CH2- Profession and Ethics

2.1 Profession: Definition and Characteristics

2.2 Professional Institutions

2.3 Relation of an Engineer with Client, Contractor and Fellow Engineers

2.4 Ethics, Code of Ethics and Engineering Ethics

2.5 Moral Dilemma and Ethical Decision Making

2.6 Detailed Duties of an Engineer and Architect

2.7Liability and Negligence

Concept of reasonable skill and care:

Every person who wants enter in to learned profession undertakes to bring to the exercise of it a reasonable degree of care and skill.

The degree of skill that required is the skill of an ordinary component person exercising that particular art.

Breach: failure to perform an obligation undertaken

Tort: civil mistake

Some times while performing engineering duties, engineers happen to harm or damage to other unconcerned, non related person or property.

The engineers perform jobs more attentively towards their client/ organisation/ employer but even doing so they happen to cause damages or harms to these who are not concerned to the jobs at all.

That happens because of unnecessary incidental negligence is doing jobs. Incidental negligence seeks compensations for the jobs.

This type of compensation to unconcerned parties/ property is tort liability.

- Liability is a troublesome responsibility.
- It is a legal, binding or an obligation.
- Liability: is legal responsibility, accountability, responsibility, and burden

- Engineers/ professionals are active actors in the society
- attention towards all likely to be affected parties are not paid, liability are likely to occur.
- Liabilities occur because of negligence in performance.
- The liability that most engineers face is Tort liability and
- organizational liability is called vicarious liability.

Two types of liabilities that must engineers face

- Tort liability ; tort is something wrong but not criminal
- Organizational liability or vicarious liability

Vicarious liability:

A person who commits a tort is a liable for the damage that he causes. What about a person who did not commit a tort?

When an employee commits a tort in the course of his / her employment, his/her employer will be liable for the tort of his /her employee, which is called a vicarious (explicit) liability.

For example, during the course action if a servant commits a tort his master will be liable for the tort of his employee.

Tort liability is private wrong or civil wrong for which a person may have to pay compensation. Torts is any act or not act (omission) that infringes (break) an responsibility imposed by laws which gives injured party the right to bring an action for the damages or loss.

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Negligence:

- **Careful, care free**
- **Careless**
- **Types**
- **Subjective (state of mind) and objective (conduct absence of skill and care)**
- **Heedlessness (without willingness)and recklessness (ignores consequence)**
- **Advertent (intentionally)and inadvertent**
- **Contributory (conduct of doing job)**
- **Reasonable person**
- **Professional standard**
- **Employer liability**
- **Occupiers liability**
- **Trespass (infringe)**

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Elements of TORT:

Duty: a plaintiff in a tort case must establish that the defendant (a person accused in a legal case) had a duty (moral or legal obligation) to the plaintiff. (The questions is not whether the defendant tried in good faith, to be careful, but whether his conduct was up to the standard of a reasonable persons conduct under the circumstances)

Breach: a plaintiff must prove that the defendant had breached the duty. (The defendant act fell below the standard of care of reasonable persons

Proximate / legal case: the plaintiff must prove that the acts of defendant actually caused the physical harm or injury to the plaintiff.

Damages: A plaintiff must prove damage.

