COMPANY PROFILE

BRIDGES & BUILDINGS

G&P BRIDGES & BUILDINGS SDN BHD

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BRIDGES & BUILDINGS

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BRIDGES & BUILDINGS

COMPANY PROFILE

G&P BRIDGES & BUILDINGS 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 long span Bridges 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 Bridges & Buildings 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.
As for the bridge engineering, we are one of the first in Malaysia to initialize the implementation of Bridge Information Modelling (Br.IM) using Allplan Bridge software.

BRIDGES & BUILDINGS

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

BRIDGES & BUILDINGS

KEY PERSONNEL

Ir. NG Yun Khiong

Ir. Ng has over 31 years of experiences and is a recognized expert in the field of Bridge and Building Structural Engineering.

In his over 30 years of experience, Ir. Ng Yun Khiong had been actively involved in numerous projects related to long span bridges and high-rise building design nationally. His technical involvement including some of the landmark buildings in Malaysia such as Kuala Lumpur City Center developments, Telekom Headquarter, 500m pier to pier span Cable Stayed Bridge in Johor and 632 meters cable stayed bridge in Muar.

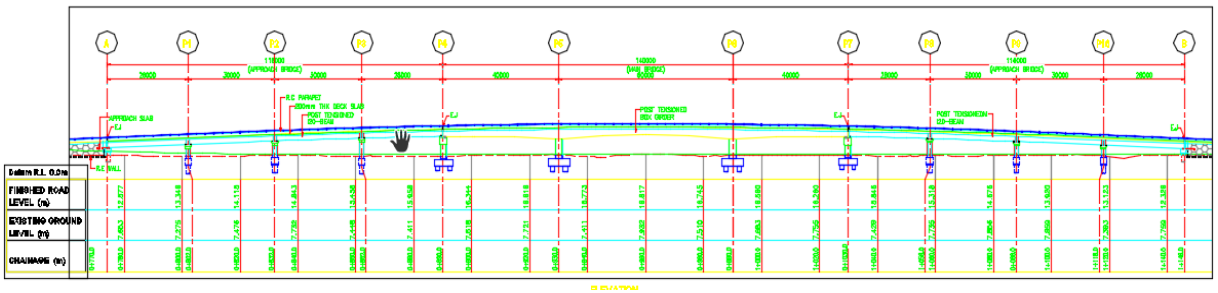
Internationally, he had been involved in design of many bridges and high-rise buildings in Dubai, Qatar, Vietnam, Cape Town and South Africa and Indonesia. By working in collaboration with leading international consulting firms, such as Thornton-Tomasetti Engineers (New York), Socotec Engineers (Paris), COWI Consulting Engineers (Denmark), J.Muller International (Paris), Flour Daniel (USA), LERA Consulting Engineers (New York), he had gained extensive bridge and building engineering experiences through the process of technology transfer.

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

BRIDGES & BUILDINGS

BRIDGE STRUCTURES

Box Girder Bridge – Kota Kinabalu Sabah

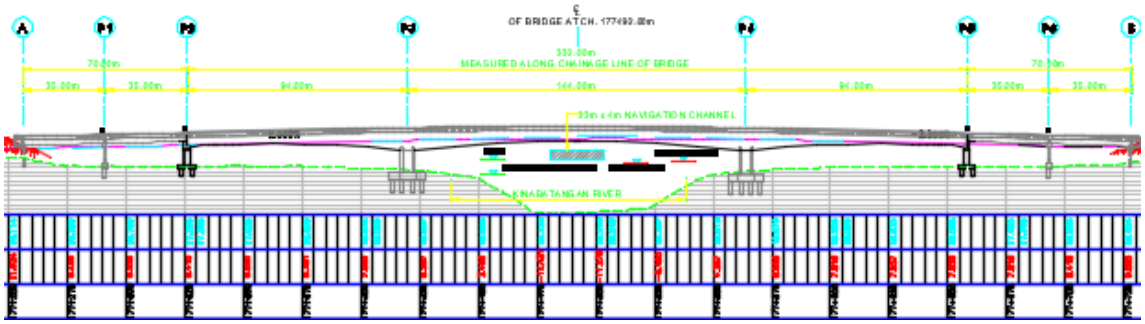


Project Location			:	Kota Kinabalu, Sabah
Project Value			:	RM 50 Million
Project Period			:	Current – Tender Stage
Bridge Type			:	Special Box Girder Bridge 140m (Main span) 372m Total Span
Bridge Load			:	Traffic Load – BD37/01
Type of Services Provided			:	Design Consultant

BRIDGES & BUILDINGS

BRIDGE STRUCTURES

Box Girder Bridge – Kota Kinabalu Sabah

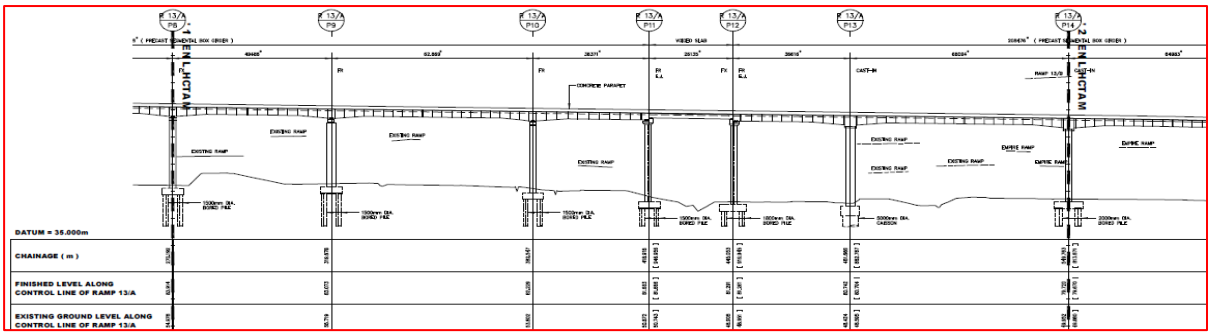


Project Location	:	Kota Kinabalu, Sabah
Project Value	:	RM 80 Million
Project Period	:	Current – Tender Stage (Pan Borneo Sabah)
Bridge Type	:	Special Box Girder Bridge 140m (Main span) 352m Total Span
Bridge Load	:	Traffic Load – BD37/01
Type of Services Provided	:	Design Consultant

BRIDGES & BUILDINGS

BRIDGE STRUCTURES

Highly Curved Precast Box Girder Bridge – DASH, Kuala Lumpur



Project Location	:	Kuala Lumpur
Project Value	:	RM 50 Million
Project Period	:	Current – Construction Stage (DASH)
Bridge Type	:	Special Box Girder Bridge 160m (Main span) 352m Total Span
Bridge Load	:	Traffic Load – BD37/01
Type of Services Provided	:	Sub-Consultant (Design Support)

