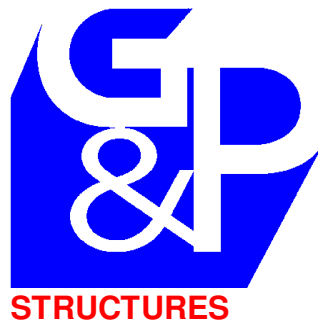

COMPANY PROFILE



G&P STRUCTURES SDN. BHD.

41-3, JALAN TASIK SELATAN 3
BANDAR TASIK SELATAN
57000 KUALA LUMPUR
MALAYSIA

TEL  : 603-9058 3119 FAX  : 603-9058 4118

EMAIL  : gnp-struc@gnpgroup.com.my

WEBSITE  : www.gnpgroup.com.my

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COMPANY PROFILE

G&P STRUCTURES SDN. BHD. is a specialist company of **G&P Professional Group**

We are an engineering consultancy company providing a broad scope of services encompassing the discipline of :-

- Structural Engineering : Specializing in structural designs of large and high rise buildings
- Value Engineering
- Engineering Audit and Review
- Alternative Design
- Feasibility Study
- Failure Investigation
- Construction Supervision

Our assembled team of professionals is specialized in the respective disciplines and has an impressive knowledge base on the current local industry trends as well as authority approval processes.

G&P Structures Sdn. Bhd. maintains an in-house computer network system that support most sophisticated engineering analysis, designs and draughting software available today.

The wide range of computer aided design and draughting facilities made available to our team of professionals have been extensively used to provide the most optimal design to Clients.

With the implementation of the automation intranet system, we have managed to achieve higher efficiency in the office workflow and operational process.

We recognize the many advantages of Building Information Modeling (BIM) have to offer to our Clients and have been constructing 3D virtual prototypes of project buildings using Revit Software.

CORPORATE PHILOSOPHY

OUR VISION

To obtain the hallmark for Quality Services, Technical Excellence, Reliability and Safety

OUR ASPIRATION

To provide Innovative and Economical Designs

To ensure Safety and Ease of Construction

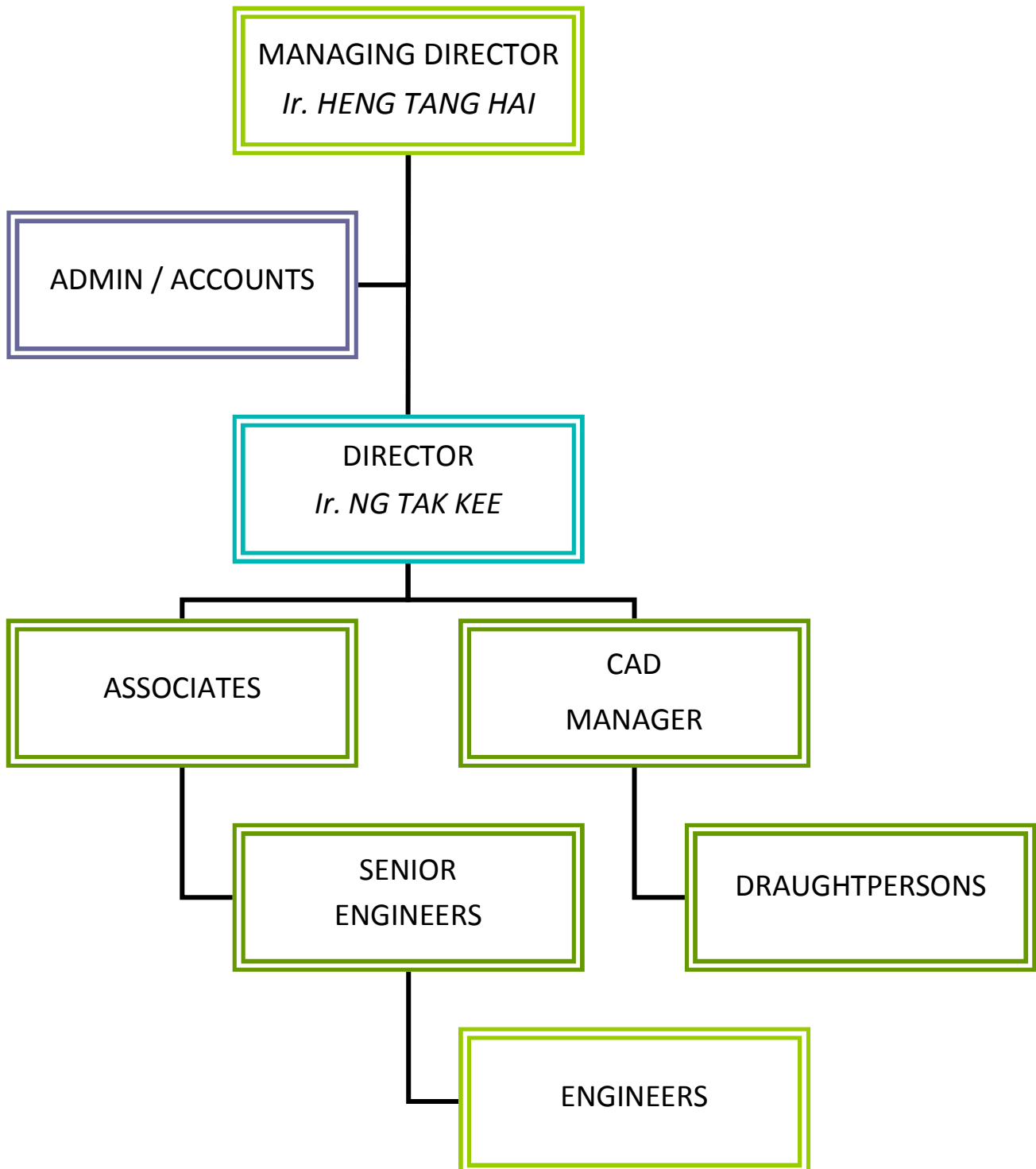
OUR VALUES

To uphold Integrity in all aspect of Works and Communications

To value staffs' Creativity and Commitment to Quality

To provide Best Solution by inspiring Teamwork

ORGANIZATION CHART



KEY PERSONNEL

Ir. HENG TANG HAI



Ir. Heng has over 30 years of experience in structural, infrastructure and geotechnical engineering works with reputable engineering consultancy firms. This encompass international operations environment in United Kingdom, Singapore and Malaysia.

Ir. Heng has hands-on experience in design, documentation and supervision of large and high-rise concrete and steel building structures, with deep basement and pile foundation system, and associated infrastructure works.

He is thoroughly familiar with most of the latest sophisticated engineering analysis and design software available in the market.

His ability to lead, analyze and design of large scale projects with economical and innovative solutions have been proven with the various projects that have been completed successfully.

Ir. NG TAK KEE



Ir. Ng has in excess of 25 years of experience in structural and infrastructure engineering works in a wide range of projects, having worked in Taiwan, Guam (Territory of USA) and Malaysia.

His expertise is in the design and supervision of large scale residential and commercial building structures, airport and convention center with deep basement and various foundation systems. His vast experience has also provided much added value to the associated infrastructure works of the projects he has successfully completed.

Ir. Ng has been responsible for the concept design, planning and designing of many of the major building projects within G&P Structures Sdn. Bhd.