Damage without injury

Injury without damage

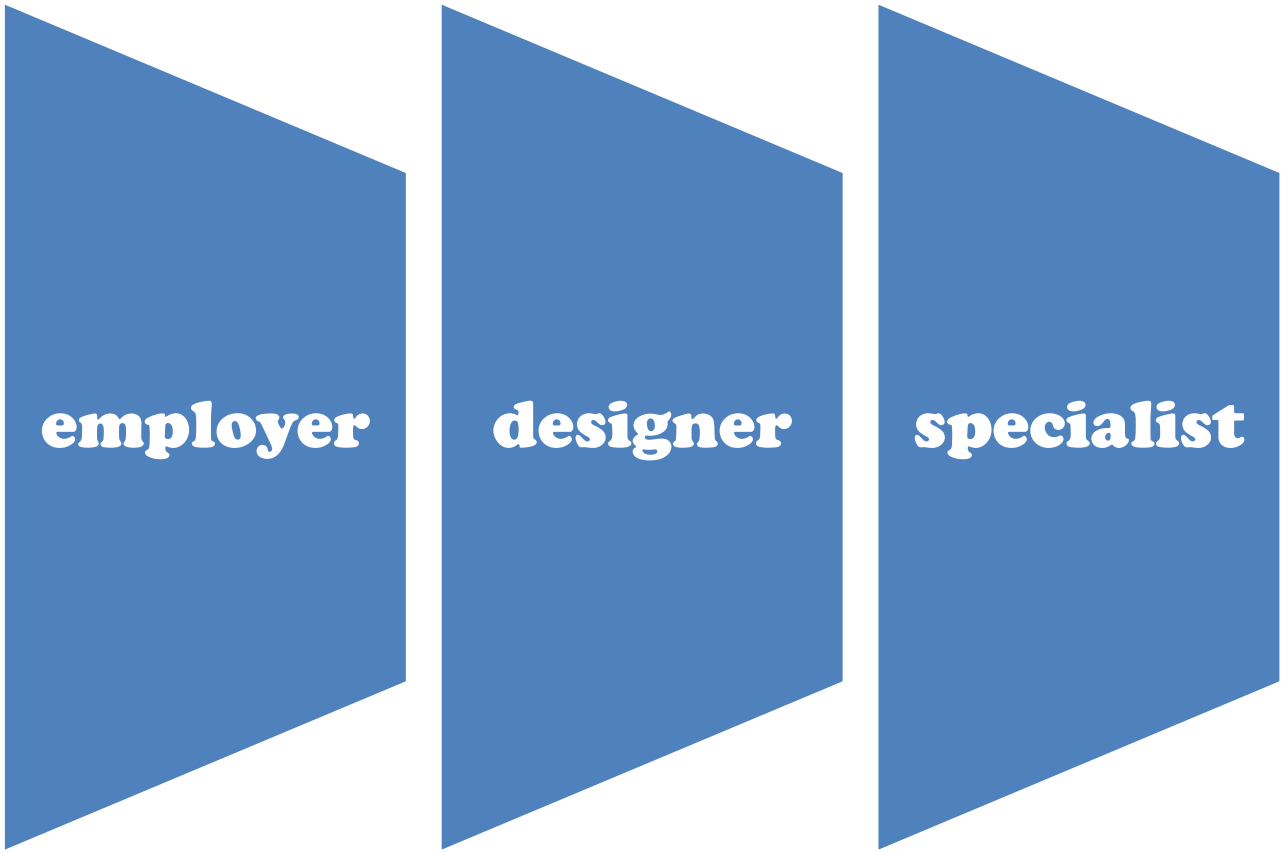
Principles of tort law:

- In order to succeed in action in a tort, a plaintiff must prove :
- The defendant owed to the plaintiff
- The defendant was in breach of that duty by his/her conduct and
- The plaintiff has suffered damage or injury as a result of that breach.
- **Objective of tort law:** Appease (settle) , Deter (prevent), justice (fair dealing)
- Compensation to victims
- Transferring the cost of injury from victims to the person responsible for that
- Prevention of repetition of harmful action

DUTIES/ LIABILITIES/ of designers or professional

1. Negligent, misstatement.
2. Statutes, bylaws, and standards
3. Examination of site above or below ground surface
4. Public and private rights
5. Plans. drawings/ specification
6. Suitability of materials
7. Suitability of Method of execution
8. Novel/ risky design and employers interference in design
9. Revision of design during execution

