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| 1. **INTRODUCTION**
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I am Engr. Dr. Ahmad Albab, AAE, ICIOB, C.Eng, M.ASCE, Grad.M.S.E.T, the Senior Lecturer at UTM RAZAK School of Engineering and Advanced Technology. I obtained my Bachelor of Engineering (Civil) awarded by Universiti Teknologi Malaysia Johor in 2003; Master of Engineering Project Management from The University of Melbourne, Australia in 2004 and Doctor of Philosophy from Universiti Teknologi Malaysia Johor Bahru in Civil Engineering in 2009. With my main research area in Construction Engineering, my current research interest is in Reinforced Concrete.

I have been recognized for my outstanding research and development (R&D) contributions to the area of Construction Engineering including awarded as the **Associate ASEAN Engineer by ASEAN Federation of Engineering Organisation (AFEO)** in 2009 and **nominated for “National Young Scientist Award 2013”** by Ministry of Science, Technology and Innovation (MOSTI), Malaysia). I have been extensively involved in 15 research projects which has led to the award of **“Best Group in Research Grants Procurement 2012″**. I have **published more than 60 articles** in impact/indexed journals, indexed conference proceedings (despite being invited as the keynote speaker of the conference), monographs and books. My expertise in the area of Construction Engineering is recognized globally as I am also appointed as **reviewer for more than 5 local and international journals**. My specialization is also recognized by the industry and community where my intrinsic interest in the teaching and learning of Civil Engineering particularly in my area of specialization in promoting interest in Civil Engineering amongst school children as a possible career choice making me to be invited as the **Petrosains Engagement Talk regular speaker** by Special Project Division, Centre of Learning, Petrosains Sdn. Bhd. since 2011.

  **1 of my PhD students has graduated in 2013** where till date, I have been **supervising 10 PhD and 13 Master candidates** in various areas of Civil Engineering, Mechanical Engineering, Business Management, Human Resources, Quantity Surveying, Information Technology etc which necessitate the fundamental elements adoption and integration of Construction Engineering.

My specialization in Construction Engineering and my active participation in various local and international organisations activity have eventually promote interest amongst the industry stakeholders to appoint me in holding important positions in professional organizations, namely **the Council Member of Malaysia Asset and Project Management Association (MAPMA), the Affiliate Member of the Chartered Institute of Building (CIOB) UK** and **Committee of Project Management Technical Division (PMTD) of The Institution of Engineers Malaysia (IEM),** despite other professional memberships locally and internationally. I also demonstrate strong industrial relationships with Complex Project Management Branch (PROKOM), PWD Professional Association of Malaysia (ProJKRM) and Public Works Department (PWD) where I have been invited as keynote speaker/resource person in many of the organisations’ conference/seminar/workshop.

I have taught Diploma, Bachelor Degree and Master courses ranging from Civil Engineering, Architecture, Regional and Urban Planning as well as Urban Design, namely Soil Mechanics, Civil Engineering Laboratory 1 and 2, Geotechnical Engineering, Mechanical and Electrical System, Project Management and Construction Practice, Urban Engineering, Building Services 1, Engineering Mechanics, Civil Engineering Project Management, Infrastructure Design Project (Capstone I), Business for Engineers, Engineers in Society, Research Methodology for Urban Design, Master’s Project, Sustainable Construction and Design and Project Management. Despite teaching at UTM, my significant contribution to teaching, learning (T&L), research and development has also brought me to the appointment as the **Visiting Lecturer at 2 public universities**; the Universiti Pertahanan Nasional Malaysia, Kuala Lumpur (UPNM) (2011-2012) and University of Technology MARA (2012-2013).

