

WHY AND HOW TO BECOME A PROFESSIONAL ENGINEER

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**Timponon Laban Rata,
Le Meridien Hotel, Kota Kinabalu**

Outline of Presentation

Graduate Engineer Registration

Practical Experience

Routes to PAE

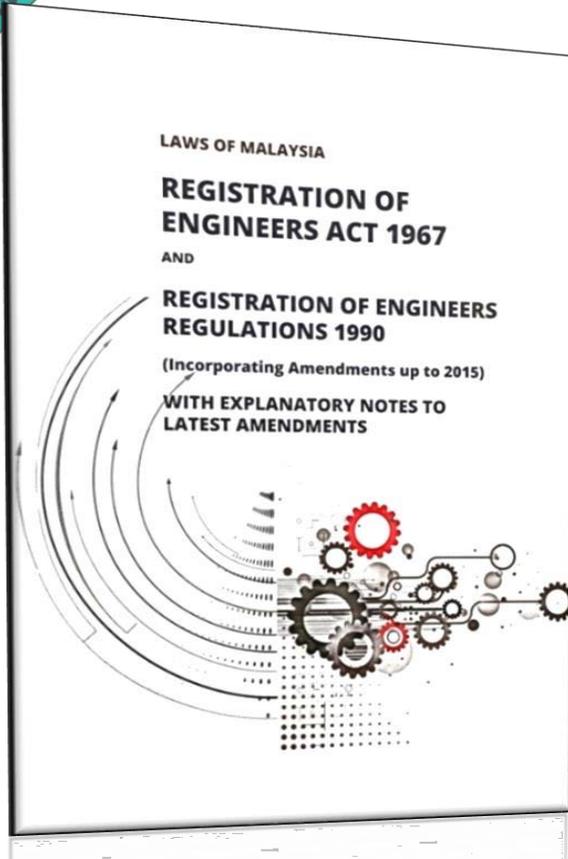
Qualities of a Registered Professional

REGISTRATION OF ENGINEERS ACT 1967

Act of Parliament Act 138

**Regulations Governing the Engineering Profession, Practice
& Services**

To **protect the public** by legislative control so that the practice of engineering, which has a bearing on public safety, health and welfare, can only be carried out by licensed professional engineers.



To **create a regulatory body** with mandate to carry out licensing of professional engineers and regulation of the profession

To **set regulations** pertaining to the practice of engineering; qualifications for licensing; and code of professional conduct for registered engineers;

THE PURPOSE OF THE ENGINEERS' ACT

Any person who wishes to provide professional engineering services must be registered with BEM.

