

A Resident Engineer's Experiences & Challenges



Ir. Loo Wen Siang

With more than 13 years' experience in the M&E (Mechanical and Electrical) consultancy field, I have been involved in the design of building services for industrial buildings, residential buildings, offices, hotels and water treatment plants as well as 9 years as Resident Engineer for the construction of an office-condominium project.

This encompasses the engineering professional cycle, from conceptual design to final project implementation involving installation, testing and commissioning of M&E services and defects rectification during the liability period following the handing over of a project.

In this article, I am sharing some of my thoughts, my experiences and the challenges I have faced as a Resident Engineer. I hope this information will be a useful insight into the industry, especially for those considering a career in M&E engineering.

This is an individual's opinion and is meant to be read as a personal experience rather than as a collective opinion or influence.

In the building industry, the construction of a building (with the exception of industrial buildings where an architect's expertise is not required) is just like constructing a human being; it involves three professions:

1. ARCHITECTS who provide the aesthetic, fascia, form, shape and layout.
2. CIVIL & STRUCTURAL ENGINEERS who provide the frame and structure that will support the Architect's design.
3. MECHANICAL & ELECTRICAL ENGINEERS who give life to the building.

The input of all three professions are equally important and will go towards determining the comfort, beauty, cost of operation, maintenance and efficiency of the building whether it's an office tower, hotel, apartment or condominium.

THE CHALLENGES

The main responsibilities of a Resident M&E Engineer are to supervise and ensure that works carried out are in accordance with the design, intent and requirement, specification and approved shop drawings. He must be prepared to work in an environment described as "Dangerous, Hot, Humid, Dirty and Tough".

The Resident Engineer also ensures that the Client's interest is upheld and that the contractor does not act dishonestly/unfairly but adheres to the building codes, The Malaysian Standards and ensures the design of the systems, materials and quantities provided are as stated in the tender BQ and design, and remains impartial to the Contractor.

In any construction site, accidents – both minor and major – are common and seemingly unavoidable; sometimes these accidents may even be fatal. So an engineer has to be constantly prudent, alert and sharp to look out for potential danger, hazards, unsafe conditions and acts on site.

Any unsafe and hazardous condition/act must be reported to the Safety Officer (S.O.) **"officially and in writing"** for immediate action, with copies sent to the main contractor, client and all consultants involved in the project. As the S.O. is engaged by the main contractor and has no power to procure the safety hardness/equipment or approve works recommended, the Resident Engineer needs to follow up closely with the main contractor and pursue with the S.O. until the main contractor has complied with the rules and requirements of the relevant authorities as recommended.

In my opinion, safety at the work site takes priority over work progress. Once a life is lost, it is lost forever. Work progress will also be delayed if a fatal accident occurs as the authorities will then issue a **"STOP WORKS ORDER"**.

Personally I've experienced three near-miss incidents. Miraculously, I walked away unhurt each time but these are not experiences I would like to see repeated. Most importantly, there must be no compromises on safety at the work site. Initially, the site conditions were so unsafe and intolerable that the supervising team had no choice but to stand firm and stop all works. The main contractor was then under pressure to act and engage a Safety Officer immediately and to comply with the latter's recommendations.

There was also one near-miss fatal incident, in which the architect (S.O.) was literally told, at the site meeting, to carry out his duties and issue a **"Stop Works Order"** until he was satisfied that the recommended actions had been taken before the Stop Works Order could be lifted.

Today, our construction industry relies heavily on foreign labour, mostly from Indonesia, Bangladesh, Vietnam, Myanmar and Pakistan. These foreign workers first start as general workers. Then later, when they have gained experience, they become skilled workers. So there are three categories of foreign labour i.e. skilled, semi-skilled and unskilled, headed by a local supervisor.

To work well with these foreign workers, it is very important that we understand their culture, lifestyle, behaviour and thought. Good and effective communication with them and their site supervisors are necessary. We must treat them and their supervisors with respect and as team players. We must assist them whenever they encounter problems. Once they understand their responsibilities and your expectations, you will gain their trust and respect. This way, you will encounter fewer problems and work will move ahead smoothly.

In fact by engaging and helping them, it will also help us in our work and progress. A harmonious working environment will result in better quality work and fewer problems. Of course, at times you need to be firm, strict and remand them when necessary.

In my opinion, the following two words which start with the letters G and E will determine a timely completion and the success of any project:

- **Good & Experienced** Design Consultants, Engineers and Architect
- **Good & Experienced** Site Supervising Team
- **Good & Experienced** Management
- **Good & Experienced/Reliable** Main Contractor & Sub Contractors

Design Consultants: Good leadership, experienced, professional, practical and efficient design. Be humble and willing to admit their mistakes and to accept the opinions of others.

Site Supervising Team: Good leadership, experienced, good team work, professional, committed to and passionate about work as well as be without fear or favour.

Management: Good and dynamic leadership, experienced, professional, have foresight, able to make quick and good decisions, appreciative, reasonable and fair.

Main contractor/Sub-contractors: Effective leadership and experienced, proven track record, good organisation, good team of site staff, take pride in their work, good financial standing, professional and honest.

After a building is completed, the Certificate Of Completion & Compliance is issued and the premises handed over to the buyer/s. When the building is occupied, it is common to get a lot of complaints from owners and the Joint Management Committee (JMC). These complaints are termed "defects" and will be addressed during the defects liability period. It is quite a good experience and a challenge to handle or deal with the building owners and the JMC on defects rectification as you will encounter various characters with as many types of behaviour.

Most owners are reasonable and understanding but there will be some who can be very difficult and demanding or downright nasty and rude. Such owners have to be handled with care, tact and skill. One must be really patient, cool, calm and strong-minded to face the onslaught of complaints. However one must also be firm if

the owners prove unreasonable, nasty and the complaints beyond the scope of the project.

You can build a good relationship with many good and reasonable owners/tenants but with those who prove difficult, nasty and unreasonable, just think of them as strangers passing by.

At the end of the day, after all the hard work, challenges, site problems and seeing the building rise slowly and steadily and then handed over to the purchasers, one feels a sense of satisfaction and achievement in a job well done.

This is just a brief description of the experiences and challenges that I have faced in my work as a Resident Engineer. I hope my fellow engineers will find it informative and inspiring. ■

Author's Biodata

Ir. Loo Wen Siang is a Resident engineer on construction of shop lots and condominiums for a reputable developer. He has a BSC (Hons) Mechanical Engineering in 2nd Class, 1st Division. He is currently a committee member in Building Services Technical Division.

IEM DIARY OF EVENTS

Title: 1-Day Seminar on Response of Buildings to Excavation Induced Movements

22 August 2017

Organised by : Geotechnical Engineering Technical Division
Time : 9.00 a.m. - 6.00 p.m.
CPD/PDP : 7.5

Title: Talk on "Determinants of Organizational Performance"

22 August 2017

Organised by : Engineering Education Technical Division
Time : 5.31 p.m. - 7.30 p.m.
CPD/PDP : 2

Title: 2-Day Course on "Agile Vendors (& Subcontractors) Management"

23 - 24 August 2017

Organised by : Oil, Gas and Mining Engineering Technical Division
Time : 9.00 a.m. - 5.00 p.m.
CPD/PDP : 12

Title: 1-Day Course on "Renewable Energy From The Palm Oil Manufacturing Industry: The Direction and Challenges"

26 August 2017

Organised by : Agricultural and Food Engineering Technical Division
Time : 9.00 a.m. - 5.30 p.m.
CPD/PDP : 7

Kindly note that the scheduled events below are subject to change. Please visit the IEM website at www.myiem.org for more information on the upcoming events.