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| 2. WORKING EXPERIENCE |

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| **Duration** | **Position** | **Name of Employer** |  **Immediate Superior** |
| May 2003 – August 2004 | Post graduate student of Master of Engineering (Project Management) | The University of Melbourne, Australia | Ir. Dr. Kassim Baba, MIEM No 8777, Senior Lecturer, UTM RAZAK School of Engineering and Advanced Technology, UTM KL |
| September 2004 -November 2006 | Post graduate student of PhD (Civil Engineering) | Universiti Teknologi Malaysia, Johor Bahru | Ir. Dr. Kassim Baba, MIEM No 8777, Senior Lecturer, UTM RAZAK School of Engineering and Advanced Technology, UTM KL |
| December 2006 – November 2007 | Associate Lecturer (cum part-time post graduate student at UTM) | Taylor’s College Petaling Jaya, Selangor | Ir. Dr. Kassim Baba, MIEM No 8777, Senior Lecturer, UTM RAZAK School of Engineering and Advanced Technology, UTM KL |
| December 2007- February 2010 | Lecturer | Universiti Teknologi Malaysia, Kuala Lumpur | Ir. Dr. Kassim Baba, MIEM No 8777, Senior Lecturer, UTM RAZAK School of Engineering and Advanced Technology, UTM KL |
| March 2010 - August 2010 | Senior Lecturer | Universiti Teknologi Malaysia, Kuala Lumpur | Ir. Dr. Kassim Baba, MIEM No 8777, Senior Lecturer, UTM RAZAK School of Engineering and Advanced Technology, UTM KL |
| September 2010 – February2011 | Trainee C&S Engineer | IJM Construction Sdn. Bhd., Grand Hyatt KL Site Project, Jalan Pinang, Kuala Lumpur | Mr. Beh Lai Seng, Senior Project Manager, IJM Construction Sdn. Bhd. |
| March 2011 – August 2011 | Trainee C&S Engineer | KTA Tenaga Sdn. Bhd., D1-21, Jalan PJU 1/41, Dataran Prima, Kelana Jaya, 47301 Petaling Jaya, Selangor | Ir. Lee Chau Kuang, MIEM No. 10906, Head of C&S Department cum Director, KTA Tenaga Sdn. Bhd. |
| September 2011 – February 2012 | Visiting Senior Lecturer | Universiti Pertahanan Nasional Malaysia, Kuala Lumpur | Ir. Dr. Kassim Baba, MIEM No 8777, Senior Lecturer, UTM RAZAK School of Engineering and Advanced Technology, UTM KL |
| March 2012 – April 2012 | Visiting Senior Lecturer | Universiti Teknologi MARA, Shah Alam | Ir. Dr. Kassim Baba, MIEM No 8777, Senior Lecturer, UTM RAZAK School of Engineering and Advanced Technology, UTM KL |
| May 2012 – February 2013 | Senior Lecturer cum IT Manager | Universiti Teknologi Malaysia, Kuala Lumpur | Ir. Dr. Kassim Baba, MIEM No 8777, Senior Lecturer, UTM RAZAK School of Engineering and Advanced Technology, UTM KL |
| March 2013 – August 2013 | Visiting Senior Lecturer | Universiti Teknologi MARA, Shah Alam | Ir. Dr. Kassim Baba, MIEM No 8777, Senior Lecturer, UTM RAZAK School of Engineering and Advanced Technology, UTM KL |
| September 2013 - present | Senior Lecturer cum IT Manager | Universiti Teknologi Malaysia, Kuala Lumpur | Ir. Dr. Kassim Baba, MIEM No 8777, Senior Lecturer, UTM RAZAK School of Engineering and Advanced Technology, UTM KL |

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| **3. SUMMARY OF TRAINING AND EXPERIENCE** |

The total training and working experiences since graduation in 2003 are summarized as follows:

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| **ITEM** | **ENGINEERING AREA** | **TIME SPENT (MONTH)** |
| D1 | Design work  | 6 |
| D2 | Site/field work  | 6 |
| D3 | Planning and management work  | - |
| D4 | Other engineering related work  | - |
| D5 | Teaching, research and post-graduate work  | 115 |
|  | **TOTAL** | **127** |

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| **4.** **TRAINING AND WORKING EXPERIENCE** |

My engineering training and working experiences are briefly described in chronological order as follows :

4.1 June 1999 – April 2003

After completing my secondary school in 1998, I undertook a 4-year-programme of Bachelor of Engineering (Civil) at Universiti Teknologi Malaysia, Johor Bahru, with my final year project entitled “Reinforced Concrete”, under the supervision of Assoc. Prof. Dr. Hassan Bolkiah.

4.2 May 2003 – August 2004

**Supervisor:** Ir. Dr. Kassim Baba, MIEM No. 8777

**Position:** Post graduate student of Master of Engineering (Project Management) at The University of Melbourne, Australia

Throughout my study, I have published various course works related to Project Management of Civil Engineering, entitled “Principles of Project Management: A Case Study of Kelian River Gold Mine, East Kalimantan, Indonesia”, “Asset Management of Perusahaan Listrik Negara (PLN) of Indonesia”, “Project Management of Australian Synchrotron”, “Sydney Myer Asia Centre, Melbourne: An Engineering Project Management Case Study” and “Occupational Safety and Health Practices of Victoria University of Technology, Sunshine Campus, Victoria, Australia”. Under the supervision of Assoc. Prof. Colin F. Duffield, these courseworks have trained me to adopt and integrate the principles of Engineering Project Management in proposing solutions to the problems raised in various real case-studies as mentioned above.

