



COMMON PUBLIC COMPLAINTS MADE AGAINST ENGINEERS

Presenters:

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Outline of Presentation

1. INTRODUCTION

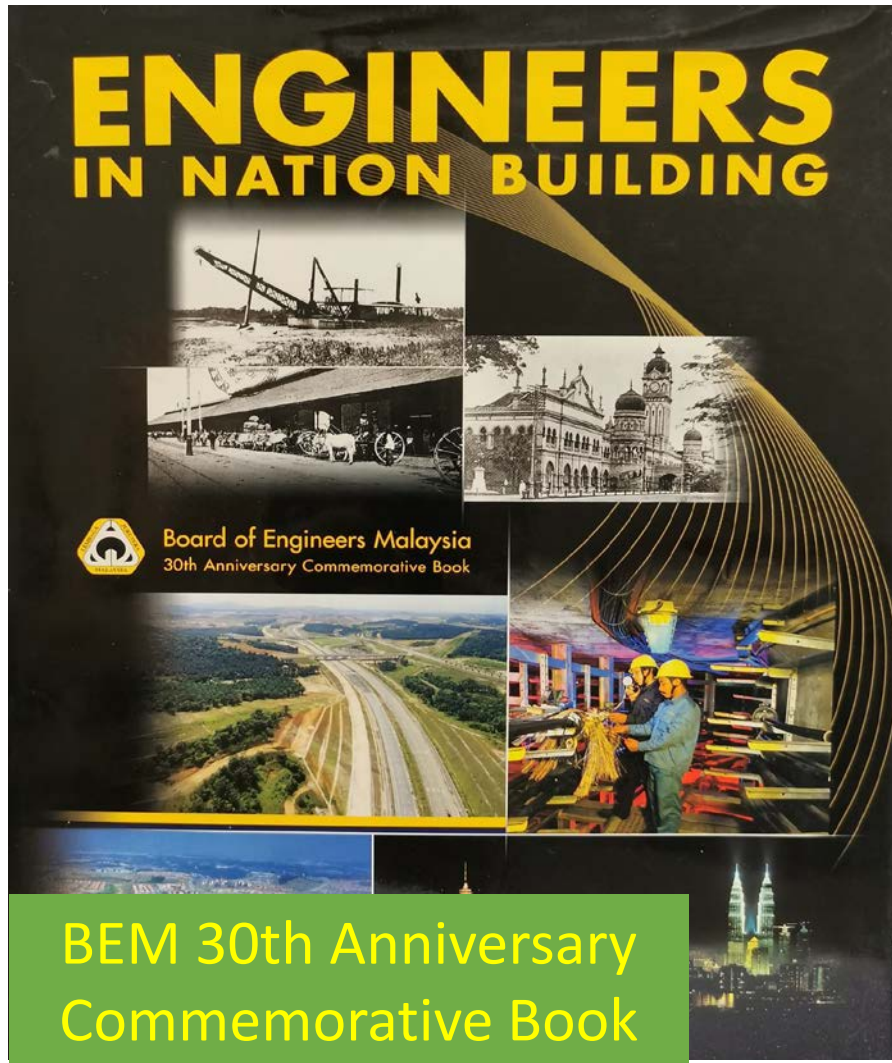
2. TYPES OF COMPLAINTS FROM THE PUBLIC

3. HOW BEM PROCESS THE COMPLAINTS

4. CASE STUDIES

5. Q & A





1. INTRODUCTION

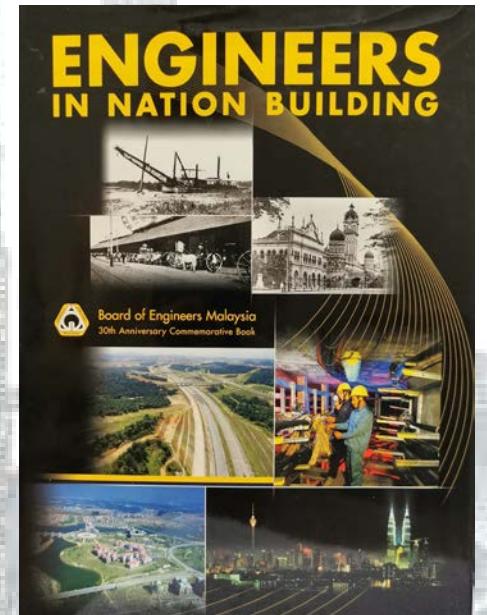
“ Engineering is a discipline that enriches the **quality of human life**. It is a practical, applied science.”

S.F. Owen - Director PWD Malaya 1964

“It is also an **instrument of civilization** destined to serve all people”

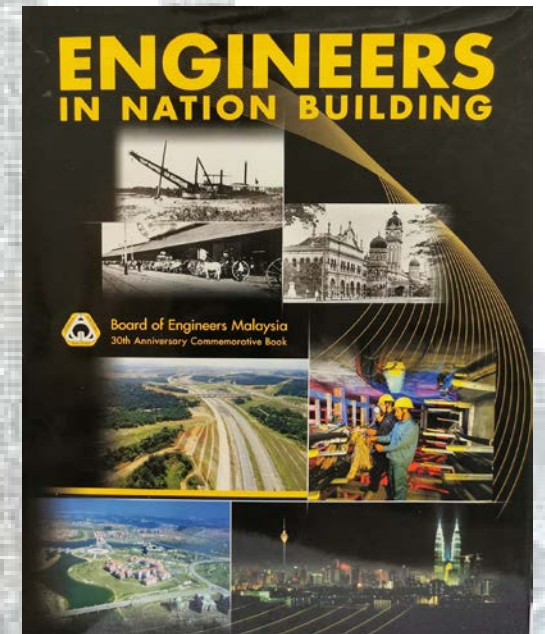


- Engineers today are **highly specialized professionals**
- Together with other professions, they work on projects that help **improve living conditions**
- They help to **bridge economic gaps & level social structures**





- Through their works, engineers help **lay the foundation for greater social-economic stability.**
- Engineering is referred to as the **bedrock of nation-building.**





PM: Jobs of the future are in technical fields

(NST 5.12.2020)

The **government aims to produce** more **policymakers and leaders among technical professionals** to ensure that the country's direction is in line with current technological developments.