*** For Full Curriculum Vitae of Key Personnel, please refer attachment at the back*

HIGH RISE / COMPLEX STRUCTURES

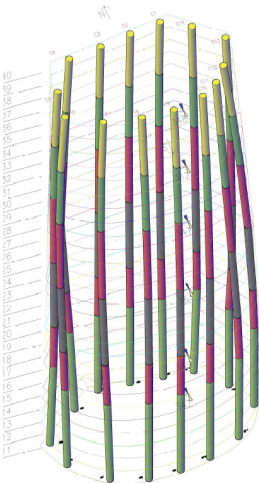


PLATINUM PARK KLCC

Platinum Park, situated in the heart of Kuala Lumpur, consist of one block of 38-storey and one block of 50-storey Office Towers. The two commanding Towers are connected by 9 floors of retail and carpark podium at the ground, in addition to hosting 3 levels of basement carpark. The project cost was estimated to be 500 Million Ringgit Malaysia. G&P Structures Sdn. Bhd. was commissioned by the Client (Naza TTDI Sdn. Bhd.) as the consulting Civil & Structural Engineers for this prestigious project.

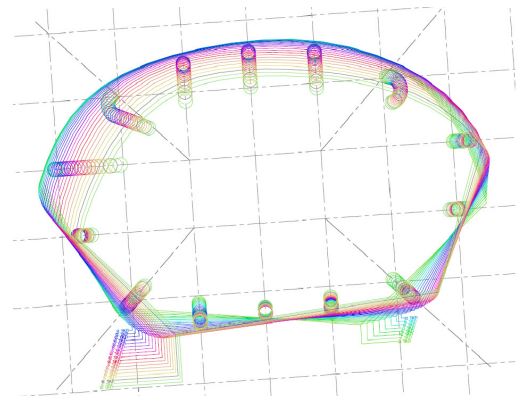


To achieve Architect's desired long-span column-free space for the offices, prestressed concrete beam and slab system was adopted. In turn, a shallow floor structure system was achieved and translated to significant cost savings for the Clients as any height reduction will have direct impact on savings in all vertical structural, architectural and building services elements, as well as a reduction in building volume with a consequent reduction in cooling loads.



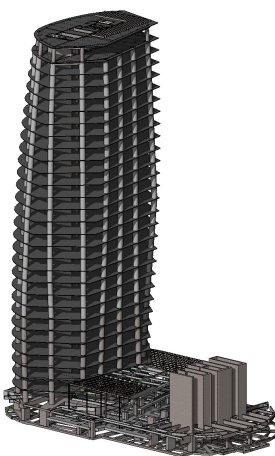
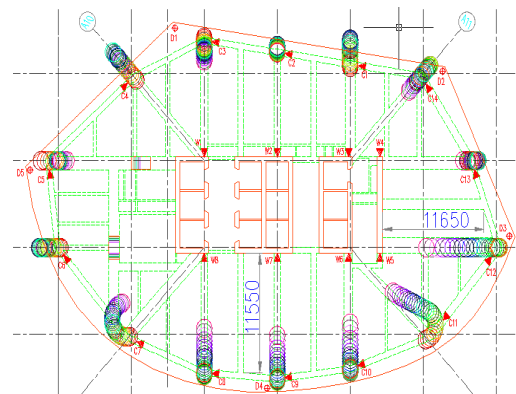
In view that both the Towers comprises of non-symmetrical and varying floor plates with slanting columns at each floor, the Towers were expected to experience more significant differential shortening of vertical elements, i.e columns and walls, at each floor during construction, depending on construction sequence and loadings.

If the shortenings were not given due consideration during construction, problems may develop in the performance of curtain walls and levelness of floor systems, and may cause distress to the mechanical and plumbing lines that are attached.



During the construction phase, it was essential to obtain data on how the building is actually moving compared to theoretical analysis hence floors was regularly surveyed to gain movement trend.

The Contractors were also guided to ensure their construction methods do not cause locked-in stress, which can reduce the design capacity of the structures significantly, and also do not result in overstressing of structural elements at any stage of the project.



**** ASIA PACIFIC PROPERTY AWARDS 2012 – PLATINUM PARK – MALAYSIA'S BEST COMMERCIAL HIGH RISE DEVELOPMENT ****

HIGH RISE / COMPLEX STRUCTURES

SOLARIS 2 DUTAMAS

This mixed-use development with a total construction floor area of 6.3 million ft² (587,480m²) featuring 12 blocks of 6-8 levels of shop cum office, 1 block 21-storey office, 3 blocks 24-storey twin residential tower with 780 apartment units and 5363 car parking spaces spreading over 7 levels of semi-basement car park was developed by Sunrise Alliance Sdn Bhd and located at the vicinity of prestigious Mont Kiara area.

A total of 1.3million m³ of earth were removed from 6.992 hectare (17.278 acre) former green hill to give way for this 750 million ringgit development. The whole project commenced in 2005 and completed in 2010. The upscale Publika retail mall was then opened in 2011.



The design development and construction works were carried out concurrently during the initial stage of this project. It was challenging to design and manage such a large development site together with developer's in-house Management Contractor, to ensure different trades of Contractors in earthworks, bored piling, micro piling, soil nailing and basement RC works were well coordinated, so that the works could be carried out simultaneously with minimum contractual implications. At the same time, we had to review the design and sequence of works continuously, to cater for the ongoing changes that were evolving from the design development.



The foundations were complex with different piling system adopted for different component of development, to ensure the selected systems were cost effective, safe, technically suitable and construction friendly. The piling systems comprised of 933 bored piles of different diameters ranging from 750mm to 1200mm, 306 micro-piles and raft foundation. Tension piles were installed in part of the basement to resist water uplift pressure. It is essential to ensure the differential settlements between the different foundation systems were within acceptable limits, and to prevent any adverse effect to the superstructure works.



The height of the semi-basement wall along the northern boundary was 31m high. Cost effective soil nail wall was adopted instead of the costly contiguous bored pile or diaphragm wall. The soil nail wall was the first and highest basement wall ever constructed in Malaysia. We had to work closely with the Architect, Geotechnical Engineer and Contractors to ensure that the sequence of construction for soil nail berms, pile points and drainage were well coordinated without obstruction, and that part of podium building structures could be founded on the formation of soil nail slope.

RC beam and slab system was adopted for the retail podium floors, which was an economical structural system and had flexibility in the sequence of construction works and could accommodate changes as required by the retail tenants. Post-Tensioned band beams were used in retail areas which required 15.6m span of column-free retail space. RC band beam and slab system was used for the basement carpark to reduce the overall floor depth while permitting longer spans and shorter time of excavation. The relatively wide and shallow cross section simplifies both the formwork and services which can pass under the beams and shortened the floor to floor construction time.

Flat slab and shear wall system was used for the apartment towers. The floor level between the above apartment and the below retail areas, act as a transfer floor allowing the transition from flat slab and shear wall system above to beam and column system below. With aluminium formwork system, the floor to floor construction cycle time can be reduced significantly comparing to the conventional construction time per floor. In addition, aesthetically pleasing vertical and smooth wall and ceiling finishes can be achieved by skim coating to the fair-face concrete surface.

Flat slab concrete floor will usually result in economics in the total construction costs because of shallower structural depth, resulting in reduced storey height. This can be very significant as any height reduction translates directly into savings in all vertical structural, architectural and building services elements.

Each of the twin 24-storey apartment towers was linked by a 4-level high sky bridge, starting from Level 5, that housed a triple volume multipurpose hall, spa room, gym room, M&E room and swimming pool. The lowest level of sky bridge was constructed by steel structures to minimise the use of temporary falseworks during construction. Detailed analysis and design were carried out to determine the complex support reactions between the two towers and sky bridge, including the impacts under severe wind load and lateral notional loads.