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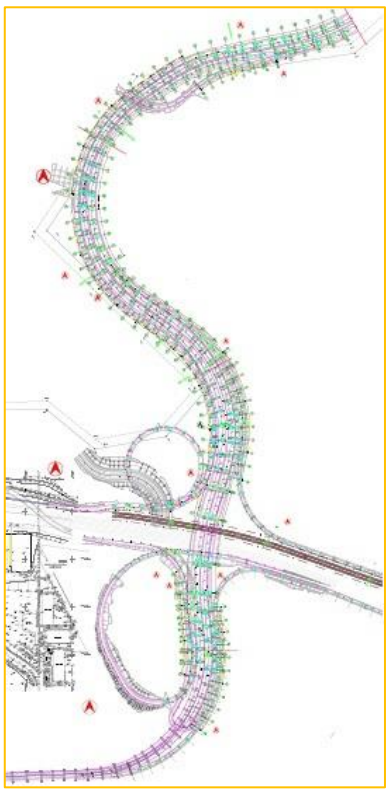
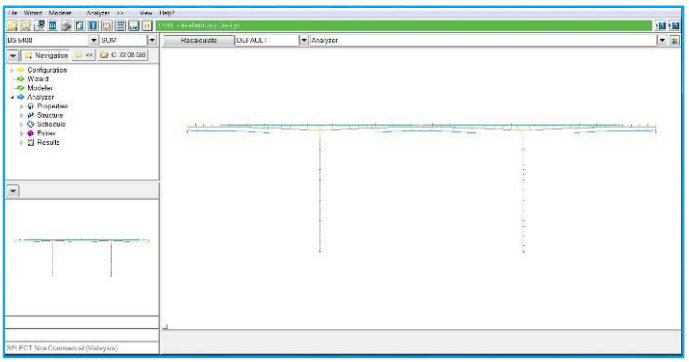
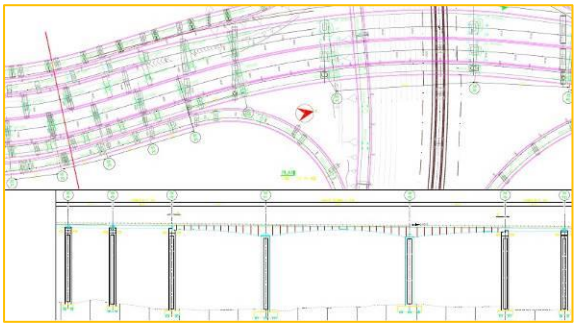
BRIDGE STRUCTURES

SUNGAI BESI – ULU KELANG ELEVATED EXPRESSWAY (SUKE)







Project Location	:	Sungai Besi, Alam Damai, Ampang – Kuala Lumpur Elevated Highway and Kuala Lumpur Middle Ring Road 2
Project Period	:	Construction Stage
Bridge Type	:	Box Girder, Special Crossing:- Ulu Kelang Crossing: 85m – 100m – 85m Sungai Besi Crossing: 63.2m - 97.3m - 64.3m MK40 Crossing: 62.9m - 95.7m - 62.2m
Bridge Load	:	Traffic Load – BD37/01
Type of Services Provided	:	Bridge Modelling, Design, Checking and Superstructure Design Support

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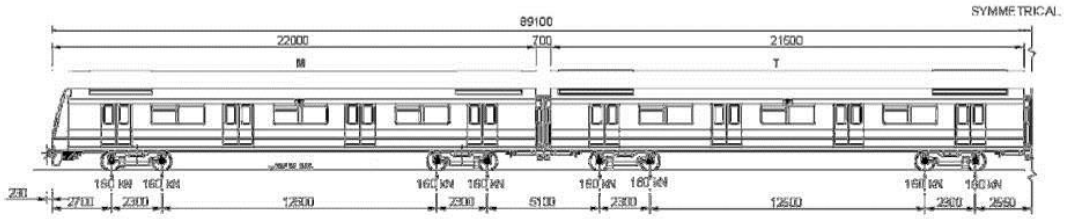
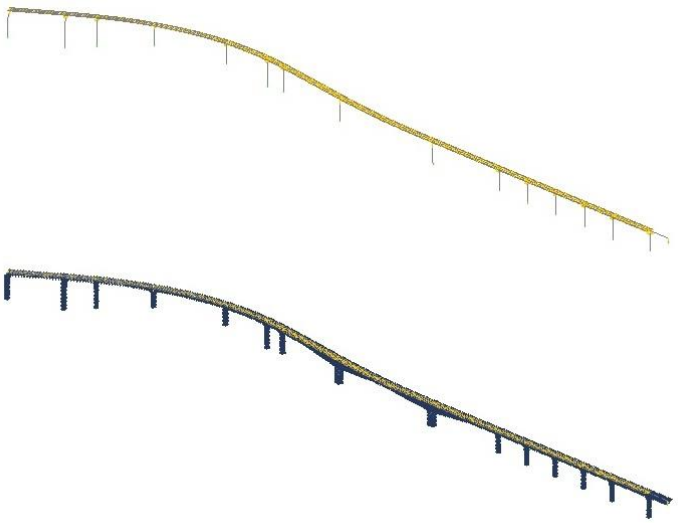
BRIDGE STRUCTURES

MASS RAPID TRANSIT (MRT) LEMBAH KELANG JAJARAN SUNGAI BULOH – KAJANG (PACKAGE V8) - RAIL STRUCTURAL INTERACTION

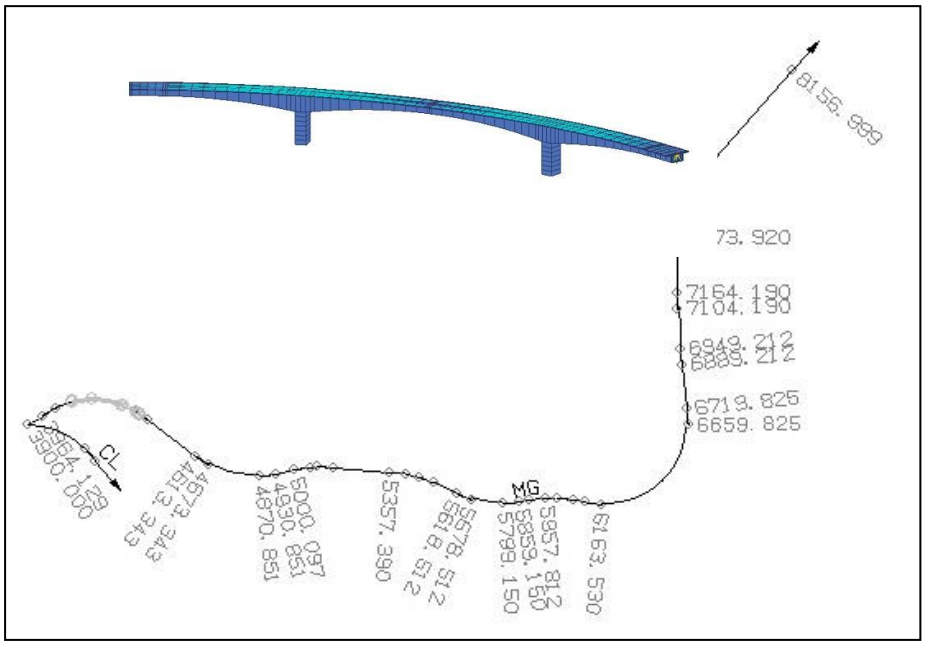


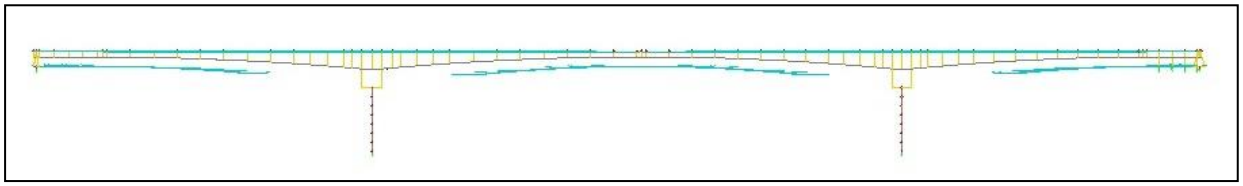


Project Location	:	Sungai Buloh to Kajang
Project Period	:	Completed
Bridge Type	:	Box Girder
Bridge Load	:	Rail Load – UIC 776-3
Type of Services Provided	:	Bridge Modelling, Design, Checking and Advise for Rail Structure Interaction