4.3 September 2004 -November 2006

**Supervisor:** Ir. Dr. Kassim Baba, MIEM No. 8777

**Position:** Post graduate student of PhD (Civil Engineering) at Universiti Teknologi Malaysia, Johor Bahru

I undertook research on “Reinforced Concrete” under the supervision of Assoc. Prof. Kamal Bahtiar, which formulates the definition and variables of the reinforced concrete in Malaysia. The research methods involved were ABC. The results demonstrated that DEF. The significance of this research was GHI. While pursuing my PhD, I also wrote, published and presented research papers related to PhD thesis, locally and internationally, in supporting the findings/recommendations by the thesis.

4.4 December 2006 – November 2007

**Supervisor:** Ir. Dr. Kassim Baba, MIEM No. 8777

**Position:** Associate Lecturer (cum part-time post graduate student at UTM) at Taylor’s College Petaling Jaya, Selangor

I hold the academic position as the associate lecturer at the School of Architecture, Building and Design, Taylor’s College Petaling Jaya, Selangor. The academic responsibilities include lecturing, assessing course works and assignments, preparing quiz/test/examination questions and evaluating quiz/test/examination answer scripts of Civil Engineering related subjects to Diploma of Architecture and Diploma of Quantity Surveying students. The subjects include Building Construction I, Building Construction II, Building Materials and Construction Law. I also involved in marketing the school’s programme, prepared and organized study trips and events as a part of students’ assessment.

Despite leacturing, I also carried out responsibility as the editor for the school’s monograph related to architecture, building and design entitled “Masjid Negara: The National Mosque” published by Taylor’s College Petaling Jaya Publications. Since I was also a registered post graduate student at UTM with research on “Reinforced Concrete” (pursued on a full-time basis, concurrently whilst full-time working as the Associate Lecturer), I also wrote/published research papers related to my PhD thesis in supporting the findings/recommendations by the thesis. I also presented these research papers in international conferences around the globe.

4.5 December 2007 – February 2010

**Supervisor:** Ir. Dr. Kassim Baba, MIEM No. 8777

**Position:** Lecturer, Universiti Teknologi Malaysia Kuala Lumpur (cum part-time post graduate student at UTM)

I am employed by UTM as a full-time lecturer, where my key duties include lecturing, assessing course works and assignments, preparing quiz/test/examination questions and evaluating quiz/test/examination answer scripts of:

1. Diploma of Civil Engineering subjects: Civil Engineering Drawing, Soil Mechanics, Geotechnical Engineering, Project Management and Construction Practice, Mechanical and Electrical System, Civil Engineering Laboratory 1 and Civil Engineering Laboratory 2
2. Diploma of Urban and Regional Planning subjects: Urban Engineering

I was also appointed as the subject coordintor in coordinating subjects of Soil Mechanics, Geotechnical Engineering, Mechanical and Electrical System, Contract and Estimation, and Project Management and Construction Practice in terms of:

1. Planning for subjects schedules and team-teaching schedules
2. Defining, promoting awareness of and maintaining the adopted curriculum
3. Developing an action plan for subjects improvement in a form of Course Review Report (CRR)
4. Assisting with review of lecturer’s performance in the classroom through observation and students’ reports in e-PPP system, an online lecturer teaching evaluation
5. Assisting in preparing any written reports/document of the subjects to the School
6. Creating, editing, and formatting correspondence and other written materials related to the subjects
7. Requesting new materials and equipment in order to provide instructional support to teach in the attempts to meet curricular outcomes
8. Assessing the need for instructional resources based on lecturers’ input as required by the curriculum cycle
9. Invigilating questions developed for courseworks, assignments and quiz/test/examination
10. Meeting subjects’ lecturers to evaluate, develop, monitor and plan the subject implementation; develop, implement and monitor action plans for the subjects; and ensure subjects continuity
11. Preparing and organising study trips and events namely study visits to Skudai, Pulau Langkawi and Medan, Indonesia

I was also appointed as Head of Civil Engineering Workshop (December 2007 – June 2008), Head of Highway Laboratory (July 2008 – December 2008), Head of Hydraulics and Hydrology Laboratory (January 2009 – June 2009) and Head of Soil and Geotechnical Laboratory (July 2009 – February 2010) in:

1. Planning, defining, promoting awareness of and maintaining the overall operation and administration of the laboratory/workshop
2. Ensuring that the laboratory/workshop equipments are as per standards/requirements
3. Advising the School on the needs of new laboratory/workshop equipments
4. Ensuring that new procedures or new equipments are reviewed, tested and if any included in the procedure manuals and followed by all teachnicians
5. Establishing and documenting related action plans/policies/manuals/procedures/rules/forms related to the overall operation and administration of the laboratory/workshop
6. Identifyng remedial training or continuing education needs for technicians

As the PhD student, I was also carrying out research on “Reinforced Concrete”, writing/publishing research papers related to PhD thesis in supporting the findings/recommendations by the thesis and eventually presenting research papers related to PhD thesis in international conferences around the globe. I also managed to register 6 Intellectual Property Rights (IPR) of copyright with UTM, sourced from the findings of my research.