The country's **technology-based agencies** and companies **must be helmed by technical professionals**.

We can **be proud** of the country's leading technical agency, such as the **Public Works Department, which has contributed a lot to the development of the country's infrastructure.**"



Self-certification by professionals : Introduction of CCC in 2007:

Implication:

- Authority to certify building fit for occupation had been **transferred** from local authority to the professionals.
- Professionals **owe a heavier responsibility to earn the trust** by exercising duty of care and diligence in discharging their professional services
- Professional Boards need to **monitor more closely** as added responsibility



GENERAL LIABILITY OF ENGINEERS

In general, Engineers are liable to the public:

- Under the Contracts Act
- Under tort and common law
- Under statutory Acts (UBBL, OSHA, CIDB, HDA etc)
- Under the **Registration of Engineers Act 1967**





2. TYPES OF COMPLAINTS FROM THE PUBLIC AGAINST PROFESSIONAL ENGINEERS

TYPES OF COMPLAINTS:

1. BUILDING DEFECTS

a. Architectural trade defects

- external & internal finishes
- passive fire provisions
- functionality of door, window, sanitary & water fittings
- wall & floor tiles





2. TYPES OF COMPLAINTS FROM THE PUBLIC AGAINST PROFESSIONAL ENGINEERS

TYPES OF COMPLAINTS:

1. BUILDING DEFECTS

b. Structural defects

What is the legal definition of structure:

Act 133, Street, Drainage & Building Act 1974

“Structural elements” means those parts of building which **resist forces and moments** and include foundations, beams, columns, shear cores, slab, roof trusses, staircases, load bearing walls but excludes doors & windows.



2. TYPES OF COMPLAINTS FROM THE PUBLIC AGAINST PROFESSIONAL ENGINEERS

TYPES OF COMPLAINTS:

1. BUILDING DEFECTS

c. Non-Structural defects

- **building apron settlement** (common complaint from house buyer)

although as non structural defect, but PE owes a responsibility to ensure it is well compacted before apron works as part of earthworks



2. TYPES OF COMPLAINTS FROM THE PUBLIC AGAINST PROFESSIONAL ENGINEERS

TYPES OF COMPLAINTS:

1. Building defects

d. Neighbouring building defects

- building cracks on adjacent / neighbouring buildings during or after construction stage (especially on the extended portion)
- perceived stability issue due to neighbouring extension works



2. TYPES OF COMPLAINTS FROM THE PUBLIC AGAINST PROFESSIONAL ENGINEERS

TYPES OF COMPLAINTS:

1. Building defects

e. M&E defects

- wiring jointing from DB to end points
- wrong height of plug points in wet area/ Residual Current Device as per ST requirements
- equipment for fire active protection
- water pipes leakages (mech/civil)



2. TYPES OF COMPLAINTS FROM THE PUBLIC AGAINST PROFESSIONAL ENGINEERS

TYPES OF COMPLAINTS:

2. PE not responding to complaints from client or house buyer
3. Incompetency of PE in delivering their professional services
(repeated correction by client technical teams, unfamiliarity with IBS system, slow in responding to NCR)



2. TYPES OF COMPLAINTS FROM THE PUBLIC AGAINST PROFESSIONAL ENGINEERS

TYPES OF COMPLAINTS:

4. Negligence in supervision
(normally by endorser)
5. Over-certification for progress payment purpose
6. Forgery in documents
 - Form Gs
 - local authority letter



2. TYPES OF COMPLAINTS FROM THE PUBLIC AGAINST PROFESSIONAL ENGINEERS

TYPES OF COMPLAINTS:

7. Untraceable PE especially for small projects managed by runners
8. Flash floods
9. Roof leaks



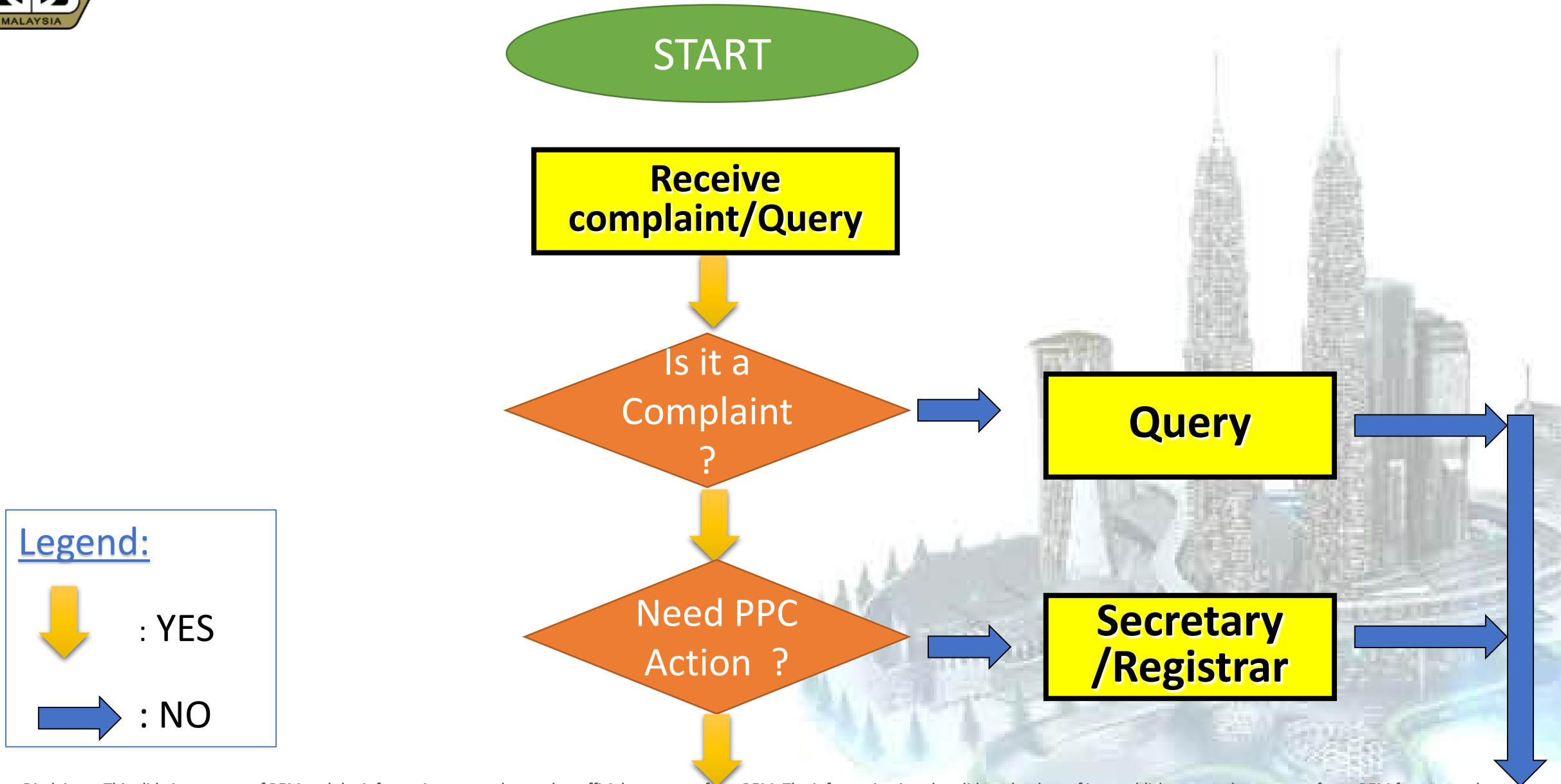


3. HOW BEM PROCESS THE COMPLAINTS





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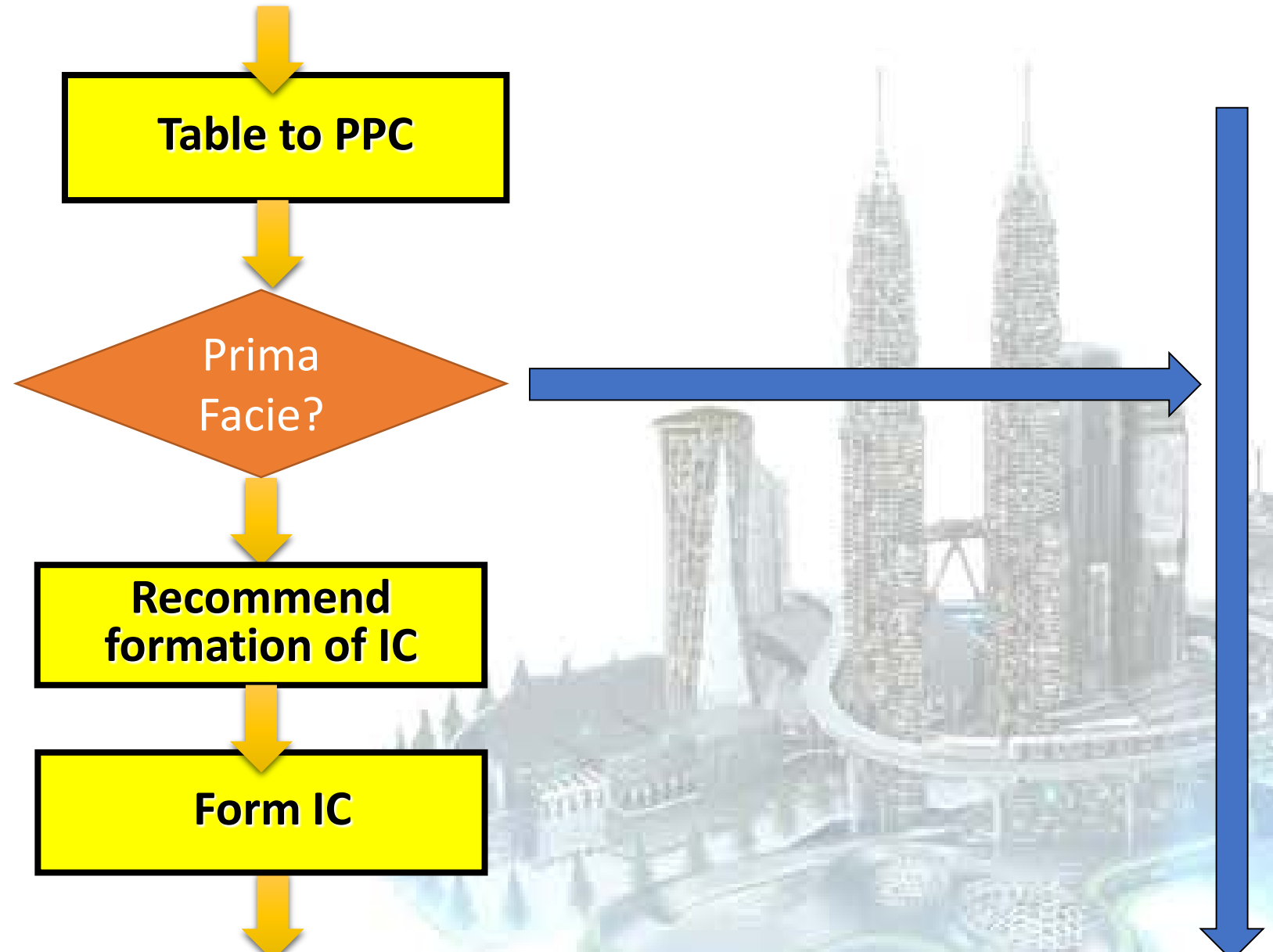
Legend:

↓ : YES

→ : NO




3. HOW BEM PROCESS THE COMPLAINTS



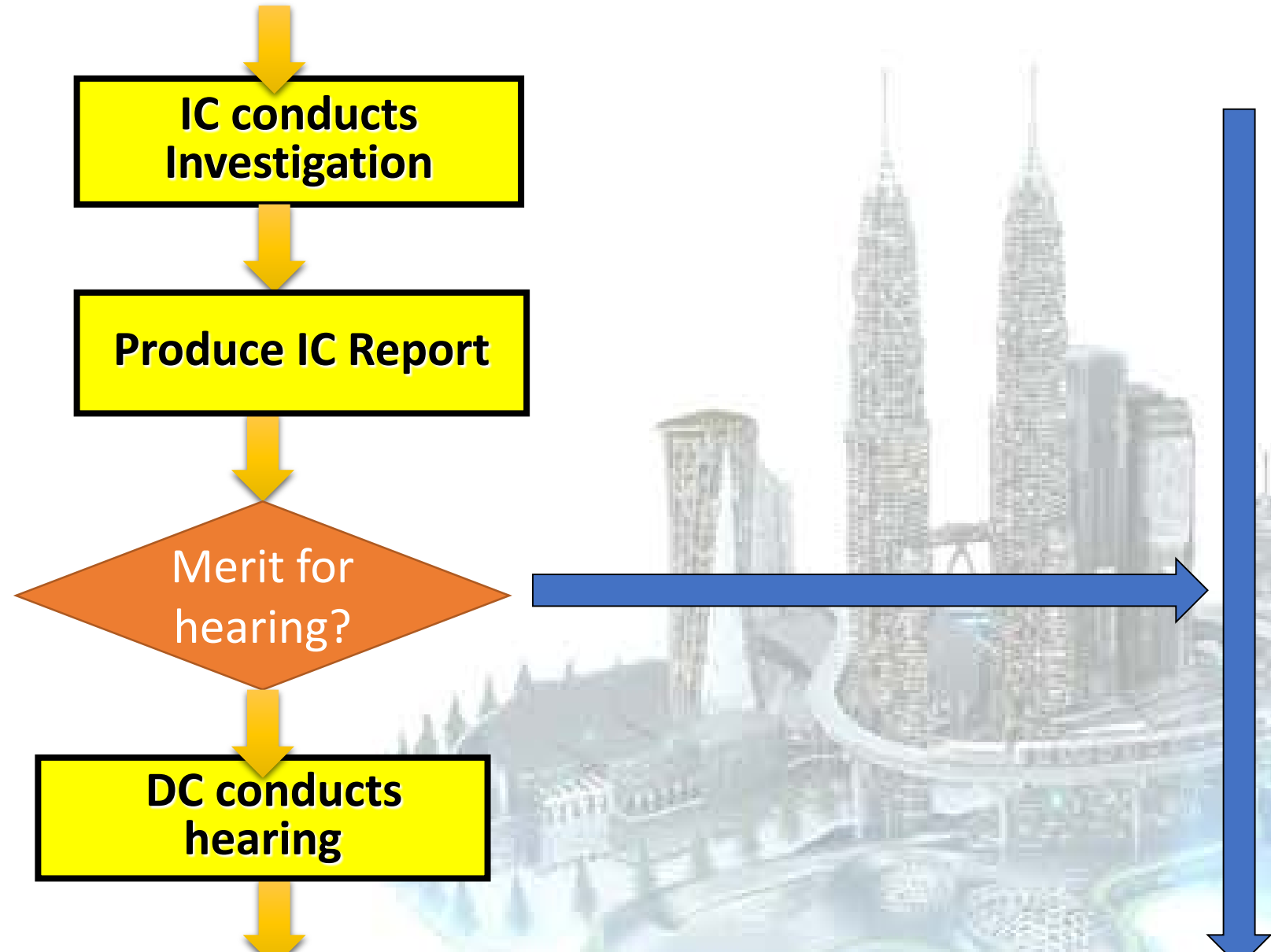
Legend:

 : YES

 : NO

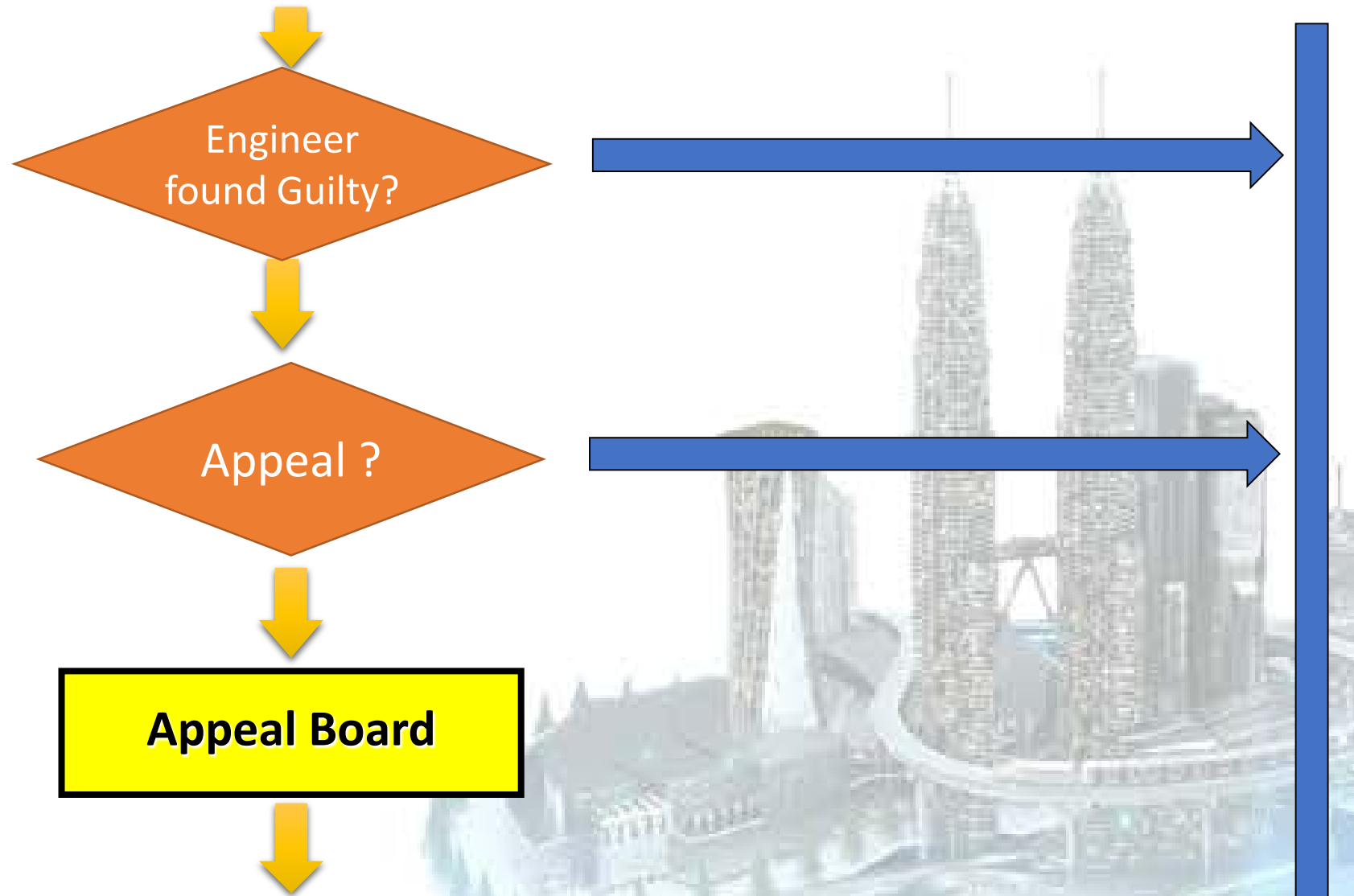


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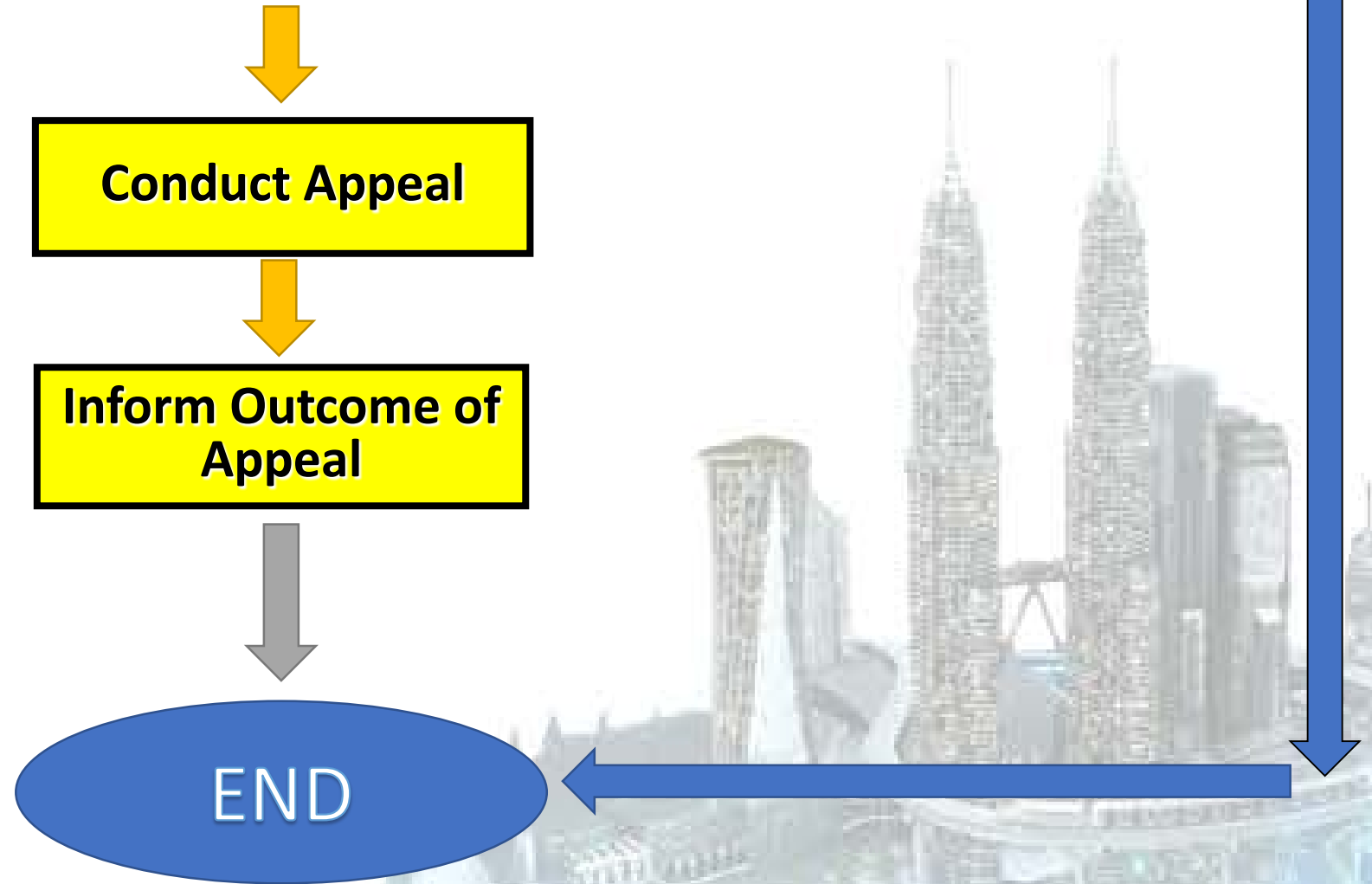