In order to optimize the traffic circulation and maximise the number of car parking space in basement floors, the columns of shop office blocks were transferred along the north-south direction at ground floor level.

The project team had to work proactively to accommodate the evolving changes from the architectural design development during the construction stage. The commitment of the project team to actively resolve the changes in a timely manner was essential to avoid disruption to the site progress and keeping the project within budget. Frequent interaction and coordination with the project team were carried out to ensure any structural solution derived due to the changes was well coordinated with the architectural and M&E services before the issuance of revised drawing for construction.



**** FIABCI MALAYSIA PROPERTY AWARDS 2014 – PUBLIKA – WINNER OF RETAIL CATEGORY ****

HIGH RISE / COMPLEX STRUCTURES

DAMANSARA UPTOWN PHASE II



Damansara Uptown Phase II is an integrated development with approximate 3.9 million ft² construction floor. It is the desire of the developer See Hoy Chan Sdn Bhd to transform the 16 acres area at the heart of Damansara Uptown into a “gateway to business, leisure and home”.

The development comprises 1 block of 30-storey and 1 block of 32-storey apartments, a 6-storey boutique mall, 1 block of 21-storey service apartment (Somerset) and 1 block of 30-storey Multimedia Super Corridor (MSC) Status Green Grade-A office, with an estimated total construction cost of more than a billion ringgit. All the blocks were founded above 3 levels of basement car park. Carefully planned phasing strategy allowed the development to be completed in phases for early hand over and operation over the construction program of 8 years.

The development is surrounded by existing 4–storey shop houses founded on pad footing. Re-charging wells were used during dewatering and excavation to control the original high ground water table and to prevent ground settlement that can cause damage to existing shop houses. Cost effective secant pile walls tied back with temporary removable ground anchors were adopted for the 9 to 15m deep basement construction, which involved the removal of 500,000m³ of earthworks.

To simplify the construction of lowest basement slab and overcome the high uplift ground water pressure, each podium column was supported by single tension bored pile. By doing so, pile caps were omitted and column loads were transferred directly into piles that were embedded into one metre thick of lowest basement flat slab.

Various structural systems were studied and selected to meet the architectural design intents and floor usages within allowable budget and timeline.



Shear wall and flat slab system for apartment floor to avoid undesirable large columns or beams in apartment units; post-tensioned beam and slab system for long span structures in major area of retail floor and car park area with 2.85m shallow floor to floor height; light-weight composite steel beams and slabs for long cantilever at retail area in order to form edging of retail center voids; steel trusses for 20 to 37m long pedestrian link bridges to create column free floor spaces below; precast hollow core slab for forming car park floors over an existing internal road; and r.c. beam and slab system for lift lobbies, toilets, landscaping areas and partial areas of retail that required flexibility in changes for future floor usage.



In addition, the project also involved the connection of new buildings to existing buildings, and several strengthening methods were carried out to strengthen the existing structures in order to accommodate new and additional floor usages. New micropile foundation was installed to underpin the basement of existing building in order to support the additional loadings of new mall structures.

This project has extensive infrastructure works which involves two tunnels, comprehensive upgrading of surrounding street scape and drainage, elevated driveway ramp joining to existing SPRINT highway and 2 km long of deep sewer line involving pipe jacking.

With our dedicated team of Engineers and collaborative approach during the design and construction stages, early identification of potential problems was possible and therefore avoided costly and time consuming delays during the progress of construction.



HIGH RISE / COMPLEX STRUCTURES

RADIA BUKIT JELUTONG

Situated in the heart of Bukit Jelutong, **Radia** is an integrated development by Sime Darby Sunrise Development Sdn Bhd. This distinguish project is a joint venture project between Sime Darby Property Berhad and UEM Sunrise Bhd, with an estimated gross development value of RM1.6 billion. Spread across 21 acres of freehold land, the development covers a construction floor area (“CFA”) of 4.4 mil sq ft, comprising 640 units of serviced apartments (Radia Residences), a total of 305,000 sq ft of office space (Radia Offices) and an 880,000 sq ft retail area (Radia Retail).



Radia sits on primarily flat land with one level of sub-basement. The land itself contains good soil conditions thus an economical injection pile system was adopted for the foundation to minimise noise to the surrounding residential area.

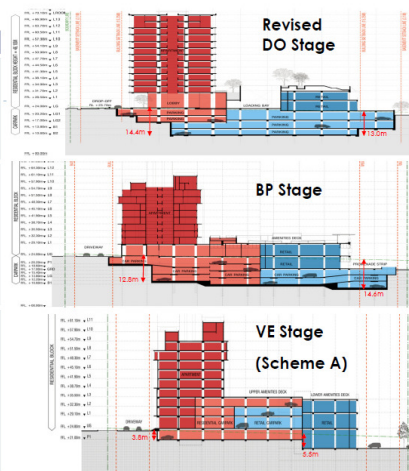
Due to limitation of building height by Department of Civil Aviation, post-tensioned flat slab system was adopted for carpark podium floors to achieve floor-to-floor height of 2.9m. This system allows for more flexible routing of mechanical and electrical services compared to conventional beam and slab system.



The design development of Radia has gone through several value engineering processes to achieve its feasibility. Initially designed with 3 basements levels, the construction time and costs were largely contributed by the expensive basement slab to resist uplift force from the underground water pressure and also large and deep excavation works. Consequently, Radia was then redesigned and value engineered to one level of sub-basement to reduce the overall costs and therefore brought back feasibility to the project.

Summary

	Deep Excavation	Lowest Basement Level
Revised DO Stage	5.0~14.4m	RL10.6 Maximum water pressure = 114kPa
BP Stage	5.0~14.6m	RL9.0~10.6~12.2 Maximum water pressure = 114kPa
VE Stage (Scheme A)	3.8~5.5m	RL18.00~21.00 Maximum water pressure = 0kPa



One of the greater challenges in the structural design of Radia was in the structural framing of Radia Residences. Beam and slab system was adopted in the structural framing for the residential blocks due to its non-typicality arrangement of the apartment units where it changes at every 2 levels. Thorough considerations were given when designing the beams at levels where the unit type changes to avoid aesthetic issues such as unsightly beam running at the top of living or dining area as well as pipe transfers in between the ceiling space. Coordination among the project team was crucial to ensure that the apartment units were able to achieve the Architect’s design intent aesthetically.

**** ASIA PACIFIC PROPERTY AWARDS 2013 – RADIA BUKIT JELUTONG – BEST COMMERCIAL HIGH RISE DEVELOPMENT IN ASIA PACIFIC & MALAYSIA CATEGORY ****

HIGH RISE / COMPLEX STRUCTURES



IMPIANA @ Nusajaya

IMPIANA Nusajaya is the first high-end apartment in Nusajaya. It is strategically located in between Johor Bahru City and Singapore. Impiana Nusajaya is a luxury condominium offering the natural greenery of East Ledang and open space units to the residents.

This project features 4 tower blocks that are arranged symmetrically from the main axis; consisting of two 12-storey and two 24-storey apartment tower. The key features include a grand staircase entrance, linking the main drop-off and the pool deck, which features plenty of greens and cascading water features, an infinity wall and a gym perched over the Olympic-sized pool.