4.6 March 2010 – August 2010

**Supervisor:** Ir. Dr. Kassim Baba, MIEM No. 8777

**Position:** Senior Lecturer, Universiti Teknologi Malaysia Kuala Lumpur

After successfully obtaining my PhD in 2009, I was promoted to the Senior Lecturer. My key responsibilities include lecturing, assessing course works and assignments, preparing quiz/test/examination questions and evaluating quiz/test/examination answer scripts of:

1. Diploma of Civil Engineering subject: Soil Mechanics
2. Diploma of Urban and Regional Planning subject: Urban Engineering
3. Diploma of Architecture subject: Building Services 1

I was also re-appointed as the Coordinator of Soil Mechanics, Geotechnical Engineering, Project Management and Construction Practice, and Act and Safety, with the same duties as previously appointed. On top of that, I also prepared and organised study trips and events namely to Cameron Highlands and Phnom Penh, Cambodia. I was also re-appointed as the Head of Soil and Geotechnical Laboratory (March 2010 – June 2010) with the same previous duties.

As I am the PhD graduate faculty, I was appointed as the supervisor of Master, PhD and Engineering Doctorate students in undertaking research related to Construction Engineering ranging from Civil Engineering, Mechanical Engineering, Quantity Surveying, Urban Design and Human Resources students. Through this supervision, I managed to secure UTM Short-Term Research Grant worth RM 10,000 as Principal Investigator on “Reinforced Concrete” between December 2009 and December 2011. The findings of this research was JKL. I also wrote/published research papers related to the on-going research in supporting the findings/recommendations by the research and managed to register 5 Intellectual Property Rights (IPR) of copyright with UTM. I also presented research papers related to the on-going research in international conferences around the globe.

4.7 September 2010 – February 2011

**Supervisor:** Mr. Beh Lai Seng, Senior Project Manager, IJM Construction Sdn. Bhd.

**Position:** Trainee C&S Engineer, IJM Construction Sdn. Bhd., Grand Hyatt KL Site Project, Jalan Pinang, Kuala Lumpur

I underwent a 6-month industrial training for site/field work at IJM Construction Sdn. Bhd. I was appointed as a trainee C&S engineer and was assigned at Grand Hyatt KL Site Project, a 42-storey mixed commercial block with 412 five-star guestrooms and suites at Jalan Pinang, Kuala Lumpur. I was responsible in reporting directly to Mr. Beh Lai Seng, the Senior Project Manager. My duties include assisting C&S Department to coordinate and manage the site work activities, partaking in all issues related to works including QAQC inspection, test at site, factory/site visit etc, reporting issues affecting the work progress to the Senior Project Manager, controlling the documentation of subcontractors' correspondences and issue of drawings, issuing the site instruction to the subcontractors, liaising with the consultants/architects/clerk of work on any discrepancy pertaining work execution at site as well as chairing the Sub-Contractors’ Progress Weekly Meeting. The project was completed in 2012.

Amongst the problem encountered was the facade (aluminium cladding) installation which was behind schedule of 1 month due to the fact that the installation was started late by 2 weeks, the installation of the lowest level is the most problematic in terms of alignment as well as complex installation at double volume floors at Level 16 (M&E floor) and Level 18 of Royal Suites as well as at corner area. On the other hand, shortage of workers was also the main problem contributing to the delay of aluminium cladding installation, As the installation progressing, it was found that water leakage also occured at the upper level, hence Water Leakage Test at the facade joint, Pull Out Test for facade bolt and Deglazing Test for the cladding. At the same time, IJM Construction Sdn. Bhd. as the main contractor has instructed FTE Sdn. Bhd. as the Nominated Sub-Contractor (NSC) to hire new Domestic Sub-Contractor (DSC) on their own cost since although FTE took 4 man-days to install the aluminium cladding per level with average 20 panels installed per day, it was insufficient to catch the planned schedule. Daily meeting between IJM (site supervisor/coordinator and planning engineer) and FTE was also undertaken to check on their progress. As a part of the catch-up plan, it was decided throughout the meeting that FTE needed resources levelling by scheduling tasks simultaneoulsy where more workers from the workers pool were allocated at Level 16 and Level 18, taking from other non-complex-installation levels. However, since aluminium cladding installation was on critical path and resourcs levelling was not able to catch the planned schedule, IJM instructed FTE to do crashing by adding more workers and resources, undertaking additional overtime on their own cost; as well as fast-tracking by re-schedulling installation works to be worked simulatnously instead of waiting each level to be completed one by one i.e. by overlapping the installation works. Since FTE was requested to do overtime at night, spotlight and scaffold were provided.