BRIDGE STRUCTURES

INDEPENDENT CHECKING ENGINEER AND SPECIALIST CONSULTANT FOR PROJECT LANDASAN KERETAPI DARI SUBANG KE TERMINAL SKYPARK SUBANG





Project Location	:	Subang Jaya to Skypark (Subang Abdul Aziz Shah Airport)
Project Period	:	Completed
Bridge Type	:	Box Girder, Special Crossing:- SC1: 72.5m – 115m – 72.5m SC2: 47.5m – 70m – 70m – 47.5m SC3: 40m – 60m - 40m SC4: 40m – 60m – 40m SC5: 90m – 150m – 90m SC6: 40m – 50m -50m – 50m – 40m
Bridge Load	:	Rail Load – UIC 776-3
Type of Services Provided	:	Bridge Modelling, Design, and Checking.

Project Description / Services Provided:

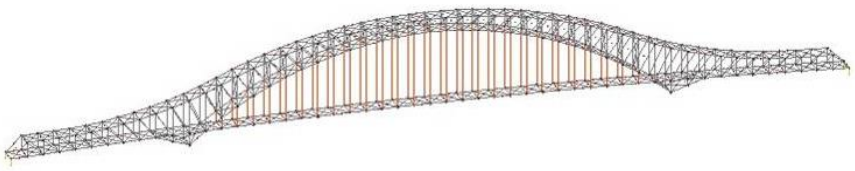
The proposed KTM Komuter of Subang Jaya to Skypark is a 8km extension of the Port Klang Line of KTM Komuter. This extension is a part of the Port Klang Line and will provide a rail connectivity to the airport that is currently only served by other kinds of road transportation. The line being built is 8km long and is slated to have three stations: Glenmarie, Sri Subang, and Subang Skypark.

Our team had been appointed as the advisor to the design team. Working together with the team from the consultants and contractors, the coordination of all parties had been implemented smoothly. The design of the railway bridge girders are cost efficient, and project completed within timeframe.

BRIDGES & BUILDINGS

BRIDGE STRUCTURES

INDEPENDENT CHECKING ENGINEER FOR KUKAR BRIDGE - INDONESIA



Project Location	:	Soekarno Bridge, Indonesia
Project Period	:	Completed
Bridge Type	:	Steel Arch Bridge
Type of Services Provided	:	Independent Checking Engineer and Advise for Overall Advisor for Bridge Design

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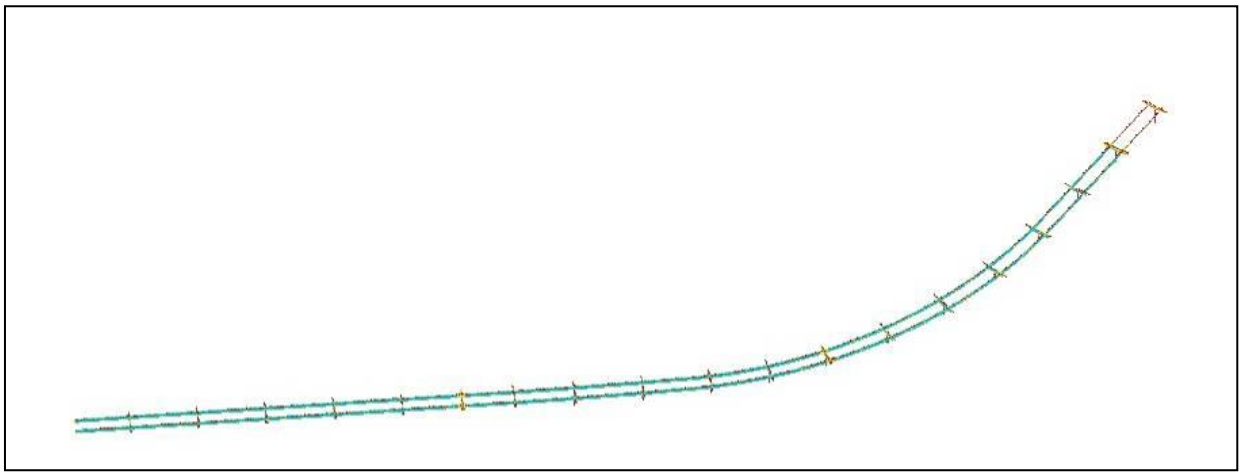
BRIDGE STRUCTURES

INDEPENDENT CHECKING ENGINEER FOR BOGOR RING ROAD – INDONESIA

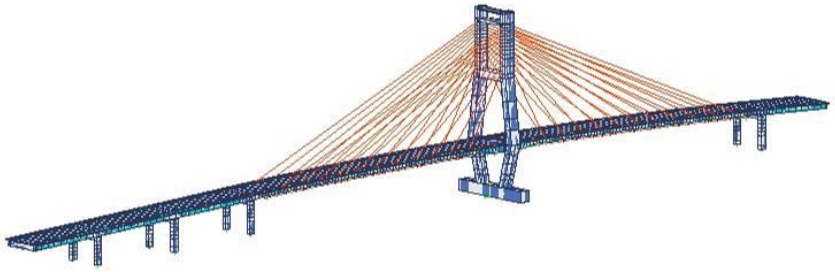


Project Location	:	West Jawa, Bogor Indonesia
Bridge Type	:	Box Girder Bridge with External and Internal Prestressing
Bridge Load	:	AASHTO
Type of Services Provided	:	Sub-Consultant (Box Girder Bridge)

BRIDGES & BUILDINGS

BRIDGE STRUCTURES

INDEPENDENT CHECKING ENGINEER FOR SOEKARNO BRIDGE - INDONESIA

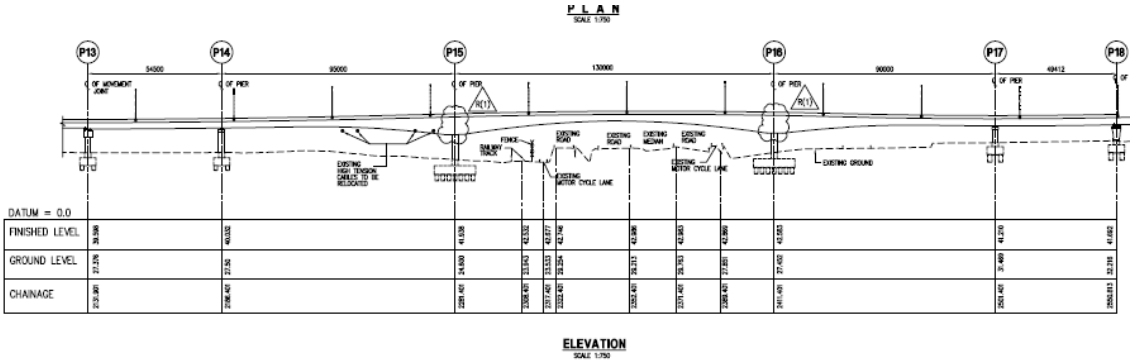


Project Location	:	Soekarno Bridge, Indonesia
Project Period	:	Completed
Bridge Type	:	Cable Stayed Bridge
Bridge Load	:	AASHTO
Type of Services Provided	:	Sub-Consultant (Cable Stayed Bridge Design)