Client : UEM Land Bhd

Project Cost : RM185 Million

Services Provided : Civil & Structural Engineering Consultancy



Seringin Residences @ Happy Garden

Seringin Residences features 2 residential towers that contain 542 homes, including 10 Garden Villas & 8 Penthouses. At the podium of the residential towers, there is an extensive array of health and recreational facilities, ranging from a 50-metre pool and Lifestyle Pavilions, to sauna, playground and even a floating gym. Next to the towers is a double storey S.A.G.E. (Sustainable Application of Green Energy) which is powered by the latest in green technology to introduce eco-friendly living.

The tower design incorporates flat slab and shear wall system to achieve maximum headroom with no beam at living rooms and bedrooms. Aluminium formwork system is used to minimise construction time. Post-tensioned band beam and slab system is adopted in basement carpark to allow for longer floor span (max 12.8m) and better headroom. 2m deep transfer beams transfer the apartment shear wall loadings to columns at basement carpark.

Client : Utama Lodge Sdn Bhd (See Hoy Chan Group)

Project Cost : RM268 Million

Services Provided : Civil and Structural Engineering Consultancy

the MANSIONS @ Parkcity Heights

the MANSIONS involved the development of a prestigious 127 units Regal Parkhomes in a 19.6-acre gated and guarded hilltop enclave.

The key features include 3 ½-storey, 33-foot building width and individual lift.

The onsite facilities include: infinity pool, wading pool and water feature, children's playground, suspension bridge, gymnasium, multi-purpose hall and landscape park.

Client : Perdana Parkcity Sdn Bhd

Project Cost : RM196 Million

Services Provided : Civil and Structural Engineering Consultancy

**** FIABCI MALAYSIA PROPERTY AWARDS 2015 –
THE MANSIONS - RESIDENTIAL (LOW RISE) CATEGORY ****



HIGH RISE / COMPLEX STRUCTURES



the Westside II @ Desa ParkCity

the Westside II is a 41-storey prestigious condo that offers 338 units of apartment with a distinctive double-storey link bridge that connects the tower to the facilities deck and carpark at podium.

Flat slab and shear wall system is adopted for the condominium and provide an economical structural system as shallower structural depth will result in reduced storey height.

With aluminium formwork system, the floor to floor construction cycle time can be achieved within 7 days, which is approximately half of the conventional construction time per floor.

Client : Perdana Parkcity Sdn Bhd

Project Cost : RM160 Million

Services Provided : Civil and Structural Engineering Consultancy

SERINI @ Melawati

Serini Melawati is located within the heart of Taman Melawati, and it is part of the new Melawati Township. This service apartment consists of 2 identical 38-storey towers of 528 apartment units, and more than half-acre of podium space dedicated for recreation.

The structural system consists of RC shear wall and flat slab system for the apartment towers, while RC beam and slab system is adopted for carpark and recreational floors below. A 2.5m thick transfer slab is used to allow the change of different structural systems between the towers and podium floors. Aluminum formwork system is used to minimize construction time.

Client : Sime Darby Melawati Development Sdn Bhd

Project Cost : RM200 Million

Services Provided : Civil and Structural Engineering Consultancy



Parcel 6T Phase 1 @ Putra Heights

Phase 1 of Parcel 6T is Sime Darby Property's vision for a modern serviced apartment that will be an initial benchmark development for the future residential sites within the Putra Heights Parcel 6T Masterplan.

The development consists of 5 Blocks of residential apartment and 1 block of SOHO with 5 storey of carpark below together with facilities area on podium level. The on-site facilities include swimming pool, function hall, cafes and convenience stores.

G&P Structures has been engaged to provide civil and structural consultancy for the development. Flat slab and shear wall system is adopted for the tower blocks for a more economical construction cost due to the reduction in structural depth which in turns reduces the storey height.

Transfer slabs are used to transfer the shear wall loadings from the towers to columns at podium level. This allows flexibility for the architectural features at podium and carpark.

Client : Sime Darby Putra Heights Development Sdn Bhd

Project Cost : RM320 Million

Services Provided : Civil and Structural Engineering Consultancy

HIGH RISE / COMPLEX STRUCTURES



Kiara Designer Suites, Mont' Kiara, Kuala Lumpur, consisting of 1 block of 29-storey service apartment, 1 block of 6-storey carpark with recreation facilities and commercial space, and 2-storey of service apartment on top of the carpark.

Client : Sunrise Paradigm Sdn Bhd

Project Cost : RM90 Million

Services Provided : Civil & Structural Engineering Consultancy

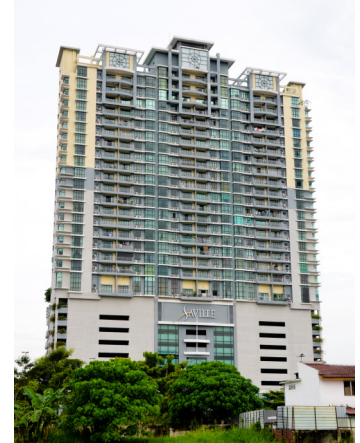


The Residence, Mont' Kiara, Kuala Lumpur, consisting of 19 units of bungalow with 8 different architectural designs.

Client : Sunrise Berhad

Project Cost : RM30 Million

Services Provided : Civil & Structural Engineering Consultancy



Saville Residence, Kuala Lumpur, consisting of 1 block of 30-storey Service Apartment, including 3-storey shop office and 7-storey carpark podium.

Client : Gabung Wajib Sdn Bhd (Metro Kajang Group)

Project Cost : RM60 Million

Services Provided : Civil & Structural Engineering Consultancy



Penang Time Square, Georgetown, consisting of 1 block of 11-storey podium with basement carpark and commercial area; and 2 blocks of 20-storey service apartment, 2 blocks of 25-storey office and 1 block of 25-storey hotel.

Client : Ivory Gleneary Sdn Bhd

Project Cost : RM400 Million

Services Provided : Structural Engineering Consultancy for Foundation and Basement Wall



Ritze Perdana II, Damansara Perdana, Petaling Jaya, consisting of 3 blocks of 8 to 9-storey apartment on top of a 9-storey podium carpark and commercial area.

Client : Usaha Hartamas Sdn Bhd

Project Cost : RM66 Million

Services Provided : Civil & Structural Engineering Consultancy



Idaman Residence, KLCC, Kuala Lumpur, consisting of 1 block of 34-storey condominium, including 2-storey of recreation facilities and 4-storey of carpark.

Client : Orchard Park Sdn Bhd (TA Properties Sdn Bhd)

Project Cost : RM85 Million

Services Provided : Structural Value Engineering, Alternative Design & Engineering Review

HIGH RISE / COMPLEX STRUCTURES



Axis Pandan, Kuala Lumpur, consisting of 1 block of 33-storey and 1 block of 43-storey service apartments link by 10-storey of retail and carpark podium.

Client : Reliable Capacity Sdn Bhd (RK Group of Companies)

Project Cost : RM125 Million

Services : Civil & Structural Engineering Consultancy



Solaris 3, Kuala Lumpur, consisting of 2 blocks of 30-storey office towers and 2 blocks of 6-storey shop offices. 2 blocks of 8 to 12-storey shop office and 3 blocks of 10 to 12-storey service apartment and 1 block of 5-storey shopping mall.

Client : Ibarat Duta Sdn Bhd (Sunrise Berhad)

Project Cost : RM1.3 Billion

Services : Civil & Structural Engineering Consultancy



Suasana Bangsar, Kuala Lumpur, consisting of 1 block of 26-storey condominium with recreation facilities and 5 levels of sub-basement carpark.