While I was responsible to supervise structural works, amongst the problem encountered while inspection led by the site coordinator/supervisor was honeycomb at the shear wall area of Level 29. Since the defect is major based on the inspection check-list form of the shear wall condition, I issued the Non-Conformance Report (NCR) to the DSC in-charge, CCN Construction Sdn. Bhd. where CCN was requested to justify the cause of defect. It was responded by CCN in the NCR that the honeycomb was due to concrete which was too dry as well as congested reinforcing bar hence the concrete was difficult to be vibrated during casting. As the part of rectification action, CCN was instructed to hack and chip the honeycombed area using electric breaker up to the sound of the concrete as well as blow and clean the hacked surface before fixing soft sponge at the side of the hacked area using Dunlop glue in preventing cement and water coming out through the gap. After the inspection was done by the site supervisor/coordinator, assisted by me, formwork was installed tightly and non-shrink grout (Esto Grout MP 60) was poured using pressure grouting machine. Formwork was then dismantled after 1 day and re-inspection was done by the site supervisor/coordinator, assisted by me. After thorough inspection and both the site supervisor/coordinator and I satisfied with the rectification, the NCR was then closed.

On the other hand, fire drill was also conducted on 6 November 2010. Amongst problems encountered were all the workers took too long to reach the Fire Assembly Point via the designated evacuation path i.e. 19 minutes 51 seconds where ideally it should be within 5 minutes (based on Fire and Rescue Department’s recommendation) in proportionate with the total area of the construction site, very late and no submission of attendance/presence of all workers at the assembly area by the sub-contractor’s site supervisor, passenger hoist was still in operation and was used by the Emergency Response Team (ERT) themselves although fire alarm system had been activated at 8.30 am, 1 worker went missing, fire alarm system was insufficiently loud to alarm the whole construction site, as well as obstructed passageway during the evacuation. After the head-count session of fire drill carried out by Logistic Team under ERT, the Project Manager, Mr Beh Lai Seng dismissed the assembly. Post mortem meeting chaired by the Safety Officer and attended by all NSC and DSC Project Manager as well as ERT was held 2 hours after the fire drill where all the causes of incompliance and the corrective actions were discussed. The Safety Officer instructed the ERT to walk the talk, all the PIC to take corrective action by submitting the attendance/presence list of the workers on time, fire alarm system to be upgraded for louder sound and all the PIC to ensure that passageway is not obstructed at any time. Besides, although with all proper signages provided, Health, Safety and Environment (HSE) Department must also review the Fire Emergency Evacuation Plan (FEEP) so that concise instructions of the routine to be followed in case of fire could be disseminated to all workers.

Workers, especially foreign worker were also not concerned with their own safety and the others, thus neglected the wearing of the Personal Protective Equipment (PPE) although have been sufficiently provided by their employer. Even though safety briefing was conducted in the event of high risk job despite holding Grand Tool Box, NSC DSC Tool Box and morning safety briefing with the site supervisor in monthly, weekly and daily basis, respectively in reminding and instructing workers to wear PPE and comply with all the safety measures at construction site, the incompliance still occured. Hence, the action undertaken by IJM on the incompliance on the safety measures was based on the Risk Assessment Matrix of risk likelihood and risk consequence. For instance, workers bringing food to the non-permitted working area (except gazetted rest area where in every 5 levels, 1 rest area was gazeeted) would be issued up until 2 memos where the third incompliance would lead to the fine of RM50 and eventually being banned from entering the site. On the other hand, smoking at the construction site was considered zero tollerance where despite workers being banned from entering the site, the employer was also being fined with RM100,000 where in 1 of the accident, DDS Asia, the NSC, was fined RM100,000 due to the smoking activity by their worker (cigarette butt was disposed at construction waste of timber dust) led to fire at working area. However, it was found that languange had been an apparent barrier in disseminating the education and training on the compliance on safety and health at construction site, hence the instruction during Grand Tool Box Meeting, NSC DSC Tool Box Meeting and morning safety briefing was initially given to the workers who are well-verse in Bahasa Malaysia so that it could be understandably explained to the other workers. As a part of the mitigation action, all contractors were also instructed to purchase more suitable PPE for the specific works and increase monitoring on the workers’ safety. Besides, training on the workers’ safety was also carried out on the monthly basis where all NSC and DSC must submit the Safety Training Report consisting of all safety training conducted by the NSC DSC and attended by the workers (e.g. PPE, Working at Height, Hot Work PPE, How to Use Cutting and Drilling Machinery? Etc) to IJM on a monthly basis as instructed by IJM Headquarter.