BRIDGES & BUILDINGS

BRIDGE STRUCTURES

INDEPENDENT CHECKING ENGINEER FOR SUBANG KELANA LINK

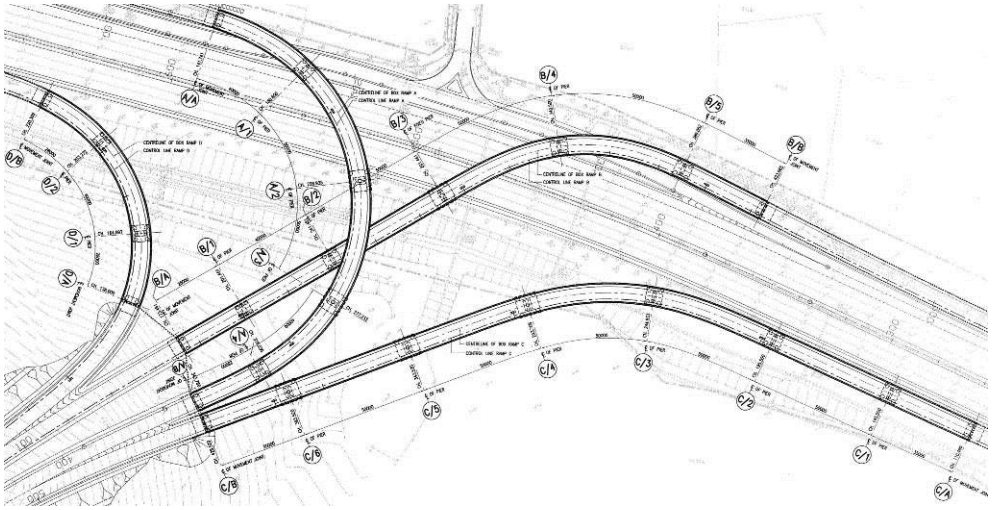


Project Location	:	Subang Jaya, Selangor
Project Value	:	MYR 300 Million
Project Period	:	2002-2006
Bridge Type	:	50m x 95m x 130m x 90m x 50m Box Girder bridge
Bridge Load	:	Traffic Load – BD37/01
Type of Services Provided	:	Independent Checking Engineer
Client	:	Ahmad Zaki Resources Berhad

BRIDGES & BUILDINGS

BRIDGE STRUCTURES

INDEPENDENT CHECKING ENGINEER FOR JALAN ISTANA RAMP



Project Location	:	Jalan Duta, Kuala Lumpur
Project Value	:	MYR 60 Million
Project Period	:	2004
Bridge Type	:	Highly Curved Precast Segmental Box Girder with 250mm in-situ stitch
Bridge Load	:	Traffic Load – BD37/01
Type of Services Provided	:	Independent Checking Engineer
Client	:	Jabatan Kerja Raya Malaysia

BRIDGES & BUILDINGS

BRIDGE STRUCTURES

MUAR BYPASS CABLE STAYED BRIDGE

Director's Experiences in Cable Stayed Bridge Design

During the employment with Ranhill, Ir. NG has been selected to carry out the first single-plan cable stayed bridge in Malaysia. The design was carried out independently in parallel with Jean Muller France and the Ir. NG was in charge of the project from conceptual design until completion of construction.

The project is a turnkey contract awarded by the government (JKR) to Ranhill Corporation Sdn Bhd. The scope include design, build and deliver to the government a 632m long Cable Stayed Bridge with a streamside R.C Box Girder deck and a 13km long road to JKR U5 standard.

This project will provide a 2nd bridge crossing over Sungai Muar and a bypass road for through traffic to alleviate the present traffic congestion at the Muar Town urban center and the existing Sultan Ismail.

Project Location	:	Muar, Johor
Project Value	:	RM304 Million
Project Period	:	March 2001 - June 2004
Bridge Type	:	Cable Stayed Bridge - 132m (Main span) 632m (Total Cable Stayed)
Bridge Load	:	Traffic Load – BD37/01
Type of Services Provided	:	Design and Site Supervision

BRIDGES & BUILDINGS

BRIDGE STRUCTURES

SENAI DESARU CABLE STAYED BRIDGE

Director's Experiences in Cable Stayed Bridge Design

During the employment with Ranhill, Ir. NG has been selected to carry out the one of the longest t single-plan cable stayed bridge in Malaysia, with main span of 500m. The design was carried out independently in parallel with COWI, Denmark and Ir. NG was in charge of the project from conceptual design until completion of construction of the bridge.

As it an in-house design consultant, the challenges were not only the design complexities of the bridge the construction methods also became the major design tasks, as well as construction supports during construction.

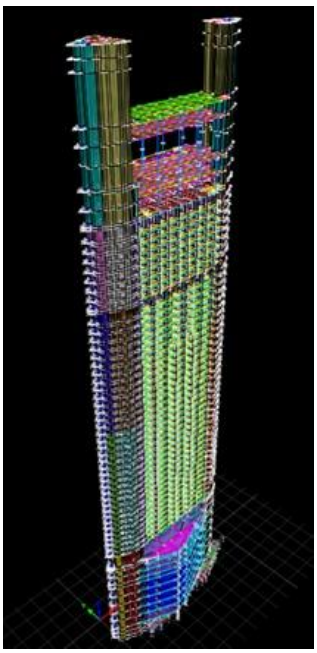
The project is a turnkey contract awarded by the government (JKR) to Ranhill Corporation Sdn Bhd as design and built contract.

Project Location	:	Senai, Johor
Project Value	:	RM 540 Million
Project Period	:	March 2006 - June 2011
Bridge Type	:	Cable Stayed Bridge - 500m (Main span) 2km (Total Cable Stayed)
Bridge Load	:	Traffic Load – BD37/01
Type of Services Provided	:	Design and Site Supervision

BRIDGES & BUILDINGS

HIGH RISE BUILDING / COMPLEX STRUCTURES

ROYAL LEXIS TOWER



Royal Lexis Tower, situated in the heart of Kuala Lumpur, consist of one block of 60-storey consists of serviced apartment and hotel on the upper floors. Our team was commissioned by the Client (KL Metro 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.

As the tower is slender with prestressed transfer plate that transfer more than 50 floors above , the tower is expected to experience 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.

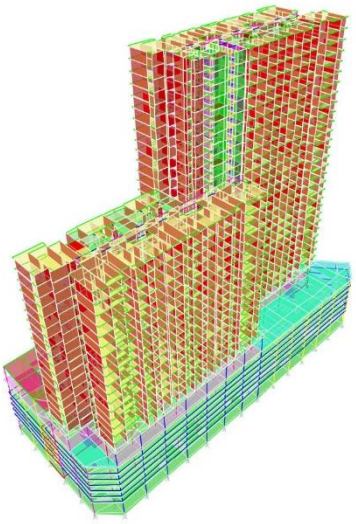
For construction phase, it was essential to obtain data on how the building is actually moving compared to theoretical analysis hence floors was regularly surveyed to gain movement trend.

As the building is considered one of the most slender building in Malaysia with height ratio of more than 18, detailed wind studies have been conducted to meet the human comfort criteria. The design also consider construction method to be implemented to ensure no locked-in stress occur, 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.

