

Why Legal Dimension

- Knowledge of law helps engineers in their practice
- Many of engineers actions or inactions could have legal implications for your organization
- Engineers need know enough about the legal aspects of engineering practice to recognize when need to take certain actions or to know when legal counsel would be prudent

to seek legal advice



Ref: Engineering your future, S.G. Walesh

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Professional and legal considerations

Basic principles and broad guidelines of law needed by entry level engineers/technical professionals

1. Preparing **contracts** for services
2. **Interpretation of contracts** once a project is underway
3. Managing to minimise personal and organisational **liability**



Dunham, C.W, RD Young and JT Bockrath, 1979. Contracts, specifications and law for engineers, 3rd Ed/ New York: McGraw-Hill Book Company.

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Professional and legal considerations

4. Anticipating and/or preparing for **expert witness** testimony
5. Being aware of **requirements in laws** and rules
6. Being aware of the ways in which government may provide **funding** for client's projects
7. Being aware of relevant pending or recent **legislation** and possible **impacts** on projects



Professional and legal considerations

- **Breach:**
 - Violation of a right, a duty or a law, either by an act of commission or by nonfulfillment of an obligation
- **Fraud:** ← cheating
 - Intentionally deceitful practice aimed at depriving another person of his rights or doing him injury in some respect
- **Negligence:**
 - “breaches..duty to exercise requisite care and expertise..below the appropriate standard of care.”
- **Liability:**
 - Being bound or obligated according to law or equity



*Some engineering services can expose the firm to **liability***

- Participating in necessary conferences & preliminary studies
 - **Breach**: contract promised X meeting, only had Y
- Interpreting physical restrictions as to the use of the land
 - **Negligence**: failed to allow for building set backs ← Space between a building and a street or between 2 buildings
- Preparing drawings or verifying and interpreting existing drawings or construction
 - **Negligence**: proposed water main conflicts with natural gas line
 - **Breach**: drawings late
- Assisting in procuring of financing for project
 - **Fraud**: steers client to certain lender in return for kick-back ← receiving money
from lender



*Some engineering services can expose the firm to **liability***

- Assisting in presentation of a project before bodies possessing approval-disapproval power
 - **Fraud**: falsely claim that lower level authorities approval
- Preparing drawings and specifications for architectural, structural plumbing, heating, electrical and other mechanical work
 - **Negligence**: inadequate thermal insulation leads to fire
- Preparing cost estimates
 - **Negligence**: numerical error



*Some engineering services can expose the firm to **liability***

- Obtaining bid from contractors
 - **Fraud**: alter a bid to favour a contractor
- Inspecting the contractor's work on regular basis
 - **Negligence**: failing to note an unsatisfactory change (e.g. 1981 Kansas City Hyatt failure)
- Keeping accurate books and records
 - **Breach**: failing to do and submit when required



*Some engineering services can expose the firm to **liability***

- Preparing as-built drawings which show construction changes and final locations of mechanical and electrical lines
 - **Negligence**: incorrectly locating buried electric line leading to later excavation accident
- Issuing certificates of payment
 - **Negligence**: failing to verify work was performed
- And many more... ..



Question: Is it good to use these expressions in contracts and agreements?

Immeasurable terms

- High quality reports
- The highest level of quality
- Highly trained professionals
- All existing information will be gathered
- Only the best
- Guarantee successful project completion
-



Avoid using these expressions in contracts and agreements

- Reference:
W.M. Hayden, Jr.
Quality by Design
Newsletter, May
1987



Do Not Use

All existing information will be gathered

Coordination performed *at all times*.

Highly trained professionals

Prepare summaries of *all* meetings

Close coordination of *all stages* of the work

All required professional support

Will *complete all* project services

Is *exceptionally* well qualified

High quality reports

Only the best

The *highest level* of quality

Guarantee *successful* project completion

Example Replacements

Readily available information will be reviewed and collected as needed

Client will be apprised of approval progress

Professionals

Prepare summaries of monthly project status meetings with client

Perform interdisciplinary milestone review at 15%, 30%, 60% and 90%

The work will be performed by our staff

Will prepare and submit for review and approval normal engineering drawings suitable for construction

For this opportunity we are qualified because

Our reports will be suitable for

Staff selected will be appropriate for the work assigned

The work performed will satisfy contract requirements

Committed to perform as contracted for scope, schedule and budget

Legal Dimension

Engineers owe well-defined **duties** under the **law of contract** to their immediate clients, and under the **law of tort** to those persons whom they should reasonably have in contemplation as likely to suffer injury or loss as a result of acts of **negligence**. ← causing loss of health or property



Law of Contract

What the Law of Contract Does?

- A contract is a **legally binding agreement**.
- The law of contract in Hong Kong is based on and similar to English law but it is not identical.
- Most of Hong Kong's contract law is found not in legislation but in the reported decisions of the courts in Hong Kong and other common law jurisdictions.
- The first question is "Is there a contract?" That is a question of law (Common Law, Case Law), which depends on the intentions of the parties as decided by the Court, on the evidence (on the balance of probability).

Law of Contract

- The Court must be satisfied that the parties manifested a willingness to be bound together by the contract.
- Agreement usually arises from negotiation.
- Negotiation can usually be divided into invitations, offers, counter offers, rejections and acceptances.
- A contract is created only when both parties have shown a willingness to be bound by contract on terms agreed between them.

How are contracts made ?

Scenario A

- One day, your father/mother PROMOISED buying you a new notebook in 2023. (You have the mp3 recoding of it). But, he/she do not honour this promise.
- “Is there a contract?”
- Can you sue your parents?
- At the court, what is the chance for you to win in this case?