Client : UM Land Berhad

Project Cost : RM75 Million

Services : Civil & Structural Engineering Consultancy



Paramount, PJ Section 13, a mixed development consisting of 1 block of 32-storey and 1 block of 36-storey service apartments, 2 blocks of 15-storey offices, linked by retail and carpark podium, and 3 levels of basement carpark. The development aim to achieve GBI Gold rating.

Client : Paramount Property Development Sdn. Bhd.

Project Cost : RM 300 Million

Services : Civil & Structural Engineering Consultancy



Giant Distribution Centre. Sepang, Selangor, consisting of a 150m x 250m steel warehouse with flat floor and high racking storage.

Client : Gelanggang Harapan Construction Sdn Bhd

Project Cost : RM100 Million

Services : Civil & Structural Engineering Consultancy



Jalan Semangat, Petaling Jaya, consisting of 1 block of 21-storey office tower link by 9-storey retail and carpark podium with recreation facilities.

Client : Vistayu Sdn Bhd (Symphony Life Group)

Project Cost : RM121 Million

Services : Civil & Structural Engineering Consultancy

INNOVATION AND VALUE ADDING

STRUCTURAL INNOVATION

G&P Structures Sdn. Bhd. understands and embraces the fast track delivery process.

We encourage the use of advanced structural analysis to deliver buildable and economical structures. However, the resulting structural solution is developed after taking consideration of all the design and construction governing factors such as:

- Construction Speed
- Construction Technique
- Modularization of System
- Compatibility of System
- Coordination with Building Services

Based on the above we will evaluate and furnish recommendations for the best overall solution to the Clients. We do also provide a considerate number of varying alternative structural solutions for QS cost estimation. These examples include:

- Load Bearing Wall System
- System Formwork
- Band Beams
- Post Tensioned Systems
- Precast Structures

As the options and systems are evaluated, it is evident that there are many other competing parameters such as floor to floor heights, labour and material cost, services integration and planning constraints to be considered. This is where we believe the relevant experience of our Engineers can truly offer the Client a value added proposition.

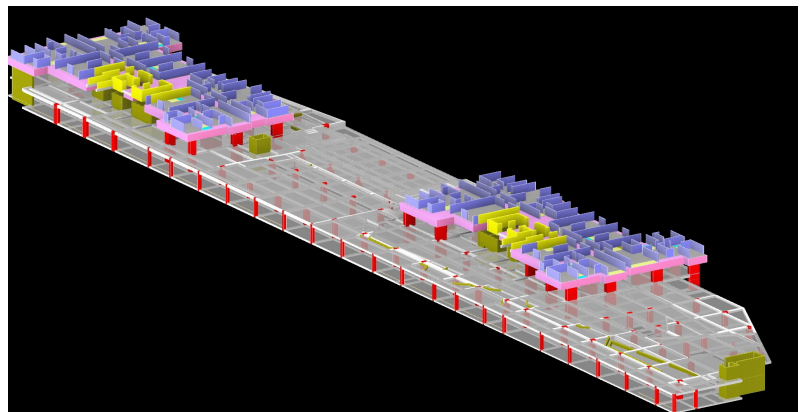
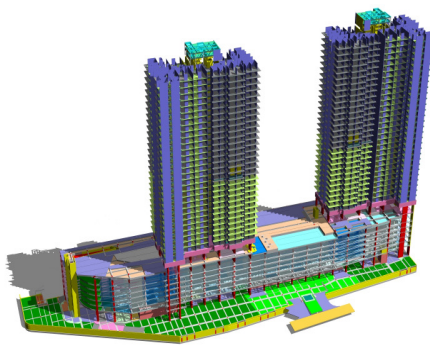
BUILDING INFORMATION MODELING (BIM)

Building Information Modeling (BIM) is an intelligent model-based process that provides insight to help plan, design, construct, and manage buildings by capturing design information in digital prototype.

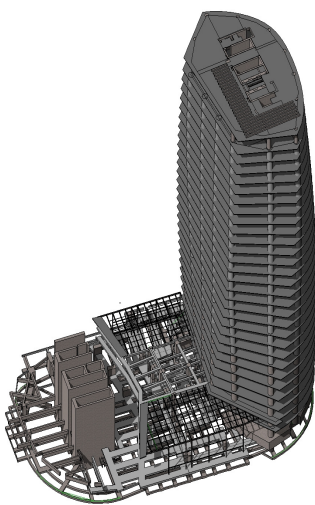


The BIM model is a database of information for all the elements of a Project. This information can be presented in numerous ways such as plans, elevations, sections, details and 3D. The change of an element in one view is automatically updated in all other views, providing us with a better coordinated documentation compared to the traditional 2D CAD process. This allows us to deliver the project faster and more economically.

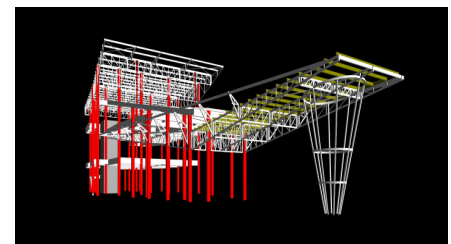
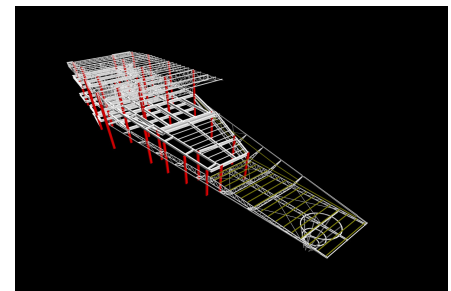
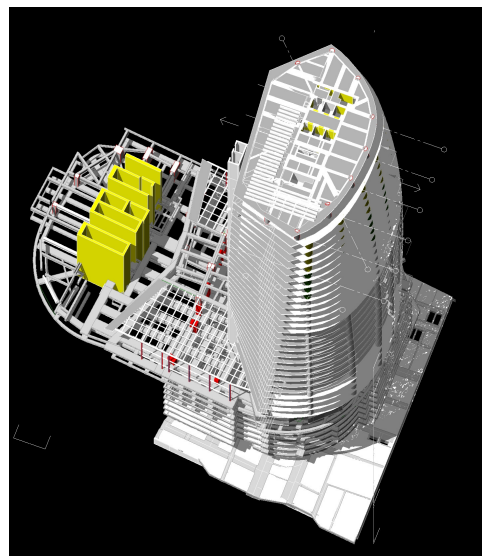
Knowing the benefits of BIM, wherever possible we model 3D prototypes of project buildings in a 3D BIM environment using Revit Structure.



SERINI Melawati



Platinum Park



Paramount Sales Gallery

CURRICULUM VITAE

NAME : **IR. HENG TANG HAI** **DATE OF BIRTH** : 18 September 1961
PROFESSION : Civil & Structural Engineer **NATIONALITY** : Malaysian
POSITION IN FIRM : Managing Director of G&P Structures Sdn Bhd

KEY EXPERIENCE/SPECIALISATIONS:

Thirty years of experience in structural, infrastructure and geotechnical engineering works with the engineering consultancy firms. Have worked in international operations environment in three countries, i.e. United Kingdom, Singapore and Malaysia. Thoroughly familiar with most of the latest and sophisticated engineering analysis and design software. Hands-on experience in design, documentation and supervision of large and high-rise concrete and steel building structures, with deep basement and pile foundation, and associated infrastructure works. Possess good communication, leadership and people management skills, and a high level of commitment.