4.7 March 2011 – August 2011

**Supervisor:** Head of C&S Department cum Director, Ir. Lee Chau Kuang, MIEM No. 10906

**Position:** Trainee C&S Engineer, KTA Tenaga Sdn. Bhd., D1-21, Jalan PJU 1/41, Dataran Prima, Kelana Jaya, 47301 Petaling Jaya, Selangor

I continued undergoing my subsequent 6-month industrial training for design/office work as a trainee C&S engineer at KTA Tenaga Sdn. Bhd., D1-21, Jalan PJU 1/41, Dataran Prima, Kelana Jaya, 47301 Petaling Jaya, Selangor. I was responsible to report directly to the Head of C&S Department cum Director, Ir. Lee Chau Kuang, MIEM No. 10906. My duties include designing the structural elements of a one-storey Bangunan Pentadbiran Universiti Malaysia Sabah (UMS), Labuan using both manual (assisted with and computerized design calculation of ATSStructE) and ORION R15, designing the water supply system using computer programme of InfoWorks, designing the earthworks for the eight-storey Kolej Kediaman Lelaki, the eleven-storey Kolej Kediaman Perempuan, the 1.5-storey Medan Makan and parking area of Universiti Teknologi MARA (UiTM) Seremban, designing the box culvert for Langat 2 water treatment plant and water reticulation system, designing the sewerage system for 10 units of detached houses at Phase 9, Lot 53663, Bukit Jelutong, Seksyen U8, Shah Alam, designing the road and drainage for Universiti Teknologi MARA (UiTM) Seremban of which include the road marking design and undertaking the Bill of Quantities (BQ) taking-off based on the manual design of a one-storey Bangunan Pentadbiran Universiti Malaysia Sabah (UMS), Labuan

Technically, no problem was encountered while undergoing the industrial training at KTA Tenaga Sdn. Bhd. as all the design works were given as a design exercise by the supervisor, Ir. Lee Chau Kuang, to be compared with the available design previously done by the design engineers at KTA Tenaga. As for the162 m2 Blok Pentadbiran UMS, Labuan, which was proposed to be constructed in Projek Bekalan Air Alternatif UMS, involving seawater conversion to produce drinking water with fresh salt and eletricity as by products, that serves the administrative works of this water treatment plant, I was initially carrying out manual structural engineering design with the assistance of ATSStructE and eventually computerised structural engineering design using Orion R15 to compare the significant differences between these 2 designs. In general, this Blok Pentadbiran is a reinforced concrete structure with metal sheet roofing, conventional beam-column framing system, reinforced concrete column of square or rectangular in shape with minimum longitudinal bars of 4 based on Clause 3.12.5.3 of BS 8110 (1997): Structural Use of Concrete and pad foundation with suitable founding depth of minimum 1500 mm; which was constructed predominantly of in-situ reinforced concrete, except for the plinth supporting the polyethylene water tank, which shall be constructed of teak wood.

The design of this building structure was based on the code of practice of BS 8110 (1997): Structural Use of Concrete, BS 6399 (1996) Loading of Buildings Part 1: Dead and Imposed Loads, BS 648 (1964): Schedule of Weights of Building Materials, BS 7543 (1992): Guide to Durability of Buildings Elements, Products and Components and MS 544 (1978): Structural Use of Timbers. The code of practice of MS 544 (1978): Structural Use of Timbers was also used in the manual calculation design for the timber plinth in supporting the polyethylene water tank, where this was on the contrary not being refered to by the design engineer as the value of its self-weight is insignificant/negligible i.e. 0.16 kN/m. However, as instructed by my supervisor for the purpose of experiential learning on how the code of practice of MS 544 (1978): Structural Use of Timbers is applied, the self-weight of the timber plinth was taken into account in the manual calculation design.

Pad foundation was chosen as the foundation for Blok Pentadbiran due to the bearing capacity of soil of 200 kN/m2 given in the Soil Investigation Report, where based on the calculation, pad foundations ranging from 1 m x 1 m to 1.2 m x 1.2 m were designed, with depths of 300 mm. On the other hand, column loadings and number of storey of Blok Pentadbiran also affected the choice of pad foundation. The pad foundation was considered and designed to reach the suitable founding depth of minimum 1500 mm, where the actual depth would be decided based on the actual site condition. Despite the fact that pad foundation is shallower and hence generally less expensive to be constructed compared to pile foundation, the condition of the soil that consisted of loose to dense sand was also suitable to support the pad foundation as it was unlikely to subside.

On the other hand, suspended slab was designed for Blok Pentadbiran supported by beams with no support between the beams that it spans from. These suspended slabs consisted of reinforcement design of both one way and two way slabs with height of 125 mm and each spans ranging from 1500 mm to 3500 mm.

Throughout the design works, in general, no noticeable comparison is observed on the foundation, beams and slabs design of both ORION R15 and manual design calculation. Nevertheless, the apparent comparison can be seen on the column design, where columns designed via ORION R15 are provided in larger sizes, which eventually affects the larger number and sizes of reinforcement provided, compared to columns manually designed. This is because ORION R15, as a finite element base programme, considers different load eccentricities related to one another using the force equilibrium equations, in comparison with manual design calculation, which merely considers the axial loadings.