3. HOW BEM PROCESS THE COMPLAINTS





3. HOW BEM PROCESS THE COMPLAINTS





PENALTIES UNDER THE REGISTRATION OF ENGINEERS ACT 1967

The DC can order the following penalties on an Engineer found guilty of misconduct :

- **a written warning or reprimand;**
- **a fine of not more than RM 50,000;**
- **suspension of registration for not more than 2 years;**
- **cancellation of registration; and**
- **any combination of the above.**



CASE STUDIES





Case Study #1





4. **CASE STUDY 1 : Client engaging runner to manage project**

1. A restaurant owner approach **a runner** to manage the construction of a small building as package deal for plan submissions
2. The owner **had not met any of the consultants** (Building plan, C&S or M&E)
3. When the building was completed, the **Submitting Person for Building Plan could not be traced**
4. Owner had to engage another Architect to endorse the submitted plan

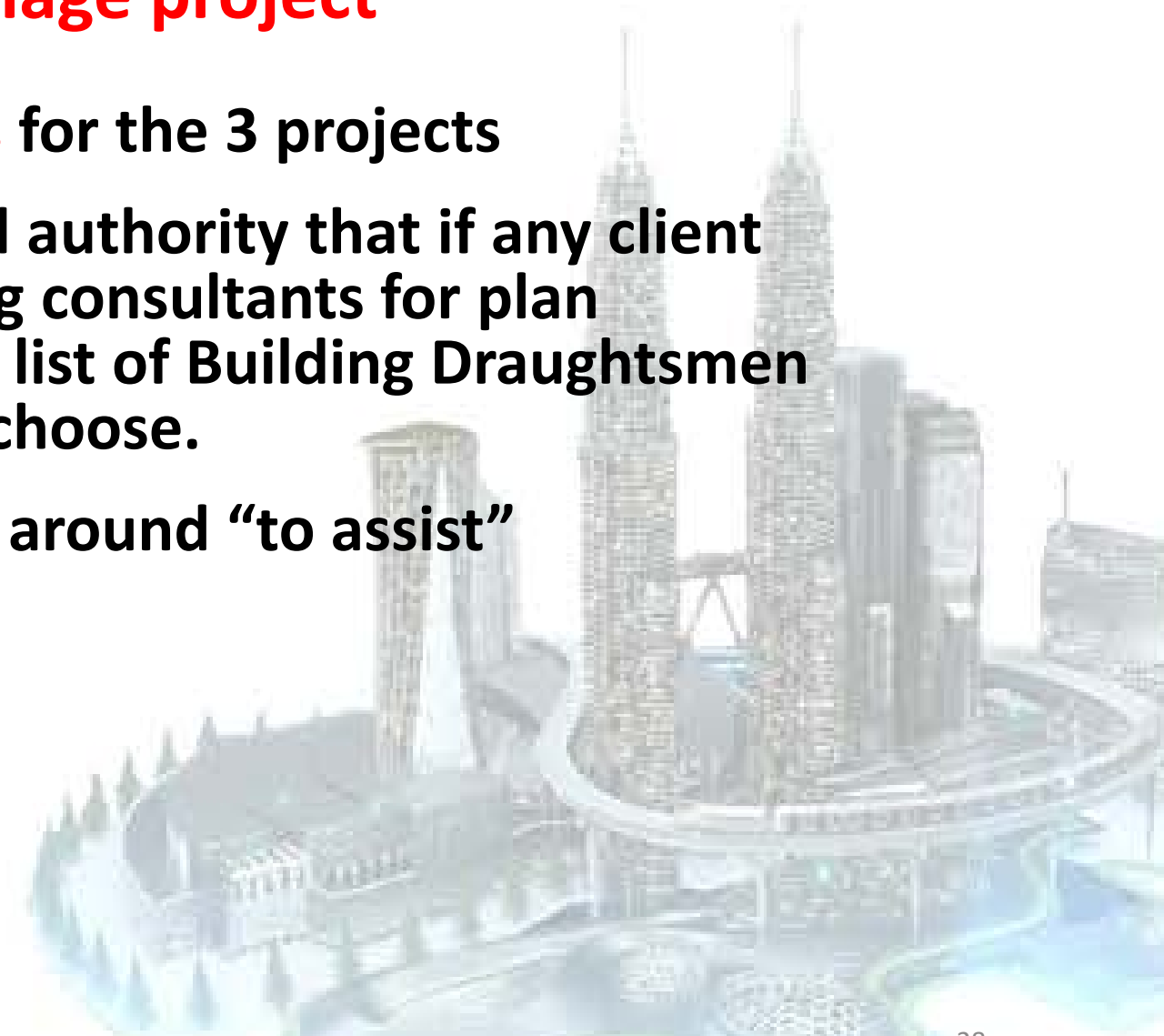


4. **CASE STUDY 1 : Client engaging runner to manage project**
5. However, owner **failed to contact SP(PE) for Road & Drain to sign Form G17** and thus made a complaint to BEM
6. IC was formed to investigate
7. SP(PE) was interviewed by IC and informed that someone had **forged his signature and PE stamp** for R&D plan's submission using his old office address that is vacant
8. He discovered there were **two other similar cases of forging his signature and PE stamp** for two small projects in the **same local authority area**