Recent assignments include:

Project Director	Dedaun Apartment, Nusajaya, consisting of 3 blocks of 30-storey apartment, 1 block of 3-storey carpark with recreation facilities, management office and guard house. (Project Cost : RM350 Million)	2014
	Symphony Office Tower, Petaling Jaya, consisting of 1 block of 21-storey office with retail and carpark podium, and 1 level of basement carpark. (Project Cost : RM120 Million)	2015
	Paramount Office and Apartment Towers, Petaling Jaya, consisting of 1 block of 32- storey and 1 block of 36-storey service apartments, 2 blocks of 15-storey offices, linked by retail and carpark podium, and 3 levels of basement carpark. (Project Cost : RM300 Million)	2015

QUALIFICATIONS:

Bachelor of Applied Science in Civil Engineering, University of Ottawa, Canada. (1984)
 Registered Professional Engineer, Malaysia. (1992)
 Registered Accredited Checker, Malaysia. (2006)
 Registered Professional Engineer, Singapore. (1992)
 Corporate Member, Institution of Engineers, Malaysia. (1991)
 Member, Association of Consulting Engineers, Malaysia. (1998)
 Member, APEC Engineer & EMF International Engineer. (2005)

LANGUAGES:

English : reading, writing and speaking - good
 B.Malaysia : reading, writing and speaking - fair
 Mandarin : reading, writing and speaking - fair

EXPERIENCE RECORD:

EXPERIENCE WITH G&P STRUCTURES SDN BHD, KUALA LUMPUR

Managing Director (July 2003 to Present)

Paramount Office and Apartment Towers, Petaling Jaya, consisting of 2 blocks of 37- and 41-storey apartments, 2 blocks of offices, linked by 4-storey of retail and carpark podium, and 2 levels of basement carpark. (Project Cost : RM300 Million)

Symphony Office Tower, Petaling Jaya, consisting of 1 block of 21-storey office with retail and carpark podium, and 1 level of basement carpark. (Project Cost : RM120 Million)

Dedaun Apartment, Nusajaya, consisting of 3 blocks of 30-storey apartment, 1 block of 3-storey carpark with recreation facilities, management office and guard house. (Project Cost : RM350 Million)

Serini Melawati, Kuala Lumpur, consisting of 2 blocks of 36-storey service apartments with recreation facilities and 6-storey of carpark podium. (Project Cost : RM200 Million)

Parcel 6T Phase 1, Putra Heights, consisting of 6 blocks of apartments, varying from 14- to 30-storey, with recreation facilities and 5-storey of retail and carpark podium. (Project Cost : RM320 Million)

Puteri Harbour, Nusajaya, consisting of 1 block of 27-storey office, 4 blocks of condominium varying from 24,21,18 and 15-storey, link by 4-storey retail podium and sub-basement carpark. (Estimated project Cost : RM500 million)

Impiana Apartment, Nusajaya, consisting of 2 blocks of 12-storey apartment, 2 blocks of 24-storey apartment, 3-storey podium carpark with recreational facilities, management office and guard house. (Estimated project Cost : RM200 million)

The Mansions, Desa Parkcity, consisting of 69 unit 3½ –storey, 25 unit 3-storey, 33 unit 2½-storey of super-link houses, one unit of management office and recreation facilities including swimming pool and guard house. (Estimated Project Cost: RM196 million)

Westside 2, Desa Parkcity, consisting of 1 block of 41-storey condominium and 1 block of 6-storey carpark with recreation facilities. (Estimated Project Cost : RM160 million)

Solaris 2 Dutamas, Kuala Lumpur, consisting of 12 blocks of 6 to 10-storey shop office, 6 blocks of 24-storey service apartment, 2 open commercial elements, and 7-levels of basement carpark. (Project Cost : RM720 million)

Kiara Designer Suites, Mont'Kiara, Kuala Lumpur, consisting of 1 block of 29-storey service apartment, 1 block of 6-storey carpark with recreation facilities and commercial space, and 2-storey of service apartment on top of the carpark. (Project Cost : RM90 million)

Idaman Residence, KLCC, Kuala Lumpur, consisting of 1 block of 34-storey condominium, including 2-storey of recreation facilities and 4-storey of carpark. (Project Cost : RM85 million)

Axis Pandan, Kuala Lumpur, consisting of 1 block of 33-storey and 1 block of 43-storey service apartment link by 10-storey of retail and carpark podium. (Project Cost : RM125 million)

Saville Residence, Kuala Lumpur, consisting of 1 block of 30-storey highrise building, including 3-storey shop office, 7-storey carpark podium and 20-storey service apartment. (Project Cost : RM60 million)

Suasana Bangsar, Kuala Lumpur, consisting of 1 block of 26-storey condominium with recreation facilities and 5 levels of sub-basement carpark. (Project Cost : RM75 million)

Platinum Park, KLCC Kuala Lumpur, consisting of 1 block of 38-storey and 1 block of 50-storey office towers link by 9-storey of retail and carpark podium with 3 levels of basement carpark. (Project Cost : RM300 million)

Giant Distribution Centre, Sepang, consisting of a 150m x 250m steel warehouse with flat floor and high racking, and ancillary buildings. (Project Cost : RM100 million)

TTDI Dualis, Equine Park, consisting of 13 units of 4 ½-storey of Semi Detached Shop Office, 5 blocks of 8-storey Corporate Signature Office (80 units) with 2 levels of basement carpark. (Project Cost : RM66 million)

EXPERIENCE WITH MEINHARDT (MALAYSIA) SDN BHD, KUALA LUMPUR

Director (November 1993 to May 2003)

Menara Genesis, Kuala Lumpur, consisting of one block of 25-storey office cum apartment building with 5-level basement car park. (Project Cost : RM50 million)

Menara Uni.Asia, Kuala Lumpur, consisting of one block of 23-storey office building with 1½- level basement car park. (Project Cost : RM45 million)

Ocean Palm Condominium, Melaka, consisting of three blocks of 33-storey condominiums. (Project Cost : RM100 million)

Billion Court Condominium, Genting Highlands, consisting of three blocks of 26-storey and two blocks of 9-storey condominiums, and one block of 6-storey carpark on hilly terrain. (Project Cost : RM100 million)

Structural Investigation on Komplek Karamunsing, Kota Kinabalu, Sabah.

Kuala Lumpur Sentral Integrated Retail development, consisting of one block of 28-storey hotel and one block of 30-storey service apartment link by 7-storey retail podium with 5-level basement car park. (Project Cost : RM500 million)

Suasana Sentral Condominium, consisting of 2 blocks of 36-storey condominiums, a swimming pool, covered car-parking facilities and a multi-purpose clubhouse. (Project Cost : RM125 million)

Kuala Lumpur Sentral Station, consisting of a central train station and platform, one block of six-storey retail and office building and an elevated deck road. (Project Cost : RM800 million)

Kompleks Chancelor, Universiti Teknologi Petronas, consisting of a 150m diameter column-free steel dome roof at 30m high which covers the resource centre and main hall of the signature building. (Project Cost : RM150 million)

Structural Investigation and Design Checking for Canopy Bridge at Taman Botanic, Putrajaya.