Thus, as specifically for this building of Blok Pentadbiran, which merely consists of 1-storey (hence the wind loads are not applied in the structural engineering design because it consists less than 5 storeys) with minimal area of 162 m2, the manual design calculation was preferable as it safely minimizes the loadings, materials and ultimately the costs of constructing the building, although with lengthy time of repetitive design calculations. Nevertheless, ORION R15 would be safer and more loadings-materials-cost-and-time efficient for complex building of multi-storeys due to its ability to analyse, design, draw and perform repetitive calculations using the force equilibrium of finite elements based on 2D and 3D modeling.

4.8 September 2011 – February 2012

**Supervisor:** Ir. Dr. Kassim Baba, MIEM No. 8777

**Position:** Visiting Senior Lecturer, Universiti Pertahanan Nasional Malaysia, Kuala Lumpur

After accomplishing my industrial training, I was appointed as the Visiting Senior Lecturer at Universiti Pertahanan Nasional Malaysia, Sungai Besi, Kuala Lumpur. My key duties include lecturing, assessing course works and assignments, preparing quiz/test/examination questions and evaluating quiz/test/examination answer scripts of 4th year of Bachelor of Civil Engineering subjects: Civil Engineering Project Management and Infrastructure Design Project (Capstone I). At the same time at UTM, I was also carrying out research as the Principal Investigator on “Pembangunan Buku KLM” under Innovation Encouragement Research Grant of UTM worth RM10,000 between September 2011 and August 2012, where throughout this research, I managed to register 65 Intellectual Property Rights (IPR) of copyright with UTM. I also wrote/published research papers related to the on-going research in supporting the findings/recommendations by the research. I was also remained in supervising Master, PhD and Engineering Doctorate students.

I was also appointed as the Project Member of the following research which necessitate the principle elements of Project Management to be embedded into the concept of urban planning and design:

1. Research University Grant Tier 2 led by Assoc. Prof. Dr. Siti Jamal entitled “Developing Guidelines for the XYZ” worth RM 40,000 (April 2011 – March 2012)
2. Research University Grant Tier 2 led by Prof. Dr. Rahmah Abu entitled “Evaluating the Importance of TUV” worth RM 40,000 (April 2011 – March 2012)

4.9 March 2012 – April 2012

**Supervisor:** Ir. Dr. Kassim Baba, MIEM No. 8777

**Position:** Visiting Senior Lecturer, Universiti Teknologi MARA, Shah Alam, Selangor

I was also appointed as the Visiting Senior Lecturer at Universiti Teknologi MARA, Shah Alam, Selangor where my key duties include lecturing, assessing course works and assignments, preparing quiz/test/examination questions and evaluating quiz/test/examination answer scripts of 4th year of Bachelor of Civil Engineering subjects: Engineers in Society and Business for Engineers. Since I was also remained as the Principal Investigator and Project Member of the previous researches hence I also presented research papers related to the on-going research in international conferences around the globe. I was also remained in supervising Master, PhD and Engineering Doctorate students.

I managed to secure Research University Grant Tier 1 as the Principal Investigator entitled “A Causal Relationship Framework for QRS” worth RM 150,000 between April 2011 and March 2013. Throughout this research, I managed to register 6 Intellectual Property Rights (IPR) of copyright and other 4 IPR from other research with UTM. I also wrote/published research papers related to the on-going research in supporting the findings/recommendations by the research.

4.10 May 2012 – February 2013

**Supervisor:** Ir. Dr. Kassim Baba, MIEM No. 8777

**Position:** Senior Lecturer cum IT Manager, UTM RAZAK School of Engineering and Advanced Technology, Universiti Teknologi Malaysia Kuala Lumpur

I was appointed as the IT Manager of UTM RAZAK School of Engineering and Advanced Technology where I was responsible in:

1. Managing, updating and monitoring the School’s website
2. Planning, managing and monitoring staff’s training programme related to the usage of computer
3. Accepting and solving reports on IT of the School
4. Managing maintenance of IT equipment of the School
5. Chairing IT Unit meeting
6. Planning, managing, monitoring and maintaining computer systems related to the School including main server/control/ web system, database server/control/ web system, network and security network system, computer security system, library and teaching and learning (T&L) support equipment and computer labs
7. Planning, leading and checking the procurement of IT equipment for service and research of the School
8. Liaising with CICT UTM in matters related to IT
9. Ensuring management of data backup and recovery process follows the coordinated scheduling
10. Representing the School in meeting related to IT

I was also remained in supervising Master, PhD and Engineering Doctorate students, whilst at the same time continue in undertaking the previous research as the Principal Investigator. I also wrote/published research papers related to the on-going research in supporting the findings/recommendations by the research as well as presented research papers related to the on-going research in international conferences around the globe. Throughout all my research, I also managed to register 3 Intellectual Property Rights (IPR) of copyright with UTM.