BRIDGES & BUILDINGS

HIGH RISE BUILDING / COMPLEX STRUCTURES

Ion Vivace Residence



Ion Vivace Residence, situated in Penang, consist of two blocks of 40-storey serviced apartment. Our team appointed by the Client (NCT Bhd.) as the consulting Civil & Structural Engineers for this prestigious project.

To achieve Architect's design for free serviced apartment and carpark layout at lower 10 floors, prestressed concrete transfer plate was adopted. The transfer plate ranging from 1.2m to 1.5m in thickness, transfer more than 30 floors above. While it is common in the industry to refer to prestressed concrete specialist on the transfer plate design, we have the capacity to carry out the design within the firm.

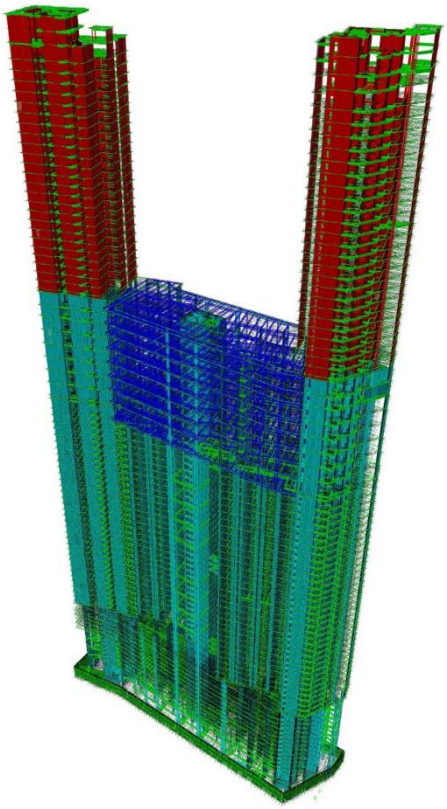
Prestressed plate is adopted for the carpark floor. With fully optimized the usage of prestressed concrete, the material cost of the floors may appear marginally more expensive than that of reinforced concrete system, it is however cost effective where a shallow floor structure system was achieved. With this approach, it translated to significant overall 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. The general misleading on the adoption of prestressed concrete is, prestressed concrete floor is always expensive. Should the design of prestressed concrete is optimized, apparently the overall cost appear to be cost effective.

Another common concern of adopting of prestressed concrete is the inflexibility renovation works which involves drilling. The common prestressed concrete adopted in this region is using grouted tendon system, where all tendons are grouted after stressing.

BRIDGES & BUILDINGS

HIGH RISE BUILDING / COMPLEX STRUCTURES

M101 TOWER



M101 Tower, situated in the heart of Kuala Lumpur which consist of two blocks of 78-storey connected with a sky bridge. Our team was appointed by the Client (M101) as the Independent Checking Engineers for this prestigious project.

The two-tower project boasts a Ferris wheel positioned on the 52nd level, and at its highest vantage point, it will provide a view from 220 meters above ground, which is considered one of the unique attraction in Malaysia.

During the construction stage, there were several complicated ground conditions encountered that required design changes on the foundation. Our team was appointed to look into the value engineering on the overall substructure and superstructure design. With good working collaboration with the structural design consultant Meinhardt (M) Sdn Bhd, our team managed to carry out an extensive value engineering exercise. The project budget was finally achieved through good working relations and constructive advices from our team, as well as corporative supports and contributions from the design consultant itself.

This project serves as a good example of team works, either it is within the firm or among the consulting firms, by gathering the full resources and technical knowledges to deliver the optimized solutions to the Clients.

BRIDGES & BUILDINGS

HIGH RISE BUILDING / COMPLEX STRUCTURES

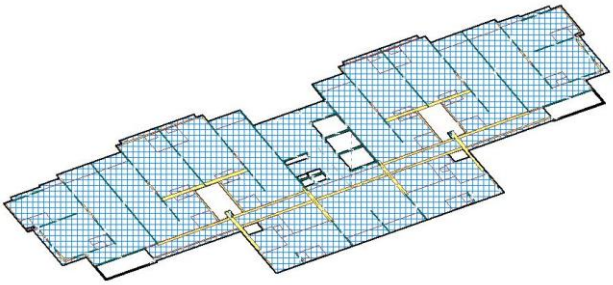
MIXED DEVELOPMENT – COVA VILLA & COVA SUITE

Cova Kota Damansara, situated in the fast-growing suburb of Kuala Lumpur, consist of 3 blocks of 18-storeys, 3 blocks of 19-storeys and 1 block of studio apartment.

One of the most unique challenges for the project is the use of Prestressed Concrete in residences buildings. It is arguable in the industry that the use of Prestressed Concrete should be restricted to residence building due to the common mindset where prestressed is expensive and always leads to serviceability issues such as crack and leaking. It was during the time when price of reinforcements reaches almost double of the prices. The main contractor of the project selected to surrender the project back to the client which causes a severe costs overrun.

Ir. Ng was commissioned to “rescue” the project. Due to the short span of the layout, a balanced design approach using Prestressed was adopted. While the use of prestressed is minimal as the span are rather short, the reinforcement contents of the floors have been brought down tremendously by applying a slight higher prestressed forces.

With the implementation of this balanced design approach, the team managed to save the feasibility of the project by bringing down the construction costs to manageable level.



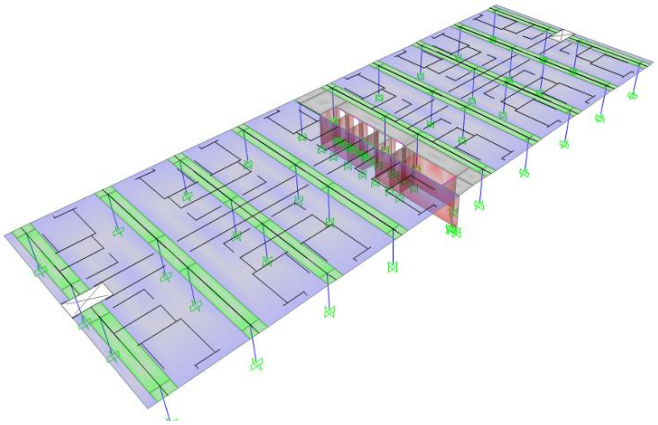
BRIDGES & BUILDINGS

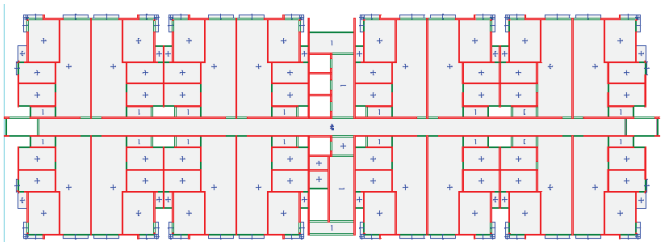
HIGH RISE BUILDING/ COMPLEX STRUCTURES

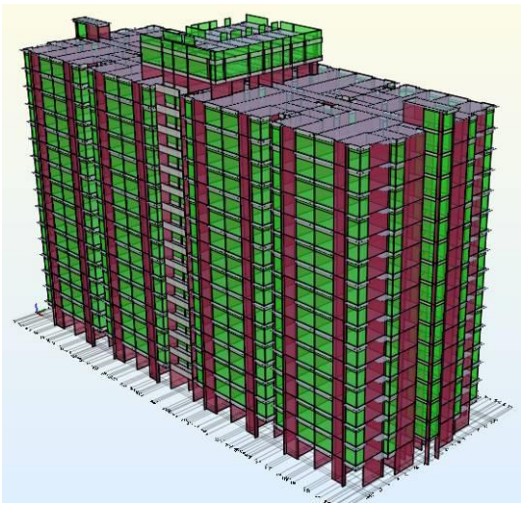
UNICORN TOWER, KOTA KINABALU

The Unicorn Tower development consist of 3 Blocks 16-Storey condominium (768 Units) at Jalan Bundusan, District Of Penampang, Kota Kinabalu Sabah.