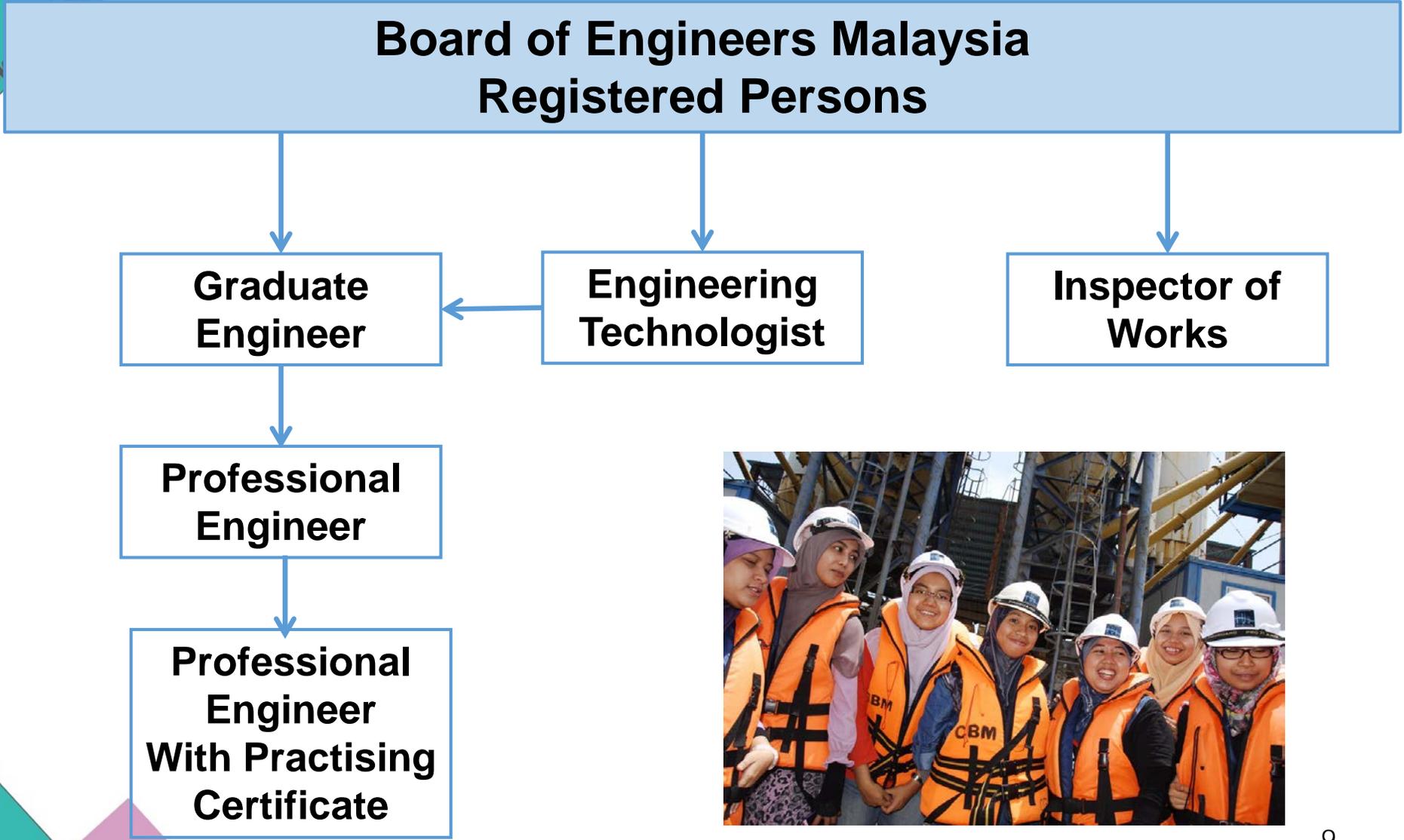
- **BEM** is a **regulatory body** that **registers** engineers and engineering consultancy practices and **regulates** the professional conduct and practice of registered persons in order to **safeguard the safety and interest of the public.**
 - ✓ Registration with BEM is **compulsory** should you need to provide professional engineering services.
- **IEM** is a **learned society** that promotes and advances the science and profession of engineering to facilitate the exchange of information and ideas related to engineering.
 - ✓ IEM admits Members and the membership is **optional.**

“professional engineering services”
means engineering services and advice in connection with any feasibility study, planning, survey, design, construction, commissioning, operation, maintenance and management of engineering works or projects and includes any other engineering services approved by the Board.

“registered Person” – means a registered Engineer, Engineering Technologist or Inspector of Works.

“registered Engineer” – means a Graduate Engineer, Professional Engineer, Professional Engineer with Practising Certificate or Accredited Checker.