4. **CASE STUDY 1 : Client engaging runner to manage project**

9. SP(PE) made 3 **police reports** for the 3 projects
10. IC was informed by that local authority that if any client seek their advice on engaging consultants for plan submission, they will show a list of Building Draughtsmen or architect for the client to choose.
11. There are also some runners around “to assist”





4. **CASE STUDY 1 : Client engaging runner to manage project**

ADVICE to Public intending to submit plans

- 12. Avoid using runner for plan submission to local authority**
- 13. Be cautious if project is awarded to contractor as a package deal which includes submission of plans**
- 14. Try to meet the consultants as submitting persons and study their company's profile**





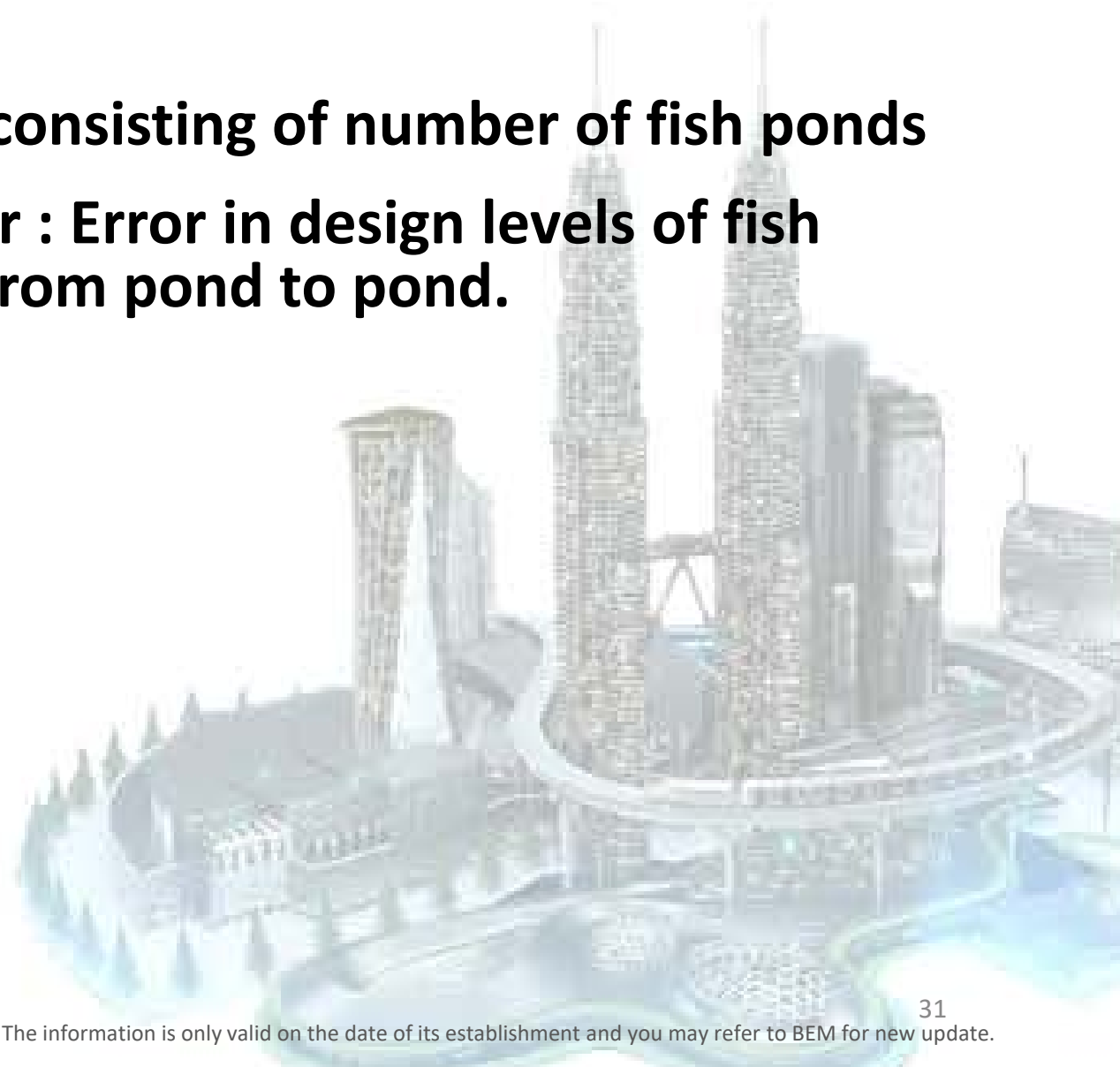
Case Study #2





4. **CASE STUDY 2 : Aquaculture Project**

1. **Project : Aquaculture project consisting of number of fish ponds**
2. **Complaint from Project Owner : Error in design levels of fish ponds. Water could not flow from pond to pond.**





4. CASE STUDY 2 : Aquaculture Project

- 1. Project : Aquaculture project consisting of number of fish ponds**
- 2. Complaint from Project Owner : Error in design levels of fish ponds. Water could not flow from pond to pond.**
- 3. IC's investigation :**
 - Engineer had designed the levels of the ponds based on old plans that were prepared during earlier Phase 1.**
 - When ponds were completed, it was discovered that the difference in invert levels too small and water could not flow from pond to pond.**
- 4. DC's decision : Engineer found guilty.**
- 5. Reason : Failed in duty of care to check that data is correct.**



Case Study #3





4. CASE STUDY 3 : Industrial Plot

- 1. Project : Industrial plots with infrastructure but without building.**
- 2. Complaint from Purchaser of 1 plot :**
 - Engineer issued Certificate of Completion certifying that project has reached Vacant Possession stage and is 100% completed.**
 - Purchaser visited site and found that the infrastructure works incomplete → street lighting not fully installed, TNB Substation and sewerage works still under construction.**
- 3. Engineer appointed as civil engineer & SO**