Our team had been engaged as leading consultant for this project. The scope of work comprise of concept development; detail structural design and site supervision. The project status is under construction stage currently.







BRIDGES & BUILDINGS

HIGH RISE BUILDING / COMPLEX STRUCTURES

TITANIUM TECHNOLOGY PARK, PENAMPANG, SABAH

Titanium Technology Park comprises of 112 units showroom offices and 58 units triple-volume lower ground warehouse, which are erected on a 10-acre prime industrial land in Penampang, Sabah. It is the first of its kind light industrial warehouse development in Sabah, which enables the upstream and downstream businesses of a firm to be integrated as one under one single roof.

The scope of work comprise of design optimization in structural floors and retaining wall systems. The project status is under construction stage currently.

BRIDGES & BUILDINGS

HIGH RISE BUILDING / COMPLEX STRUCTURES

DEVELOPMENT OF 34 STOREY SERVICED SUITES / HOTEL AT YANGON, MYANMAR

The proposed development of 34-Storey Serviced Suites & Hotel consist of 4-Storey facilities with restaurant, café, lounge, recreation areas, office, gym, and spa and function room, 6-Storeys car parks with semi basement, 23 Storeys service suites and hotel and 1 Storey penthouse suites.

Our team had been engaged for the development of structural system for the building.

HIGH RISE BUILDING / COMPLEX STRUCTURES

DAMANSARA FORESTA (PHASE 2), KUALA LUMPUR

The Damansara Foresta Phase 2 consist of 2 Blocks of 36-storey condominiums, situated in the heart of Kuala Lumpur.

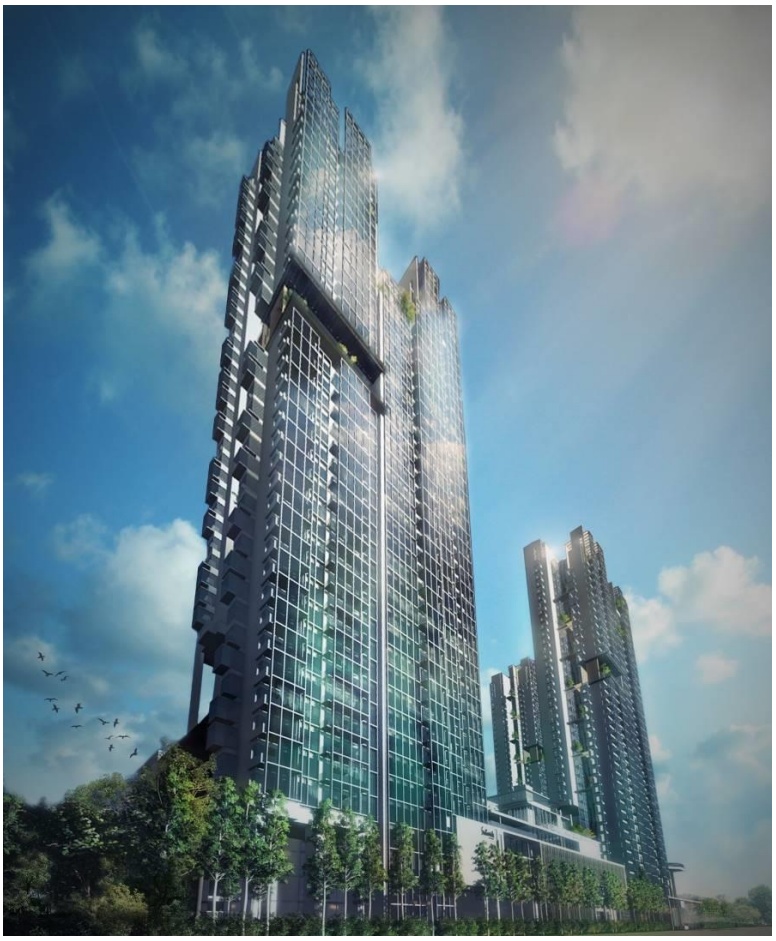
Our team was appointed by the Client (Land & General Bhd.) as Independent Checking Engineers out value engineering exercises and carried for this prestigious project.

With good working collaboration with the structural design Perunding KTP (M) Sdn Bhd, our team managed to carry out an extensive value engineering exercises which managed to reduce the overall construction cost of the project. The cost saving exercises was finally achieved through good working relations and constructive advices from our team, as well as corporative supports and contributions from the design consultant itself.

BRIDGES & BUILDINGS

HIGH RISE BUILDING / COMPLEX STRUCTURES

ASTORIA AMPANG, KUALA LUMPUR



The Astoria comprises of four condominium blocks of 46-storeys in height.

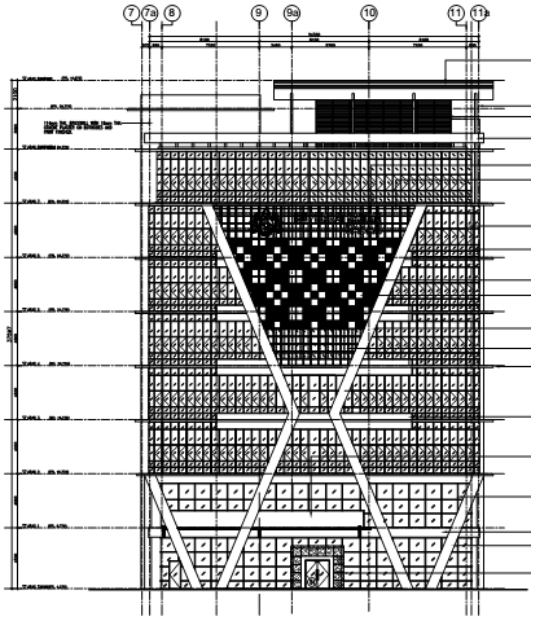
With the success of value engineering exercises for the Foresta II, our team was again appointed by the Client (Land & General Bhd.) as Independent Checking Engineer to carry out the same exercises for this prestigious project.

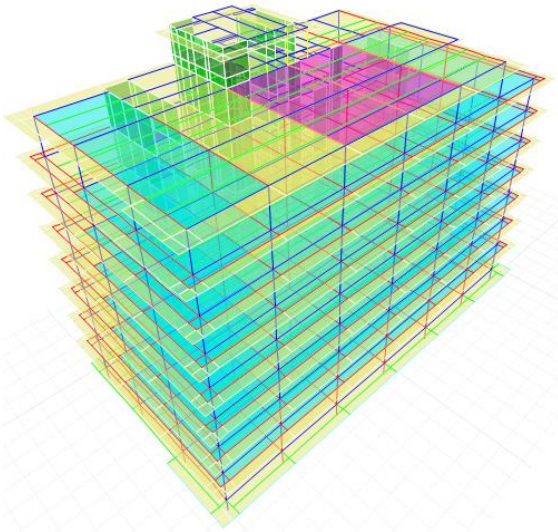
With good working collaboration with the structural design Perunding APEC Sdn Bhd, our team managed to carry out an extensive value engineering exercises which managed to reduce the overall construction cost of the project.