REGISTERED PERSONS



Restriction on employment

Why you should register

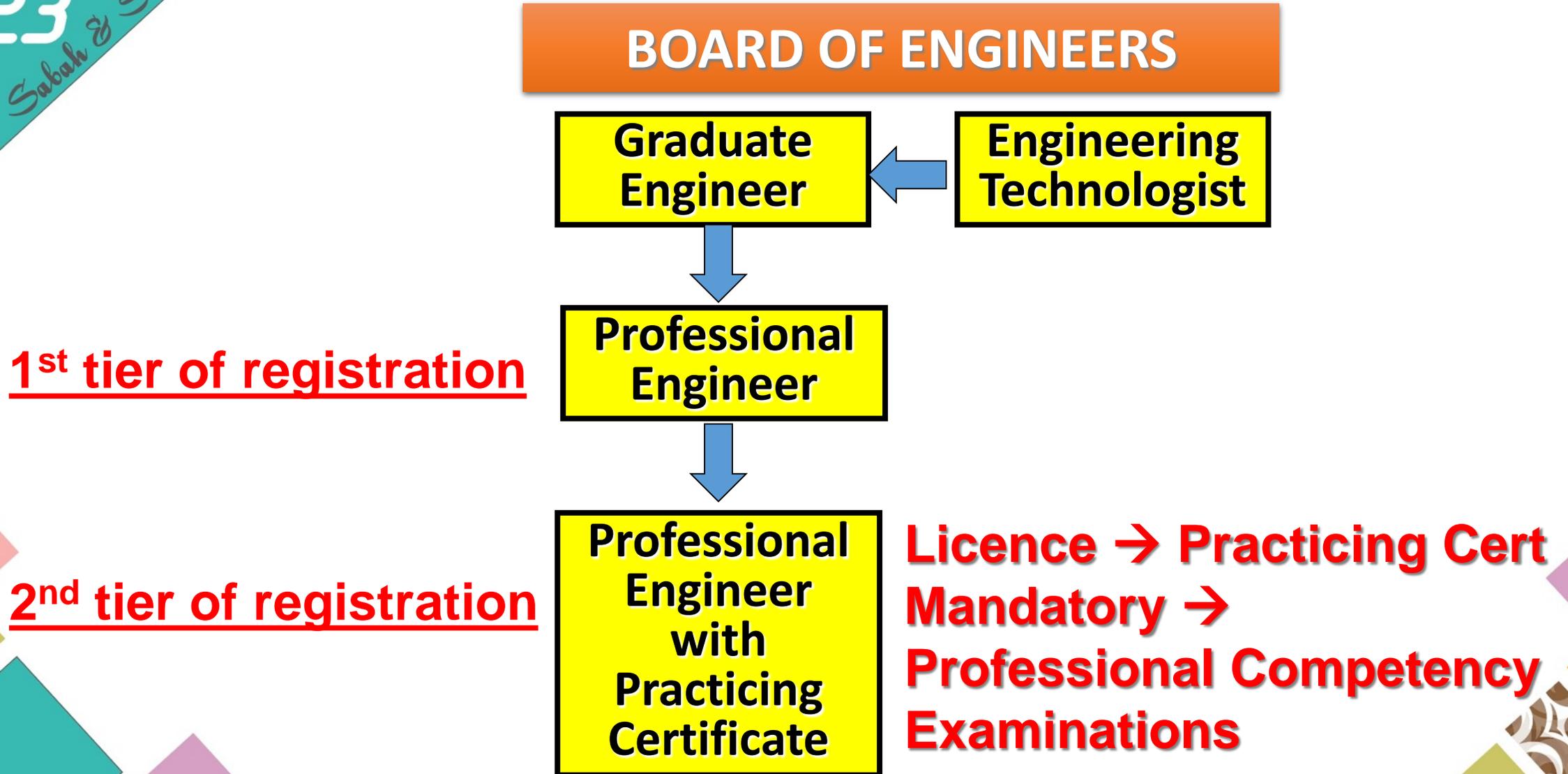
Section 24A(1) restricted employment of unregistered person to provide professional engineering services :

No person shall employ a person, sole proprietorship, partnership or body corporate, other than a Professional Engineer with Practising Certificate, to perform professional engineering services”.

Section 24(h) – PENALTY

“Any person, sole proprietorship, partnership or body corporate who contravenes section 7 or 8, or subsection 7A(1), 24A(1) or 24B(5) shall be guilty of an offence and shall, on conviction, be liable to a fine not exceeding fifty thousand ringgit, or to imprisonment for a term not exceeding three years, or to both”

Concept of 2-Tier Registration





statistics

as at May 2023

Registered Persons

8883 PE with Prac. Cert.

6424 Professional Engineer

30 Accredited Checkers (S) - 14
Accredited Checkers (G) - 16

185877 Graduate Engineer

14500 Engineering Technologist

5104 Inspector of Works

812 Inspector of Works (i)

Engineering Consultancy Practices

1130 Body Corporate

204 Partnership

1194 Sole Proprietorship

45 Multi Disciplinary



ROUTE TO BECOME A PROFESSIONAL ENGINEER

STEPS

1

Registered with BEM

2

Has satisfied the training requirements set by the Board.