1,228 Beds Psychiatric Hospital Permai At Tampoi, Johor Darul Takzim. (Project Cost : RM500 million)

400 Beds Psychiatric Hospital Amanjaya At Sungai Petani, Kedah Darul Aman. (Project Cost : RM200 million)

Giant Hypermarket At Kelana Jaya. (Project Cost : RM35 million)

EXPERIENCE WITH BYLANDER MEINHARDT PARTNERSHIP PTE LTD, SINGAPORE

Senior Structural Engineer (July 1990 to November 1993)

Suntec City, Singapore - Singapore International Convention and Exhibition Centre, offices, hotel and shopping development at Temasek Boulevard/Temasek Avenue. (Project Cost : S\$1.5 billion)

Responsible for carrying out computer modelling, analysis, design and checking of a structural steel space truss, covering an area of 172.8 m by 144 m for the convention and exhibition centre; and four blocks of 45-storey office buildings, with post-tensioned beam, composite column and reinforced concrete slab and shear/core wall.

The Sovereign Condominium, Singapore. (Project Cost : S\$50 million)

Responsible for carrying out computer modelling, analysis and design of a block of 30-storey condominium, with reinforced concrete slab, beam, column and shear/core wall, and bored pile foundation; coordinating and liaising with owner, government authorities, consultants and contractors and contract administration.

Exchange Square, Bangkok, consisting of one block of 84-storey, one block of 48-storey, one block of 40-storey, three blocks of 33-storey and one block of 32-storey buildings, comprising of offices, hotels, apartments and shopping complex. (Project Cost : US\$700 million)

A member of the design team responsible for carrying out computer modelling, analysis and design, preparing general arrangement drawings and assessing materials choice of the structural elements and pile foundation. Lateral stability analysis was performed based on American UBC85 – Zone 1 Seismic Loadings and Bye-Laws of Bangkok Metropolis Wind Loadings.

Pontiac Marina, Singapore, consisting of two blocks of 45-storey office and two blocks of 30-storey hotel linked by 5-storey of retail podium. (Project Cost : S\$1.65 billion)

Responsible for carrying out computer modelling, analysis and design of post-tensioned beams, reinforced concrete slab and shear/core wall, composite column, and structural steel driven pile foundation; coordinating and liaising with owner, government authorities, consultants and contractors, and contract administration.

150 m long vehicular bridge structure at Bintan Beach International Resort, Indonesia. (Project Cost S\$5 million)

Responsible for carrying out grillage modelling, analysis and design of post-tensioned beams with reinforced concrete slab, diaphragm beam, piers and abutment.

EXPERIENCE WITH BYLANDER WADDELL PARTNERSHIP LTD, LONDON, ENGLAND

Resident Engineer (March 1989 to January 1990)

Thames Exchange, London, consisting of 4-storey (8-split level) of basement car park and 4-storey of superstructure office building. (Project Cost : 65 million sterling pounds)

Responsible for monitoring quality control of Contractor's performance with respect to specified materials, workmanship and construction methods, administering day to day matters arising between Consultants and Contractor on unspecified elements of works, providing regular reports on findings to all parties, maintaining material records on progress of the works, directing the Contractor on additional works/variation to details previously not issued by Consultants, and directing the Contractor on rectification works not complying with the Consultant's specified requirements

Structural Engineer (March 1988 to February 1989)

Uxbridge Offices Refurbishment, Middlesex, consisting of 3 blocks of 7-storey office buildings linked by 2-storey of shopping complex podium. (Project cost : 40 million sterling pounds)

Responsible for checking the adequacy of existing reinforced concrete slab, beam, column and shear/core wall to withstand the new and additional floor loadings layout; designing the strengthen structural elements; carrying out computer modelling, analysis and design of multi-storey structural frame and pile-raft foundation; preparing general arrangement drawings; assessing materials choice and construction methods; and estimating costs.

12-storey St Martin Le Grand Office Building, London. (Project cost : 80 million sterling pounds)

A member of the design team responsible for designing composite beam and slab with profiled steel sheeting.

2-storey Riverhead Shopping Centre Refurbishment, Grimsby. (Project cost : 25 million sterling pounds)

A member of the design team responsible for designing reinforced concrete beam and slab.

EXPERIENCE WITH BMP SDN BHD / MR PERUNDING SDN BHD

Civil / Structural Engineer (October 1985 to February 1988)

Reinforced concrete housing project in Subang, Selangor.

Light industrial reinforced concrete building project in Petaling Jaya, Selangor.

Petronas structural steel gas station in Kota Bahru, Kelantan.

5-storey apartment cum office reinforced concrete building in Kampung Pandan, Kuala Lumpur.

Reinforced concrete housing project in Wangsa Maju, Kuala Lumpur.

Marulee (M) Sdn Bhd structural steel factory in Shah Alam, Selangor.

FRS (M) Sdn Bhd structural steel factory in Shah Alam, Selangor.

Wako Electric Co. Sdn Bhd structural steel factory in Shah Alam, Selangor.

Structural steel rock-core warehouse in Petronas Training Centre, Selangor.

Structural steel spectators stand in Petronas Training Centre, Selangor.

EXPERIENCE WITH YEW CONSULT

Civil / Structural Engineer (January 1985 to September 1985)

Responsible for carrying out the analysis and design of the infrastructure works and reinforced concrete structures of a housing project in Puchong, Selangor.

PUBLICATIONS :

1. Heng T. H., "Earthquake Hazards and Safety of Tall Buildings", IEM/JKR Conference on Landslide, Sinkhole, Structure Failure : Myth or Science ? Ipoh, Perak, 6-7 March 2006.

CURRICULUM VITAE

NAME : **IR NG TAK KEE** **DATE OF BIRTH** : 17th April 1964
PROFESSION : Civil & Structural Engineer **NATIONALITY** : Malaysian
POSITION IN FIRM : Director of G&P Structures Sdn Bhd

KEY EXPERIENCE/SPECIALISATIONS

Twenty Five years of experience in structural and infrastructure engineering work with engineering consultancy firms. Experience in design, documentation and supervision of large residential and commercial building structures, with deep basement and pile foundation, and associated infrastructure works. Possess good communication, leadership and people management skills, and high level of commitment.

Recent assignments include:

Project Director Happy Garden Condominium Development in Kuala Lumpur consisting of 2 blocks of 24-storey condominium & 3-storey car park podium. (Project Cost: RM200 Million)

 Damansara Uptown Phase II, Petaling Jaya consisting of 1 block of 28-storey and 1 block of 30-storey apartment, 1 block of 43 storey office, 1 block of 6 storey retail, 1 block of 20-storey service apartment and 4 levels of basement car park..(Project Cost: RM800 Million)

 Radia, Bukit Jelutong, Shah Alam, consisting of A.) Phase 1 – Phase 4, 2 blocks of 2-9 storey office & shop lot , 1 block of 2 storey shop lot, 3 blocks of 13 storey service apartment, 4 storey basement carpark and tunnel connecting to Phase 5 and 2 storey of podium carpark. B.) Phase 5 – 2 blocks of 5-8 storey office & shop lot , 1 block of 4 storey office with “ Covered Boulevard”, 2 storey basement carpark, 2 storey podium carpark with recreation & landscape park.