4.11 March 2013 – August 2013

**Supervisor:** Ir. Dr. Kassim Baba, MIEM No. 8777

**Position:** Visiting Senior Lecturer, Universiti Teknologi MARA, Shah Alam, Selangor

I was re-appointed as the Visiting Senior Lecturer at Universiti Teknologi MARA, Shah Alam, Selangor where my key duties include lecturing, assessing course works and assignments, preparing quiz/test/examination questions and evaluating quiz/test/examination answer scripts of 4th year of Bachelor of Civil Engineering subjects: Engineers in Society. At UTM, I successfully secured another Research University Grant Tier 1 as the Principal Investigator entitled “ Construction On-Site Productivity Constraints and Improvement Measures” worth RM 150,000 between December 2012 and December 2014.

I was also remained in supervising Master, PhD and Engineering Doctorate students. Throughout all my research, I also managed to register 7 Intellectual Property Rights (IPR) of copyright with UTM.

4.12 September 2013 – present

**Supervisor:** Ir. Dr. Kassim Baba, MIEM No. 8777

**Position:** Senior Lecturer cum IT Manager, UTM RAZAK School of Engineering and Advanced Technology, Universiti Teknologi Malaysia Kuala Lumpur

I am re-appointed as the IT Manager of the school with the same previous duties. As the Senior Lecturer, my key duties include Lecturing, assessing course works and assignments, preparing quiz/test/examination questions and evaluating quiz/test/examination answer scripts of Master of Sustainable Urban Design subjects: Research Methodology for Sustainable Urban Design and Sustainable Construction and Design. I was also appointed as the Coordinator of Research Methodology for Sustainable Urban Design and Sustainable Construction and Design with the typical same duties mentioned before as the subject coordinator. I was also remained in supervising Master, PhD and Engineering Doctorate students, whilst at the same time continue in undertaking the previous research as the Principal Investigator. I also wrote/published research papers related to the on-going research in supporting the findings/recommendations by the research as well as presented research papers related to the on-going research in international conferences around the globe. Throughout all my research, I also managed to register 5 Intellectual Property Rights (IPR) of copyright with UTM.

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| **5. CONCLUSION** |

I am undergone an extensive professional training and experience under the supervision of prolific Professional Engineer professor and Professional Engineer despite being able to demonstrate my proactive roles throughout my career.

Prepared by:

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Engr. Dr. Ahmad Albab

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| **6. APPENDIX – SYNOPSIS OF SUBJECTS TAUGHT** |

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| **Name of Subject:** | Engineers in Society |
| **Students:** | 4th Year Student of Bachelor of Civil Engineering, University of Technology MARA, Shah Alam, Selangor |

**Course Synopsis**

This course has been designed to accommodate the “Engineer in Society” syllabus of the Institution of Engineers (IEM), Malaysia and Board of Engineers (BEM), Malaysia. Pre-selected engineering management topics from the original IEM/BEM syllabus have been omitted and other relevant topics are covered. The topics include a wide range of management theories, concepts, Rules and Regulations, Acts, By-laws, Code of Practices, Local and International Standards and other related inter-relationships between the current role of the practicing consultants and supervising engineers and the society and environment at large. In addition it covers engineering current issues faced by engineers, society and environment related to engineering progress and development. Lectures for the examinable topics would be conducted in a similar manner.

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| **Name of Subject:** | Business for Engineers |
| **Students:** | 4th Year Student of Bachelor of Civil Engineering, University of Technology MARA, Shah Alam, Selangor |

**Course Synopsis**

This course is intended to prepare graduates for the fast paced world of modern business concepts before they begin their careers as practicing civil engineers. The course will include topics such as financial analysis, entrepreneurship, intellectual property and business ethics. Students will become familiar with analyzing financial statements, stock market reports and company valuation. E-commerce will also be examined and the implications of this new business model will be explored. Students will also be able to develop their verbal and written presentation skills. Guest speakers will compliment the experience of the instructors and the course material.

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| **Name of Subject:** | Civil Engineering Project Management |
| **Students:** | 4th Year Student of Bachelor of Civil Engineering, Universiti Pertahanan Nasional Malaysia, Kuala Lumpur |

**Course Synopsis**

The course starts with the project management concept, role of project manager and function of project management from inception until completion. The second part of the course will include the usage of tools available in construction management particularly in the application of planning and scheduling technique using Gantt Chart and network technique. The course will also expose the student on the application of scheduling software available in the market.