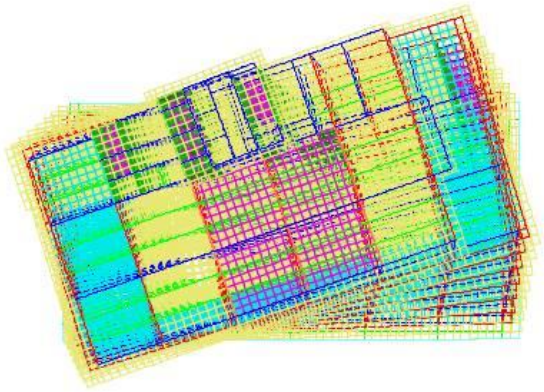
BRIDGES & BUILDINGS

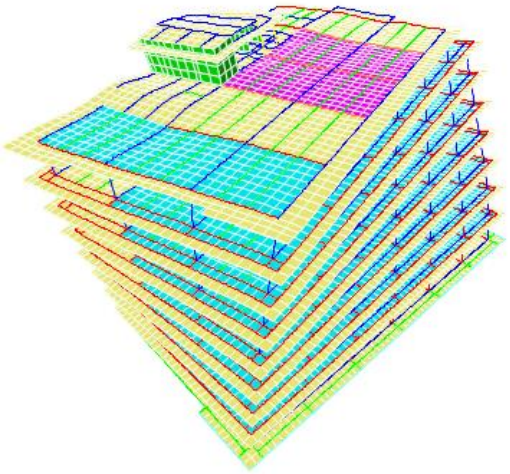
HIGH RISE BUILDING / COMPLEX STRUCTURES

MALAYSIAN ROYAL CUSTOM HEADQUARTER, SABAH









The Malaysian Royal Custom Headquarter are situated at Jalan Sulaman By-Pass (Jalan UMS); Kota Kinabalu; Sabah; Malaysia.

As a responses to the 6.0 magnitude earthquake occurred in Kota Kinabalu on 5th June 2015; the City Hall of Kota Kinabalu (DBKK) has requested all newly develop public and high-rise building to include seismic analysis.

Upon requested by client, our team had carried out earthquake verification for building structure. A comprehensive earthquake analysis, adopting site response spectrum analysis, according to recommendation from Eurocode 8 -2004 was conducted. This project became the first comprehensive earthquake for building in Malaysia, which being approved by Jabatan Kerja Raya Malaysia.

BRIDGES & BUILDINGS

HIGH RISE BUILDING / COMPLEX STRUCTURES

Maxis Tower- KLCC

Director's Experiences in High Rise Buildings Design

During the employment with Ranhill, Ir. NG had led a team of structural engineers to design and supervision of the 60-storey Maxis Tower at the heart of Kuala Lumpur City Center. It was one of the first office building in Malaysia to adopt Post-tensioned banded beams system. The usage of prestressed concrete had proven more efficient in term of time and cost.

Ir. NG, led a team of 5 structural engineers, managed to complete the project from conceptual design until completion of construction.

BRIDGES & BUILDINGS

HIGH RISE BUILDING / COMPLEX STRUCTURES

Telekom Tower- Kuala Lumpur

Director's Experiences in High Rise Buildings Design

During the employment with Ranhill, Ir. NG had led a team of structural engineers to design and supervision of the 310m Telekom Tower at the heart of Kuala Lumpur City Center. It was Post-tensioned banded beams system, with special design with taper beam-column interface to accommodate the M&E services passage. The usage of prestressed concrete had proven more efficient in term of time and cost.

Ir. NG, led a team of 8 structural engineers, managed to complete the project from conceptual design until completion of construction.

INNOVATION AND VALUE ADDING

STRUCTURAL INNOVATION

G&P Bridges and Buildings 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 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) & BRIDGE INFORMATION MODELING (Br.IM)

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.

ALLPLAN
A NEMETSCHEK COMPANY

The firm recognizes the importance of intelligent engineering model-based in the future and therefore looks beyond the current BIM. The firm currently associated with Allplan Germany, which provides an alternative BIM system and software in the market. Besides Building, Allplan Bridge also being implemented as intelligent model based design process, Bridge Information Modeling (Br.IM), which the firm is currently promoting for the future design of bridges in Malaysia.

This is part of the firm's commitments to utilize to latest technologies and knowledge to provide the most efficient and optimized solutions to the clients, in both bridges and buildings industries.

BRIDGES & BUILDINGS

CURRICULUM VITAE

NAME	:	IR. NG YUN KHIONG	**DATE OF BIRTH** :	11 November 1964
PROFESSION	:	Bridge & Structural Engineer	**NATIONALITY** :	Malaysian
POSITION IN FIRM	:	Managing Director of G&P Bridges & Buildings Sdn Bhd		

KEY EXPERIENCE/SPECIALISATIONS:

Over 30 years of experience in numerous projects related to long span bridges and high-rise buildings designs. Technical involvements include some of the landmark buildings in Malaysia such as Kuala Lumpur City Center developments, Telekom Headquarter, 500m pier to pier span Cable Stayed Bridge in Johor and 632m meters cable stayed bridge in Muar.

Internationally involved in design of many bridges and high-rise buildings in Dubai, Qatar, Vietnam, Cape Town and South Africa and Indonesia. Working in collaboration with leading international consulting firms, such as Thornton-Tomasetti Engineers (New York), Socotec Engineers (Paris), COWI Consulting Engineers (Denmark), J.Muller International (Paris), Flour Daniel (USA), LERA Consulting Engineers (New York). Extensive bridge and building engineering experiences have been gained throughout the process of technology.

Recent assignments include:

Project Director

300m Box Girder Bridge – Dongongong Flyover Kota Kinabalu Sabah
600m Box Girder Bridge – Bridge Over Sungei Kinabatangan Sabah
60-Storey- Royal Lexis Kuala Lumpur
40-Storey- Mixed Development Pinang

QUALIFICATIONS:

Bachelor of Science in Civil Engineering, (USA)
Registered Professional Engineer, Malaysia.

LANGUAGES:

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

EXPERIENCE RECORD:

Major Bridge projects involved

Penang Undersea Tunnel Project – Pinang, Malaysia

Bridge Consultant for the Penang undersea tunnel project consists 3 major expressways with elevated viaducts structures and a 7.2 km undersea tunnel.

Key role includes the overall feasibility of the project. Design and Review roles include the first phase of the projects with an elevated 5.7 km Ayer Itam-Lebuhraya Tun Dr. Lim Chong Eu By-Pass.

Kinabatangan Box Girder Bridge: - Pan Borneo Highway, Sabah

Bridge consultant for the design of the 600m box girder bridge with main span of 160m. This bridge is part of the

Pan Borneo Sabah Highway development. The bridge will be the longest box girder bridge in Sabah. This bridge is the first bridge to be designed to cater for the latest earthquake data, with extensive earthquake risks studies being carried out. The bridge design includes a comprehensive on site responses study coupled with detailed earthquake response spectrum analysis.

Pulau Balang Cable Stayed Bridge- Sumatra, Indonesia

Independent reviewer for the 350m Pulau Balang cable stayed bridge in Sumatra, Indonesia. The bridge was reviewed comprehensively on behalf of the contractor Hutama Karya. As this is an earthquake active zone, a 3-dimensional time history analysis was carried out based on the actual earthquake time-accelerations data, as well as the adopted design curves.

Extensive ground studies had been carried using 6x6 stiffness matric and non-linear analysis.