3

Has passed the Professional Assessment Examination or a Professional Engineer with professional body recognized by the Board or a corporate member of IEM.

4

Applies to BEM to be registered as a PE.

STEP

1

GRADUATE ENGINEER REGISTRATION

QUALIFICATIONS ACCEPTED

For Graduate Engineers:

- A **4-year engineering degree** from a Malaysian university which has been accredited by the Engineering Accreditation Council (EAC) of BEM
- An accredited 4-year engineering degree from an overseas professional body which is a **signatory to the Washington Accord (WA)**.
- BEM-Pre EAC list (including UK 3 years qualification until 2000)
- Licensed Aircraft Engineer with Category C
- Marine Engineer with CoC Class 1 (1st or Chief Engineer)

- 4 years or more JPA-BEM's recognised engineering qualifications (Russia/France CTI)
- 4 years Monbusho recognised engineering degrees from Japan (based on intake until June 2009)
- FEANI Index or list (EEED) (4 or 5 years Diploma Ing/FH or 3+2 qualifications in a related discipline)

WASHINGTON ACCORD SIGNATORIES

- **Korea** - Represented by [Accreditation Board for Engineering Education of Korea \(ABEEK\) \(2007\)](#)
- **Russia** - Represented by [Association for Engineering Education of Russia \(AEER\) \(2012\)](#)
- **Malaysia** - Represented by [Board of Engineers Malaysia \(BEM\) \(2009\)](#)
- **China** - Represented by [China Association for Science and Technology \(CAST\) \(2016\)](#)
- **South Africa** - Represented by [Engineering Council South Africa \(ECSA\) \(1999\)](#)
- **New Zealand** - Represented by [Engineering New Zealand \(EngNZ\) \(1989\)](#)
- **Australia** - Represented by [Engineers Australia \(EA\) \(1989\)](#)
- **Canada** - Represented by [Engineers Canada \(EC\) \(1989\)](#)
- **Ireland** - Represented by [Engineers Ireland \(EI\) \(1989\)](#)

- **Hong Kong China** - Represented by [The Hong Kong Institution of Engineers \(HKIE\) \(1995\)](#)
- **Chinese Taipei** - Represented by [Institute of Engineering Education Taiwan \(IEET\) \(2007\)](#)
- **Singapore** - Represented by [Institution of Engineers Singapore \(IES\) \(2006\)](#)
- **Sri Lanka** - Represented by [Institution of Engineers Sri Lanka \(IESL\) \(2014\)](#)
- **Japan** - Represented by [JABEE \(2005\)](#)
- **India** - Represented by [National Board of Accreditation \(NBA\) \(2014\)](#)
- **United States** - Represented by [Accreditation Board for Engineering and Technology \(ABET\) \(1989\)](#)
- **Turkey** - Represented by [Association for Evaluation and Accreditation of Engineering Programs \(MÜDEK\) \(2011\)](#)
- **United Kingdom** - Represented by [Engineering Council United Kingdom \(ECUK\) \(1989\)](#)

- **Costa Rica** - Represented by [Colegio Federado de Ingenieros y de Arquitectos de Costa Rica \(CFIA\) \(2020\)](#)
- **Mexico** - Represented by [Consejo de Acreditación de la Enseñanza de la Ingeniería \(CACEI\) \(2022\)](#)
- **Pakistan** - Represented by [Pakistan Engineering Council \(PEC\) \(2017\)](#)
- **Peru** - Represented by [Instituto de Calidad y Acreditacion de Programas de Computacion, Ingenieria y Tecnologia \(ICACIT\) \(2018\)](#)
- **Indonesia** - Represented by [Persatuan Insinyur Indonesia \(PII\) \(2022\)](#)

