	More than 40 papers
MALAYSIAN HIGHWAY TRIAL EMBANKMENTS ON SOFT CLAYS	Author of the final report



LECTURES TO PROFESSIONAL CONTIULA EDUCATION	Topics include:
	Bored piles
	Soft clay
	Peat
	Cut slope stability
	Residual soil fill
	<ul> <li>Retaining structures</li> </ul>
	General foundations
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	<ul> <li>Reclamation of disused tin mining land</li> </ul>
	Deep excavations
CIDB COMMITTEE FOR DRAFTING	Dr C T Toh as Deputy Chairman
GUIDELINES FOR CONSTRUCTION ON PEAT	Ir Chee Sai Kim as Committee member

## 4.0 PROJECTS OUTSIDE MALAYSIA

8 M HIGH APPROACH EMBAKMENT	Stage construction with gain in strength of up
ON PEAT 200 KM NORTH OF	to 8 m high geotextile reinforced embankment
DHAKA, BANGLADESH	
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WITH DIRD PTE LTD	
REHABILITATION OF RAILWAY	Review requirements for track sub-grade
TRACK, YANGORN, MYANMAR	preparation
	propulation
WITH KL CONSULT	
PRESSURE GROUTING TO REPAIR	Grouting works
DEFECTIVE BORED PILES IN	
COLOMBO, SRI LANKA	
FOR NAWALOKA PTE LTD	
JETTY FOR YEMEN GAS IN YEMEN	Driven pipe piles and bored piles by reverse
	circulation – resident geologist at site
FOR MUHIBBAH ENGINEERING	
REVIEW OF TREATMENT WORKS	
FOR SIHANOUKVILLE AIRPORT	
RUNWAY EXTENSION FOR	
MUHIBBAH ENGINEERING	



DOHA INTERNATIONAL AIRPORT CATERING CENTRE	Bored piles in limestone
FOR MUHIBBAH ENGINEERING	
KOTA KINABALU AIRPORT	Advise on reclamation works and soil treatment works
WITH MINSAR	
BRUNEI AIRPORT EXTENSION	Slopes and foundations
FOR TRC	
EMBANKMENT FAILURE STUDY IN BRUNEI	Embankment failure assessment
FOR CHINA HARBOUR 3	