4. **CASE STUDY 3 : Industrial Plot**

4. IC's investigation :

- **Engineer appointed as civil infrastructural engineer and responsible for certifying the civil infrastructure works and also as the SO under the contract.**
- **There was another engineer responsible for the M&E works.**
- **Engineer had certified and signed that the works were completed up to 100 %.**
- **Engineer stated that since he was appointed only to do civil infrastructural work, so it was understood that what he signed and issued was only for civil infrastructural work.**



4. **CASE STUDY 3 : Industrial Plot**

4. IC's investigation :

- **Engineer admitted that he should have signed the vacant possession certificate specifying that the 100 % completion was only for civil infrastructural works.**

5. DC's decision : Engineer found guilty.

6. Reason : Failed to discharge his professional duty with due skill care, diligence and good faith.



Case Study #4





4. CASE STUDY 4 : Commercial Development

- 1. Project : Commercial Development comprising 59 units of 1½ Storey Shophouse-Office.**
- 2. Complaint from Purchaser of 1 Shophouse-Office unit :**
 - Building and ground settlement (fill ground).**
 - Cracks in Building, brick wall and concrete floor.**
 - Sagging of ground floor slab was observed.**
 - Cracks in columns.**
- 3. Engineer appointed to render full professional services for the structural engineering component of the Project.**



4. **CASE STUDY 4 : Commercial Development**

4. IC's investigation :

- **The site is located on an earth platform of filled ground with the depth of fill varying from 4 to 19.5 metres.**
- **The building superstructures were all supported on 150 mm square RC piles.**
- **The ground floor slabs of all units were generally concrete slabs supported on grade which is of filled ground.**
- **Due to the vast thickness of the filled ground, soil settlement was almost certain to happen and the ground slabs would tend to deflect and cracks would be generated in the slabs.**



4. **CASE STUDY 4 : Commercial Development**

4. IC's investigation :

- **The Engineer was aware of the implications of the filled ground but still decided that the ground floor slabs should be supported on grade.**
- **The majority of the cracks were found in the ground floor slabs where the soil under the slabs had settled.**

5. DC's decision : Engineer found guilty.

6. Reason : Failed to have full regard to the public interest in designing the ground slab as supported on grade despite the nature of the soil.



Case Study #5





4. CASE STUDY 5 : Housing Development

- 1. Project : Housing Development comprising 173 units of 2-Storey Terrace Houses.**
- 2. Complaints from several House Purchasers :**
 - House purchasers bought houses from the Developer and moved in after they received vacant possession.**
 - The car porch and the backyard have settled several cm and there are cracks in the car porch slab as well as in the front perimeter wall.**
 - The Developer carried out repairs several times but the cracks still recur.**
 - House owners worried as defects liability period is ending.**



4. **CASE STUDY 5 : Housing Development**

3. **Engineer appointed as the C&S consultant and signed all the Borang Gs for civil and structural works.**

4. **IC's Investigation :**

- **The project covers both high as well as low-lying areas.**
- **Backfill was necessarily carried out on the low-lying areas.**
- **Because of the soft compressible clayey soils in the low-lying areas, soil surcharge with prefabricated vertical drains was carried out.**
- **Ground settlement monitoring was carried out and the surcharge was removed when the ground consolidation had reached 90 %.**



4. **CASE STUDY 5 : Housing Development**

4. IC's Investigation :

- **As a result of secondary consolidation in the filled areas, structures that were non-suspended and located on top of these filled areas e.g. car porch and perimeter wall suffered cracks.**
- **These cracks were the basis of the complaints from the house owners.**
- **There is no adverse impact on safety as all the houses were designed and constructed to be suspended with 'piles to set' and thus, the phenomenon of secondary consolidation would not compromise the safety of the residents.**



4. **CASE STUDY 5 : Housing Development**

5. **DC's decision : Engineer found not guilty.**

6. **Reasons :**

- **Because of the soft compressible clayey soils in the low-lying areas, the Engineer had specified soil surcharge with vertical drains.**
- **He had allowed the ground consolidation to reach 90% before construction work on the houses began.**
- **He had designed the building structure to be on piles.**
- **Further consolidation took place during the construction phase and the driveway slab was among the last structure to be constructed.**



4. **CASE STUDY 5 : Housing Development**

6. **Reasons :**

- **Subsequent ground settlement monitoring showed that the yearly settlement was approaching zero i.e. very minimal.**
- **The DC found the Engineer to have acted in accordance with the standard of what a responsible Engineer would do in a similar situation.**





Case Study #6





4. CASE STUDY 6 : 2 Storey Bungalow

1. Project : Construction of a new 2-storey Bungalow.

2. Complaint from Neighbour :

- A 2-storey bungalow being constructed on a steep slope behind my house.**
- The engineer and contractor had cut the hill slope and the trees without considering the safety of my house.**
- Every time it rains, water and mud is washed down into my house and compound.**
- I live in fear for my safety.**

3. Engineer appointed as C&S engineer



4. **CASE STUDY 6 : 2 Storey Bungalow**

4. IC's investigation :

- **The site comprises steeply sloping ground, falling some 10 m from front to rear where Complainant's house adjoins site**
- **The natural path for drainage is through the Complainant's lot and into a roadside drain fronting it.**
- **Engineer proposed a pumping system for the drainage of the site.**
- **However, system did not work well as contractor used a portable rather than a permanently installed pump.**
- **Engineer had failed to take reasonable steps to reduce foreseeable adverse effects from the civil works.**



4. **CASE STUDY 5 : 2 Storey Bungalow**

5. **DC's decision : Engineer found guilty.**
6. **Reason : Failed to take reasonable steps to reduce foreseeable adverse effects of the construction on the environment when verbal instructions given to the contractor were ignored.**





Q & A



THANK YOU



“Committed To Engineering Excellence”

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