- Delegation of authority



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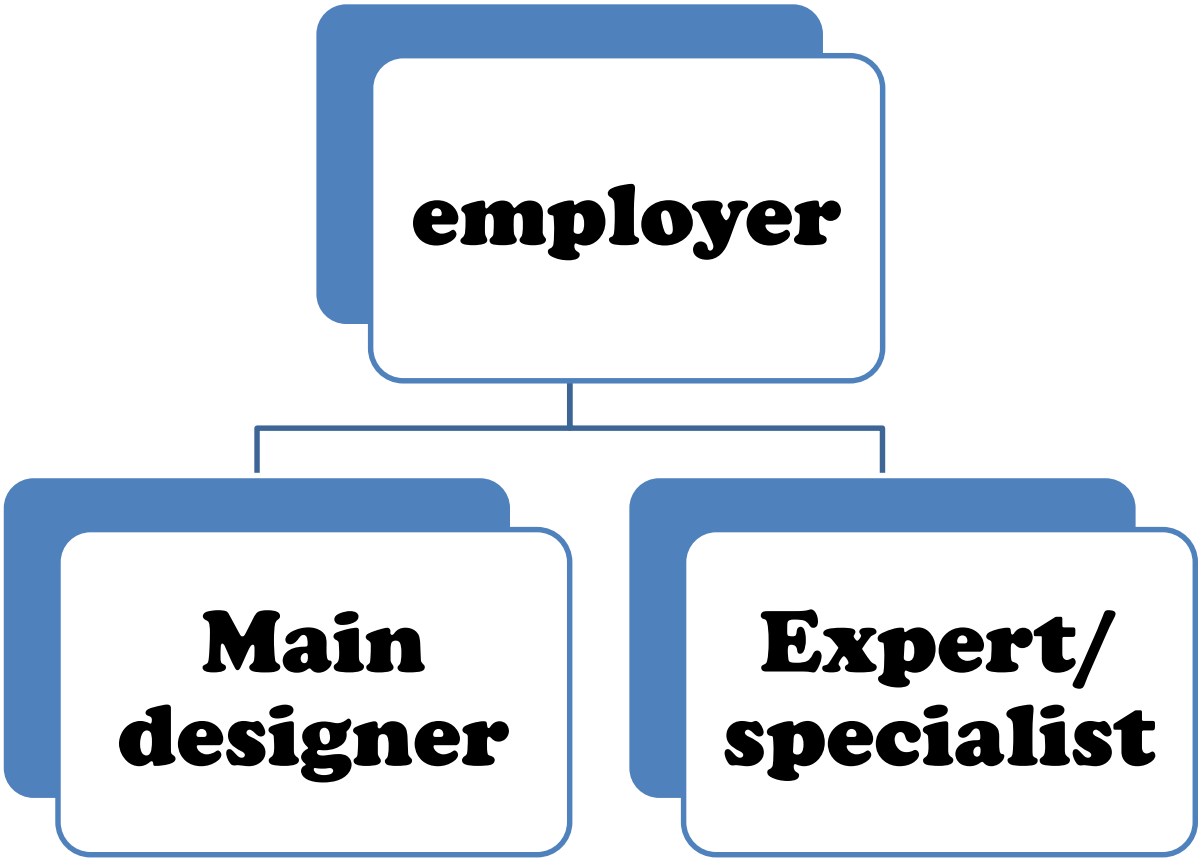

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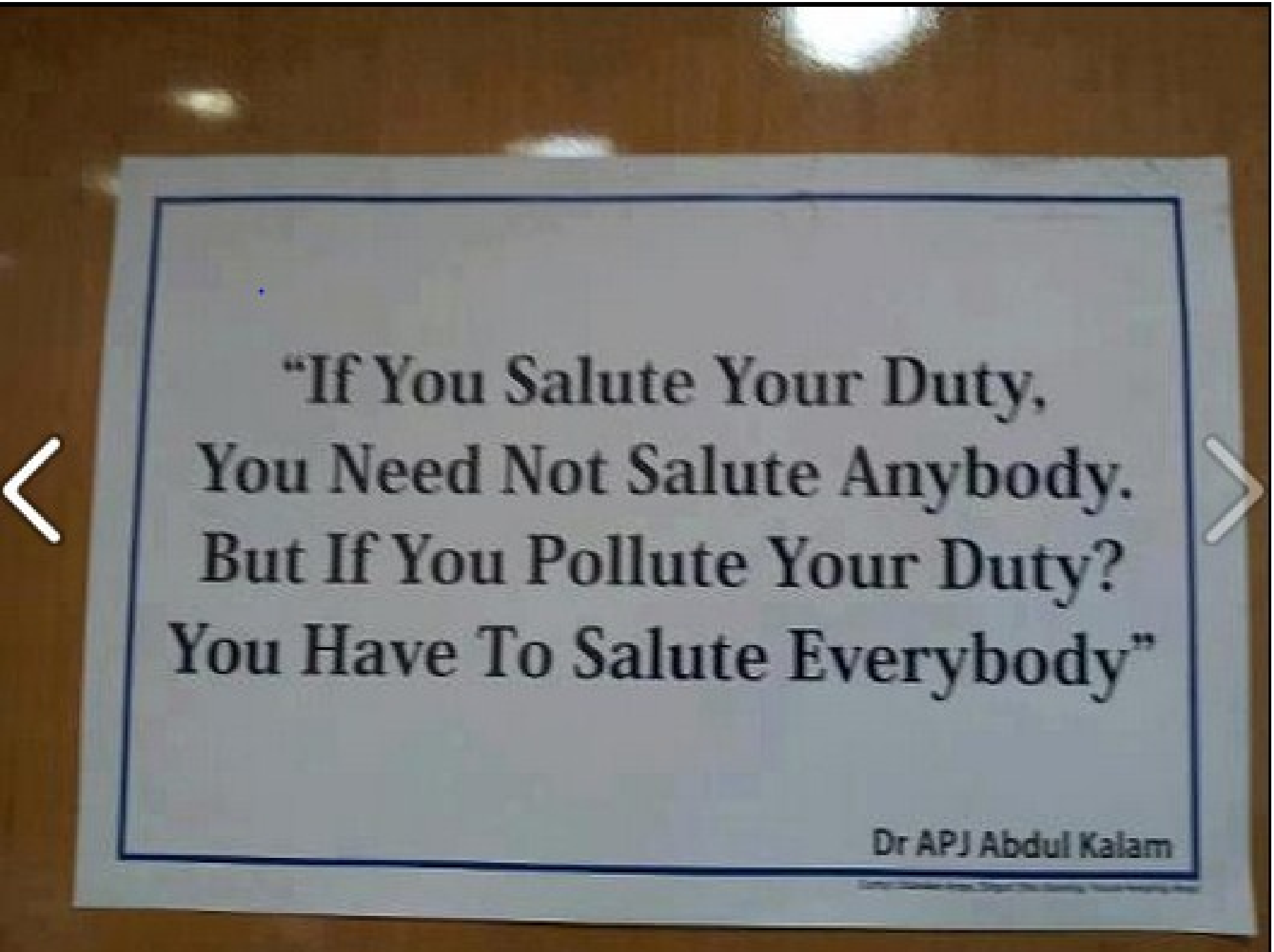
"If You Salute Your Duty,
You Need Not Salute Anybody.
But If You Pollute Your Duty?
You Have To Salute Everybody"
Dr APJ Abdul Kalam