QUALIFICATIONS:

Bachelor of Science in Civil Engineering, National Cheng Kung University, Tainan, Taiwan 1983-1987
 Master of Engineering in Structural Engineering, Asian Institute of Technology, Bangkok, Thailand 1993-1995
 Registered Professional Engineer in Structural Engineering, Malaysia
 Member of The Institution of Engineers, Malaysia

LANGUAGE :

English	:	Reading, writing and speaking	-	Good
Bahasa Malaysia:		Reading, writing and speaking	-	Good
Mandarin	:	Reading, writing and speaking	-	Good

EXPERIENCE RECORDS:

EXPERIENCE WITH G&P STRUCTURES SDN BHD

Director (November 2004 - Present)

Radia, Bukit Jelutong Shah Alam, consisting:

A) Phase 1- Phase 4,2 blocks of 2-9 storey office & shop lot, 1 block of 2 storey shop lot, 3 blocks of 13 storey service apartments, 4 storey basement carpark and tunnel connecting to Phase 5 and 2 storey of podium carpark.

B) Phase 5 – 2 blocks of 5-8 storey office & shop lot, 1 block of 4 storey office with ‘Covered Boulevard’, 2 storey basement carpark, 2 storey podium carpark with recreation & landscape park.

(Estimated Project Cost : RM804 million) (2010~present)

Damansara Uptown Phase II, Petaling Jaya, consisting of 1 block of 28-storey and 1 block of 30-storey apartment, 1 block of 43-storey office, 1 block of 6-storey retail, 1 block of 20-storey service apartment, and 4 levels of basement carpark.

(Estimated Project Cost : RM1.2 billion) (2009~present)

Solaris 3, Kuala Lumpur, consisting of 2 blocks of 30-storey office towers and 2 blocks of 6-storey shop offices. 2 blocks of 8 to 12-storey shop office and 3 blocks of 10-12 storey service apartment and 1 block of 5 storey shopping mall.

(Estimated Project Cost : RM1.3 billion) (2007~present)

Happy Garden Condominium, Kuala Lumpur, consisting of 2 blocks of 24-storey condominium & 3-storey car park podium

(Estimated Project Cost : RM268 million) (2010~2015)

Solaris 2 Dutamas, Kuala Lumpur, consisting of 12 blocks of 6 to 10-storey shop office, 6 blocks of 24-storey service apartment. 2 open elements, and 7-levels of basement car park.

(Estimated Project Cost : RM720 million) (2004~2009)

Proposed Covered Boulevard, Renovation and Upgrading Works for Shopping Mall at Solaris 2 Dutamas, Kuala Lumpur on Lot PT 17439, Mukim Batu, Kuala Lumpur

(Estimated Project Cost : RM70 million) (2008~2009)

Ritze II Damansara Perdana, Petaling Jaya, consisting of 3 blocks of 8 to 9 storey apartment on top of a 9-storey podium carpark and commercial area.

(Estimated Project Cost : RM66 million) (2005~2009)

Demolition Works of 24 storey Angkasa Raya, Jalan Ampang, Kuala Lumpur

(Estimated Project Cost RM4 million) (2009~2010)

EXPERIENCE WITH SEPAKAT SETIA PERUNDING SDN BHD 1995~2004:

Associate Director (January 2003 - November 2004)

KLCC Convention and Exhibition Centre, Kuala Lumpur, consisting 5-storey convention and exhibition centre and 2-level basement car park (Project Cost : 570 million) (Turnkey Project)

Project Manager cum Chief Engineer responsible for design of foundation, earthwork, composite floor and etc; administration of the design work; preparing specifications and design brief; reviewing sub-contractor’s alternative design on steel structures and pre-stressing specialist’s post-tensioned flat slab design; coordinating and liaising with the owner, design checkers, turnkey contractors, authorities and other consultants.

Associate (January 2000 - November 2001)

17-storey Office Building with 4-Level Basement Car Park at Lot 2G5 and 2G6, Putrajaya (Project Cost : 250 million) (Turnkey Project)

Project Manager cum Chief Engineer responsible for analysis and design of foundation, earthwork, r.c. and steel structures; administration of the design work; preparing specifications and design brief; reviewing pre-stressing specialist's post-tensioned flat slab design; coordinating and liaising with the owner, turnkey contractor, authorities and other consultants.

Extension and Renovation Works at Istana Alam Shah, Shah Alam, Selangor, consisting 2-storey high column free (Project Cost :70 million) (Turnkey Project)

Project engineer responsible for design analysis of foundation, r.c. and steel structures, underpinning and strengthening works; design and construction documentation; coordinating and liaising with the owner, turnkey contractor, authorities and other consultants.

Senior Engineer (July 1995 – December 1999)

Proposed Construction of a New Terminal Building and Parking Apron at Sultan Ismail Petra Airport, Kota Bharu, Kelantan (Project Cost : 50 million)

Structural engineer responsible for design of foundation, r.c. floors and elevated water tank; coordinating and liaising with other consultants.

Taipan Star Apartment and Office Development, consisting of 1 Block of 32-storey Apartment with 7-level basement mechanical car park and 1 block of 20-storey office with 2-level basement mechanical car park on Lot 1075 and Lot 139, Jalan P. Ramlee, Kuala Lumpur (Project Cost : 75 million)

Project Engineer responsible for carrying out computer modelling, analysis and design the high rise building, top down construction for 21.0m deep excavation, external works, raft foundation, temporary work for earthwork; preparing contract document; contract administration for substructure contract; coordinating and liaising with the owner, contractors, authorities and other consultants.

Southern Bank Group Head Quarter Office, consisting of 7-storey office building with 4-level basement car park on Lot 50574 , Bukit Damansara, Kuala Lumpur (Project Cost : 50 million)

Project Engineer responsible for carrying out computer modelling, analysis and design, temporary work for earthwork, external works; reviewing contractor's design of post-tensioned slab; coordinating and liaising with the owner, contractors, authorities and other consultants.

Avillion Resort Phase II and III, Port Dickson, consisting of one block of 5-storey Main Building, 32 units of double storey chalets on land and 202 units of elevated water chalets (32 million)

Project Engineer responsible for analysis and design of r.c. chalets.

EXPERIENCE WITH HCH CONSULTING ENGINEERS, INC, GUAM, TERRITORY OF USA

Senior Engineer (March 1991 – July 1993)

Proposed 25-storey Guam Leo-Palace Hotel, Guam

Engineer responsible for site inspection, providing technical guidance to the contractors; supervision of casting of pre-cast beam and planks; coordinating and liaising with the contractors and consultants.

Harmon Warehouse Project, Guam, consisting of three units of 8m high r.c. warehouse

Engineer responsible for design and supervision of the warehouses construction using tilt-up method.

Proposed Guam International Air Terminal - Parking and Roadway Expansion Project

Engineer responsible for design of pre-cast pre-stressed elevated pedestrian walkway; re-alignment and widening works for two existing roads linking to the airport.

EXPERIENCE WITH GIBSIN ENGINEERS LTD, TAIPEI, TAIWAN

Engineer (Sept 1987 – March 1991)

Taichung Power Station Phase I Project (2200MW) - Coal Yard Civil Engineering Design

Design Engineer responsible for analysis and design of revetment for reclaimed land, road and drainage at coal storage yard, 30m high surveillance steel tower and etc.

Hsinta Power Station - Waste Water Treatment Plant

Design Engineer responsible for carrying out analysis and design of waste water treatment tank.

Proposed Suao Power Station – Feasibility Study

Assisting Project Manager in preparing Feasibility Study Report on coal handling system and coal storage yard planning.

Talin Power Station - Cooling Water System Improvement Project

Engineer responsible for analysis and design of caissons that forming the cool water system outlet of power plant.

Proposed Bar Mill in China Steel Corporation Phase III Expansion Project

Design Engineer responsible for analysis and design of r.c. structures and pile foundation; coordinating with client and consultants.