There shall be indicated against the name of each registered Person or Engineering consultancy practice kept in the Register the **branch or branches of engineering** in which he or it is qualified to practice and particulars of any ***conditions or restrictions*** imposed by the Board

BEM ENGINEERING BRANCHES & SUB-BRANCHES

MAIN BRANCH	CIVIL	MECHANICAL	ELECTRICAL	CHEMICAL
1	Building	Aerospace	Computer	Environmental
2	Construction	Agricultural	Electronic	Petroleum
3	Environmental	Automotive	Communication	Process (Polymer, Pharmaceutical, Food)
4	Geotechnical	Building Services		Nuclear
5	Mining	Manufacturing		
6	Structural	Marine		
7	Transportation	Material		
8		Mechatronic		
9		Metallurgy		
10		Mining		
11		Naval Architecture		
12		Nuclear		

Why you should register

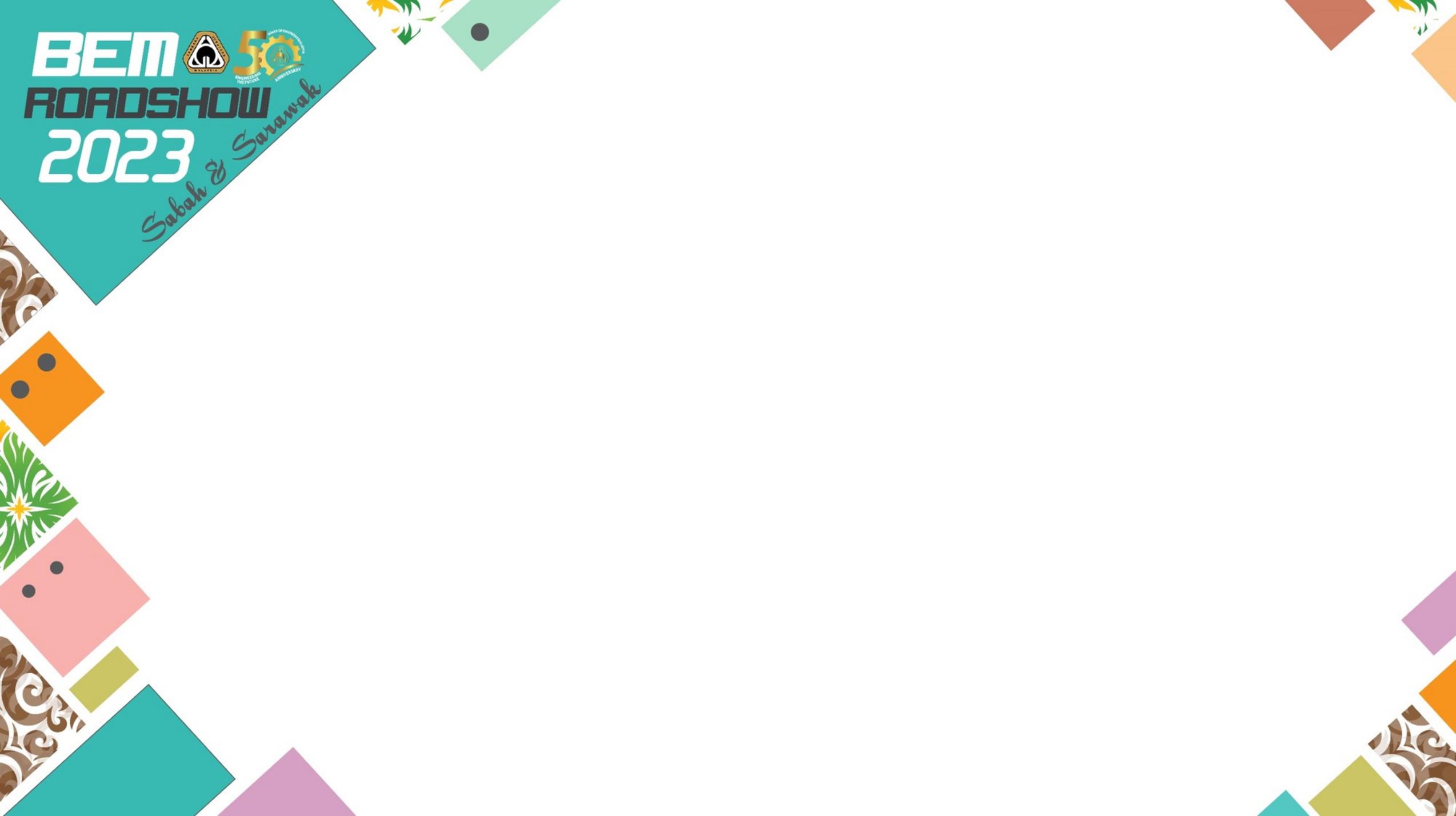
- **BEM recognises the experience gained by an engineering graduate only after he has registered as a Graduate Engineer.**
- **Experience gained before that will not be considered.**
- **It is prudent to register as Graduate Engineer at the very beginning of an engineering career.**