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Case

A client came to designer's and asked to design a multistoried building. The soil type is found not suitable for that type of structure. The designer hesitated to design a building. The Client revealed his/her intention as that he/she actually is not going to build that structure. But he/she wanted to collect fund from outside sources (bank) on behalf of that design and he/she wanted to utilize that money in other business. What should a designer do in such situation?

STEP

1. **Determine the facts in the situation**
2. **Determine the stake holders**
3. **Assess the motivation of the stakeholders**
4. **Formulate the alternative solutions**
5. **Seek additional assistance as appropriate**
6. **Select the best course of action**
7. **Implemented the selected solution**

- **ABC Company awarded a contract of building work in KMC after dismantling old building. A person request for the order from the court for stopping the construction work, as the old building was offered to the KMC only to run offices till the building exists. Once the building is dismantled it must be his land as per his claims. Now, from the engineering aspects, what do you suggest and clarify the situation.**

Read the case carefully and Discuss the situation.

You are asked to evaluated and provide certificate to users committee UC for final payment procedure of an irrigation canal works in Dadeldhura constructed through users committee. You found that the canal is excavated by excavator (backhoe) and complete as per design. As per public participatory provision in Act it is prohibited to use heavy equipment in participatory approach work, because the motivation of public participation is to generate employment and to give opportunity to local labour. The UC requested to you to provide the certificate because the young people are not available in village in these days so they use equipment.

•As an expert of consultant you were asked to monitor (performance check) new water pump installed for a water supply project financed by an INGO and handled by local users committee (UC) at rural area of western Nepal. The project to be completed by the end of December 2009, otherwise the donor would stop the payment. When you visited the site at the mid of December 2009, you found that the water pump was not installed. The UC informed the pump is ordered to supplier of Nepalgunj and going to be delivered at site within few days and the UC requested you to submit the performance check report so that they could install the water pump after some time and it will be beneficial to about 300 households of the project area. Discuss the situation

HT: The Melamchi project can at least carry out temporary black topping of the busy areas and spray water to minimise dust

Dust is killing many residents of Kathmandu Valley. Already a polluted valley, digging of roads to lay water pipelines for the Melamchi Drinking Water Project (MDWP) has aggravated the situation causing respiratory problems like bronchitis and asthma and chest pain, especially to commuters and those residing close to the roads.

The MDWP did not come up with an appropriate plan to minimise this public health hazard well before digging around 1000-km long water pipelines to distribute drinking water throughout the valley, which has been facing shortages of drinking water even during the rainy season.

Digging roads for laying water pipelines is not only the cause of dust and environmental pollution, carbon emissions from old vehicles, brick kilns located close to settlements, heavy concentration of population and mismanagement of garbage are also responsible for the sorry state of affairs.

Air quality of the valley will not improve unless some drastic measures are taken to control dust, smoke and pollution, the three major sources of health problems.