Kukar Suspension Bridge-Indonesia

Acted as independent reviewer for the 710m Kukar suspension bridge in Indonesia. Following the failure of the proposed 710m suspension bridge during construction, Ir. NG had been invited to carry out a post-failure study of the bridge. A team of bridge engineer was formed with extensive studies.

Subsequently, a new bridge concept was proposed by adopting a 400m Steel Arch Bridge.

Electrified Double Track Railway Project from Ipoh to Padang Besar, Malaysia

Chief railway bridge engineer for the Electrified Double Track Railway Project from Ipoh to Padang Besar. This was one of the first modern railway project in Malaysia. The railway crossing several major bridges. Due to the sensitivity of the rail-structure interaction for bridge crossing. An extensive rail-structure dynamical analysis had been conducted using the latest technology.

With this task completed, Ir. NG become the pioneer in this field and had completed several similar projects in the country.

KTM Railway Bridge- Subang to Skypark Terminal, Malaysia

Appointed as Independent Checker for the KTM Railway Bridges from Subang to Skypark Terminal. This project was carried on behalf of KTM, Malaysia. The review was carried out using the railway standard with extensive study being carried on the train loadings behaviour on a long span bridge girder. As several long span crossing up to 150m, the dynamical behave became critical and important in the design considerations.

Ir. NG had conducted the rolling stock analysis for the bridge structure coupled rail-structure interaction analysis. Several recommendations had been proposed to improve the safety and serviceability of the bridge structures, yet to reduce the overall cost of material.

Muar-By Pass Cable Stayed Bridge- Malaysia

Ir. NG led the team, from conceptual design until the completion of construction, to carry out one of the first iconic cable stayed bridge in Muar, Johor. The 632m cable stayed bridge becomes the iconic bridge design not only in Muar but also the first of its kind in Malaysia, by adopting single plan cable over a deck width of more than 20m. The deck section, adopting the basic Strut and Tie concept in structural engineering, coupled with the usage of pre-stressed tendons, allows the usage of thinnest concrete section that save concrete as well as reducing the foundation loads substantially.

The construction method, also being one of its kind in Malaysia, adopts a propped cantilever using a traveling truss. Piers and deck shape were designed and being considered using this construction method. With this construction method, the temporary structure was reduced tremendously.

Senai-Desaru Cable Stayed Bridge - Malaysia

With completion of the Iconic Muar Cable Stayed Bridge, Ir. NG again led the team of bridge engineer from conceptual design until the complete construction of the Senai-Desaru Cable Stayed Bridge in Malaysia.

The bridge, initially planned for 1 km pier to pier span, was subsequently reduced to 500m due to budget constraints. However it managed to retain the longest single plan cable stayed bridge at the time of completion.

With the adoption of composite steel sections at the main span, and pre-stressed concrete section at the approach-spans, the load balancing becomes efficient which save construction material substantially.

Externally pre-stressing was adopted during the construction stages, which is considered as the first of its kind of construction method implemented in Malaysia, to optimize usage of material.

The approach spans were launched based on self-moving incremental method, again the first construction method in Malaysia, which minimized column movements and moments during construction.

Sutong Cable Stayed Bridge – Shanghai, China

During the early career, Ir. NG had been involved in the advanced bridge analysis for long span bridges, includes the Sutong Cable Stayed Bridge, which was considered one of the longest cable stayed bridge in the world at the time, in collaborations with Austrian Bridge expert TDV and COWI Denmark. He was seconded to COWI office for more than 1 years.

Stonecutter Cable Stayed Bridge – Hong Kong, China

During the early career, Ir. NG had been involved in the advanced bridge analysis for long span bridges, includes the Stonecutter Cable Stayed Bridge in Hong Kong which was considered one of the longest cable stayed bridge in the world at the time, in collaborations with Austrian Bridge expert TDV and COWI Denmark

Subang-Kelana Elevated Box Girder, Malaysia

Appointed as Independent Checking Engineer for the Subang-Kelana Jaya elevated Box Girder Bridge. The bridge designer was MMSB.

Istana Negara Elevated Box Girder, Malaysia

Appointed as Independent Checking Engineer for the Subang-Kelana Jaya elevated Box Girder Bridge. The bridge designer was MMSB.

Major Building projects involved

60-Storey Maxis Tower at KLCC, Malaysia

Ir. NG had completed a 60-storey office, Maxis Tower at KLCC, from the conceptual design until the completion of construction. The tower was design using pre-stressed concrete slabs and beam using banded beams system. He was one of the first engineer in Malaysia to adopt pre-stressed concrete to buildings, particularly on the high-rise buildings and was proven cost effective.
In addition, this building also served as one of the first construction method adopting Table Form at that time.

70-Storey Telekom Headquarter, Malaysia

Ir. NG had completed a 70-storey office, Telekom Headquarter, from the conceptual design until the completion of construction. The tower was design using pre-stressed concrete slabs and beam using banded beams system.

As the building shape is rather unique, the building behaviour became challenging to the structural engineer. As it is common for structural engineer to conceptualize a system that is close enough prior to the conduct of wind tunnel test, Ir. NG managed to carry out a desk study analysis for the lateral system design. The actual wind analysis was carried out only during the tender stage, which was found within 85% of the accuracy.

70-Storey M101 Tower, Malaysia

Ir. NG had appointed as Independent Checker for the 70-storey M101 Towers in Kuala Lumpur, Malaysia. The design Architect is Veritas and Design Engineer is Meinhardt. He played a key role in construction method, and cost optimization as well as value engineering.

60-Storey Lexis Tower, Malaysia

Ir. NG had been involved in developing the structural concept and design the 60-storey Lexis Tower at Jalan Sultan Ismail. Once completed, it will be one of the most slender building in Malaysia with slender ratio of more than 18. Human comfort level becomes critical design issues, especially at the sky-bar on the top of the towers.

70- Storey Oxley Towers, Malaysia

Ir. NG had been involved in developing the structural concept of the unique buildings shape. Extensive steel structure is adopted for the tower connections on high elevation, which subjects high wind speed. Human comfort level becomes critical design issues, especially at the sky-bar on the top of the towers.

61- Storey CMHS Towers, Malaysia

Ir. NG had been involved in developing the structural concept.

48- Astoria, Jalan Ampang, Malaysia

Ir. NG had appointed as Structural Independent Checker for the 48-storey Towers in Kuala Lumpur, Malaysia. He played a key role in cost optimization as well as value engineering.

Many Highrise Buildings in Malaysia and Overseas

Some of the building projects include:-

- 40-storey Vivace mixed development, Penang
- 56-storey Fairmount Hotel KLCC
- 66-storey Aurora Tower, Kuala Lumpur
- 50-storey Cecil Central Residence, Kuala Lumpur
- 40-storey Selesta Towers, Malaysia
- 35-storey mixed development, Abu Dhabi UEA
- 20-storey Mon't Kiara Hospital, Kuala Lumpur
- 30-storey office Tower, Vietnam
- 10-storey mixed development, Tripoli Libya
- 10-storey housing development, Cape Town, South Africa

Selected Projects on Steel Structure

- WTM microchips high-tech factory at Kulim, Kedah
- UMW heavy industry factory, Serendah
- Sisma Jaguar/Volvo factory, Selangor
- 30-storey office Tower, Cambodia
- 20-storey proposed Felcra Tower, Selangor

Dam & Port Project

- Papar Dam, Sabah
- Sapangar Port Extension