procedure for registration

Submit **Form A1** accompanied by:

- a non-refundable processing fee of RM 50.00
 - Copy of degree certificate
 - Copy of full official transcript
 - Copy of IC/MyKad
- duly certified by an active Professional Engineer**

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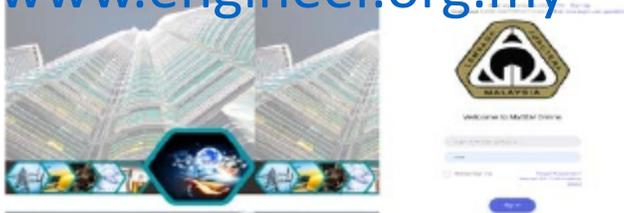


GRADUATE ENGINEER APPLICATION

Submission

MyBEM Online Reg. System

www.engineer.org.my



Processing fee of RM 50.00

Copy of degree scroll, full official transcript & IC/MyKad
(duly certified by an active PE)

Approval Stage

Approval within 1 – 4 months

**BEM
Application
Committee**

Output

Download, print & save e-certificate.



upon approval...

An applicant whose application has been approved will be issued a certificate of registration

The Certificate will state his/her registration number and his/her branch of engineering in which he/her should be practising.

after approval as “GE”

STEP

2



**PRACTICAL
EXPERIENCE**

practical experience

Regulation 22, Registration of Engineers
Regulation 1990 (Revised 2015)

Obtained at least 3 years practical experience including:

- a) 2 years general training**
- b) 1 year professional career development & training**
 - *wide exposure on managerial & technical expertise***
- c) 1 year of the above must be obtained in Malaysia**

At least one year of the training must be obtained in Malaysia under the ***supervision of a Professional Engineer (PEng)*** in the same branch of engineering.

If there is no PEng in the organization, the training undergone must be certified by the management of the organization on the company letterhead, and ***a support letter*** from a PEng known to the trainee must be attached.

Sample formats of the required letters are available at **BEM.**

PRACTICAL/INDUSTRIAL TRAINING FOR ACADEMIC STAFF/STAFF IN RESEARCH INSTITUTIONS

For academic staff/staff at research institutions the industrial training requirements is specified as follows:

- Practical training in industry / consulting firm (organisation) under the ***supervision of a PE/PEPC.***
- Training should be for a period of one year (***either continuous or in periods adding up to one year.*** If carried out in periods, training need not be in the same organisation.
- Research carried out in collaboration with industry to address problems occurring in industry can be accepted provided industry issues a letter specifying details of the projects(s) and involvement of the staff. The staff should spend ***considerable time on site at the industry.*** Time should be recorded in a log sheet format.

Supervising PE/PEPC ***should not be a staff of the same organisation*** as the staff undergoing the practical training.