How are contracts made ?

- **Scenario B**
- Your sibling sell an apartment to you and you two go to the solicitor to sign the sale and purchase agreement.
- “Is there a contract?”
- Any difference when comparing to Scenario A?

How are contracts made ?

Scenario C

- You raise your hand to the coming bus and then board on it and pay the fare by Octopus card.
- “Is there a contract between you and the bus company?”

How are contracts made ?

Scenario D

- You buy a drink from a convenience store.
- “Is there a contract between you and the store?”

How are contracts made ?

Scenario E

- You do a shopping at a supermarket. You bring the items to the cashier for payment.
- In this case, who is the offeror and who is the offeree?

How are contracts made ?

❑ Intention

- ❑ **Commercial agreements** are presumed to be intended to be contracts. Family and social agreements are presumed to be intended not to be contracts .

Agreement is usually proved by showing acceptance of an offer.

❑ Offer

- ❑ The **proposal of a contract** is called an offer, which is the offeror's manifestation of willingness to be bound to the offeree in contract, in the terms of the offer. **An offer gives the offeree power** to make a contract by accepting those terms.
- ❑ An offer may be made to one or more individuals, a class, or the whole world.

A reward poster for the return of a lost pet.

❑ Acceptance

- ❑ Acceptance is the manifestation by an offeree of willingness to be **bound by a contract** in the terms of the offer.
- ❑ Acceptance may be by written or spoken words, or by conduct, or by any mixture of those methods.

❑ Consideration

- ❑ Those who want the court to enforce a promise must show they have **paid** a price for it.

Law of Tort

- an offense against an individual in the form of injury to his personal or property rights
- actions arise from duties and natural rights which exist between parties
- proof of intent may not be important

<http://study.com/academy/lesson/what-is-tort-law-definition-and-examples.html>



Law of Tort

Three elements must be proven in a tort action

- the defendant **owed** the plaintiff a **duty**
- the duty was **breached** by the defendant
- the **damage** resulted from the breach of this duty



Law of Tort

Tort due to negligence is defined as

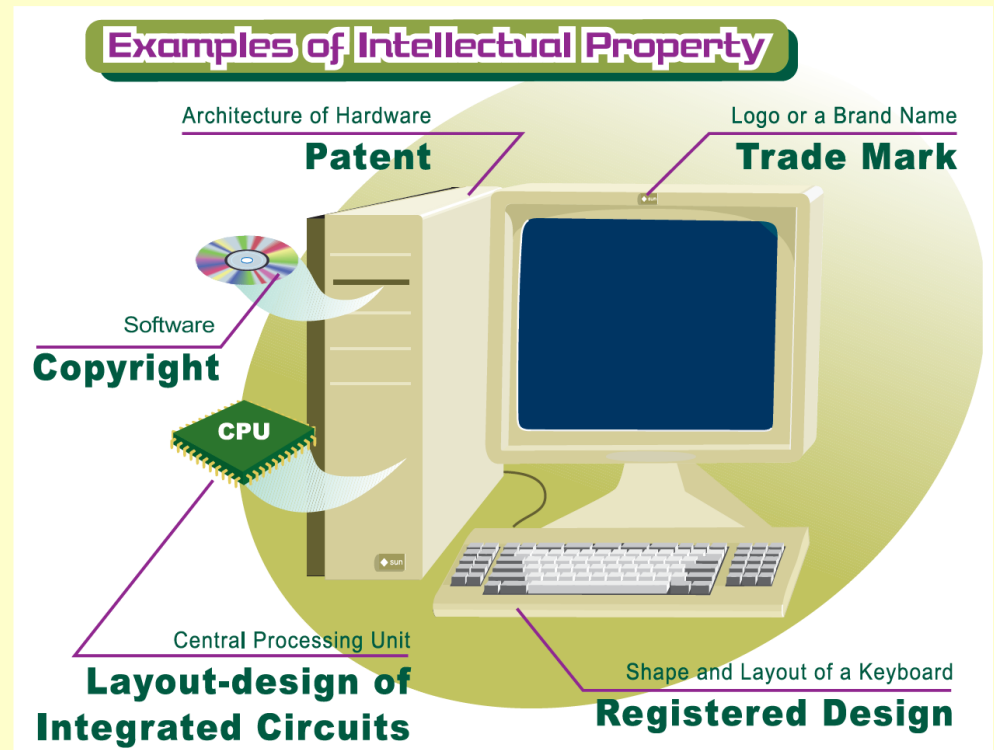
- the omission to do something which a reasonable man guided by those ordinary considerations or which ordinarily regulated human affairs would do
- negligence is present if harm could have been foreseen and prevented



Law of Intellectual property

Intellectual property is the name commonly given to a group of separate **intangible** property rights.

- trade marks,
- patents,
- copyright,
- designs,
- plant varieties
- layout-design of integrated circuits.



Legal Dimension

- Why do **engineers owe duties to the public**?
- Why the above duties are **not** likely in general enforceable to engineers by law of contract and/or torts negligence on behalf of members of the public?
- How can individual and engineering **ethical code** act as legal backing to ensure engineers to observe the above duties to the public?

[Check HKIE & ICAC Ethics in Practice](#)



Legal dimension video links for reference

2016 Volkswagen rigged 11 million vehicles to cheat on emissions tests, costing the company billions in fines and fixes. Here's a breakdown of the scandal.

Volkswagen emissions scandal: A timeline

<https://www.youtube.com/watch?v=Y5TvFY7xRDM>

Volkswagen's diesel scandal, explained

<https://www.youtube.com/watch?v=CQ4irwe3ZDk>