- The supervising PE/PEPC should ***certify that the staff has carried out the training*** with details of the period the staff has spent on the training and the works carried out on the company letterhead (refer to SAMPLE 1(i))
- If there is no PE/PEPC at the organisation where the training was carried out the certification letter must be signed by ***a senior officer of the organisation*** using company letterhead (refer to SAMPLE 1(ii)) and another ***letter of support signed by a PE/PEPC*** certifying the training carried out must be submitted (refer to SAMPLE 2).
- GE also may apply to participate in ***the Mentor Programme of the Institution of Engineers of Malaysia (IEM)*** to undergo training under supervision of PE/PEPC.

Requirement of Professional Engineer (PE/PEPC) to Supervise/Support Graduate Engineer (GE) undergoing practical training

- Any Professional Engineer (PE/PEPC) may supervise a Graduate Engineer (GE) ***regardless of the number of years*** registered with BEM.
- The PE/PEPC must be from ***same branch (discipline) as the GE***
- If the PE/PEPC is from a minor branch or non related branch, the GE needs to ***obtain approval from the Board.***

what is next ...

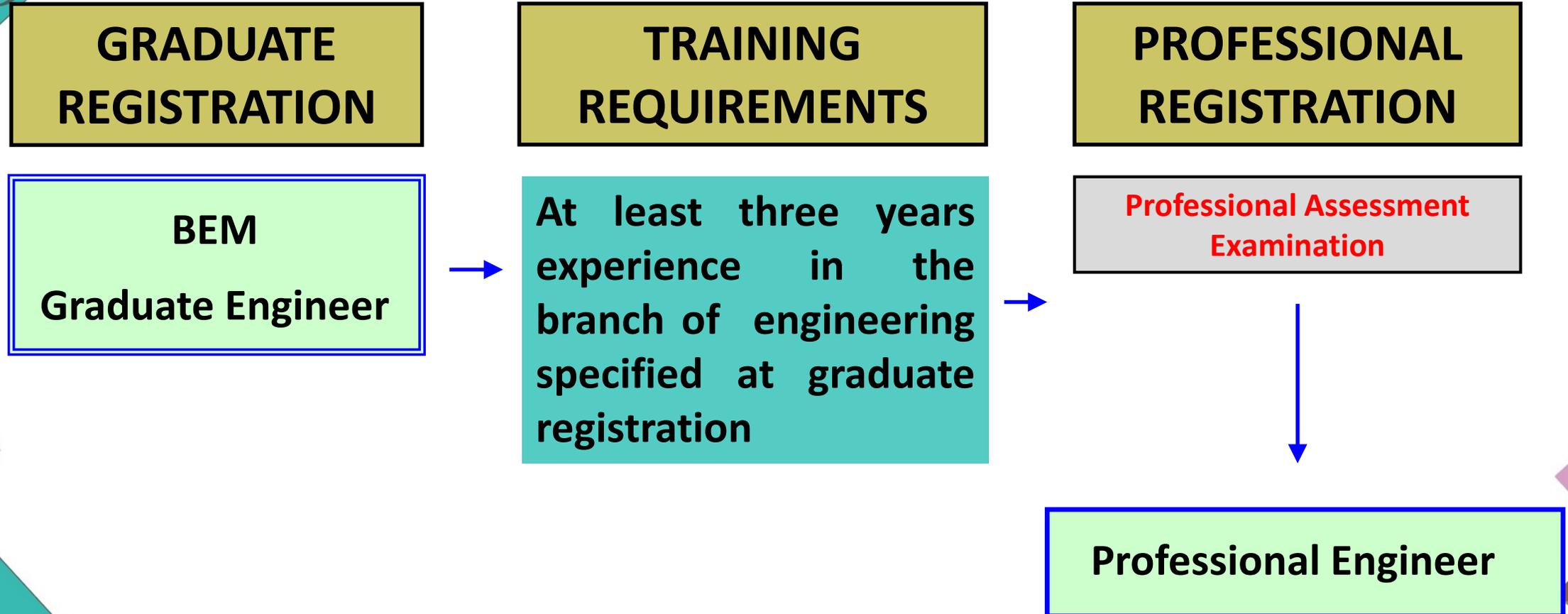
Upon satisfactory completion of practical experience, a Graduate Engineer may apply to sit for a professional assessment examination before he/she could apply to be upgraded as a Professional Engineer.

professional assessment examination

After approval as Graduate Engineer



Route to become PE



Pre-requisite to sit for the Professional Assessment Examination

- ***Registered as a Graduate Engineer with BEM***
- ***At least three years engineering experience (after registration as graduate engineer) in the branch of engineering specified at graduate registration inclusive of one year supervised practical training obtained in Malaysia***

ROUTE TO PROFESSIONAL ENGINEER

ROUTE A (Professional Assessment Examination)	ROUTE B (Professional Qualification Equivalent to PAE) -Foreign-	ROUTE C (Corporate Member of IEM)
<p>I. Graduate Engineer registered with BEM</p> <p>II. has obtained 3 years practical experience as specified in Regulation 22(1)</p> <p>III. has passed a Professional Assessment Examination (PAE) conducted by the Board</p> <ul style="list-style-type: none"> a. Interview b. Training and Experience report c. Written code of professional conduct 	<p>I. Registered Professional Engineer (in good standing) from recognized Professional Bodies with substantially equivalent assessment</p> <p>II. Graduate Engineer registered with BEM</p> <p>III. has obtained 3 years practical experience as specified in Regulation 22(1)</p> <p>IV. has passed Code of Professional Conduct Assessment;</p> 	<p>I. A Corporate Member of the Institution of Engineers Malaysia (IEM)</p> <p>II. has obtained 3 years practical experience as specified in Regulation 22(1)</p> 

PART III – REGISTRATION OF ENGINEERS Professional Engineers

Section 10.(2)(a)(ii - New sub-section

To register as a Professional Engineer

(a) any person –

(i) who is registered as Graduate Engineer and has obtained the practical experience under paragraph (1)(b)

(ii) who –

(A) has passed a professional examination conducted by the Board;

(B) holds a **professional qualification which the Board considers to be equivalent to the professional assessment examination conducted by the Board; or**

(C) is a corporate member of the Institution of Engineers (Malaysia); and

(iii) who has complied with all the requirements of the Board;

DOCUMENTATION REQUIRED FOR PEng APPLICATION THROUGH SECTION 10.2(a) (ii)

1. BEM Graduate registration (obtained 3 years before application)
 2. Additional academic qualifications since graduate registration
 3. Summary of experience since graduate registration
 4. Certificate of Professional Registration obtained from Washington Accord signatory country
 5. Application made to obtain Professional Membership
 6. Latest receipt for membership renewal
 7. Certificate of one year practical training in Malaysia from organisation(s)
- (All documents to be signed by a P.Eng.)

• ***Candidates are required to sit for a Code of Conduct Examination***

Qualities of a Registered Professional Engineer

Competent, Intellectual, Mature, Responsible & Ethical.

Able to analyse solve engineering problem.

Able to perform design works & do supervision

Assume responsibilities.

Must have the knowledge, both practical and technical to practice in the field of engineering.

Qualities of a Registered Professional Engineer

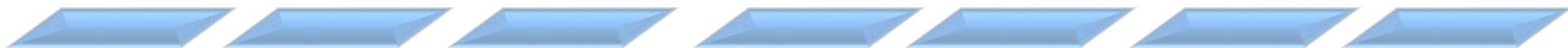
Knowledge of codes / regulations related to that field of engineering



Able to anticipate of likely problem to be encountered



Able to provide services conforming to regulations, code of practice, best engineering practice in the best interest of the client





Q & A

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THANK YOU



"Committed To Engineering Excellence"

BOARD OF ENGINEERS MALAYSIA

Tingkat 11 & 17, Blok F Ibu Pejabat JKR
Jalan Sultan Salahuddin, 50580 Kuala Lumpur

<http://www.bem.org.my>

enquiry@bem.org.my or complaint@bem.org.my.

Tel: 03-26912090; Fax: 03-26925017