



# ETHICS FOR EROSION CONTROL PROFESSIONALS

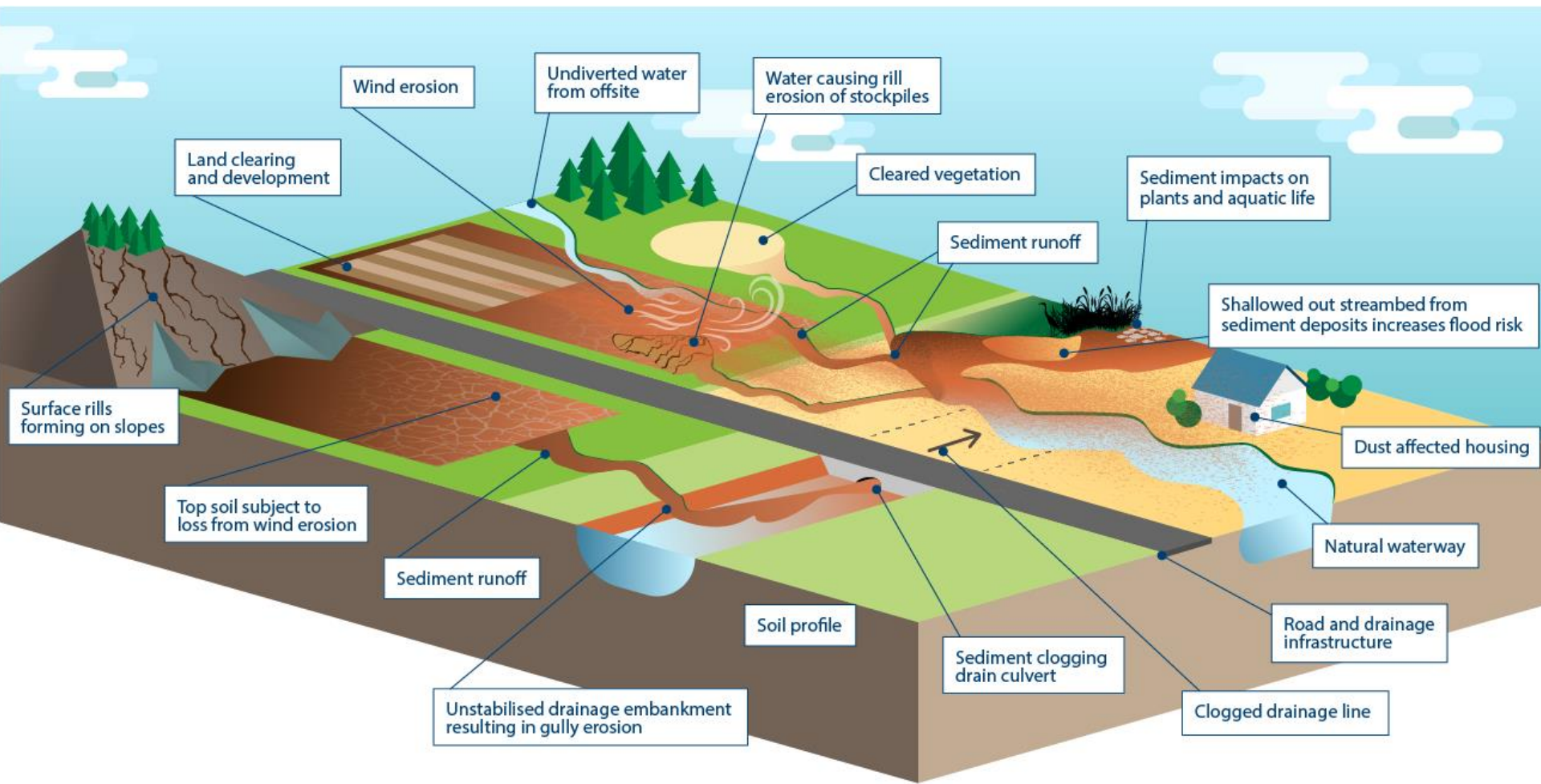
PROF. RUSLAN HASSAN, FASc.  
FASCE, FGS, FIEM, P.ENG, CPESC

# CONTENTS

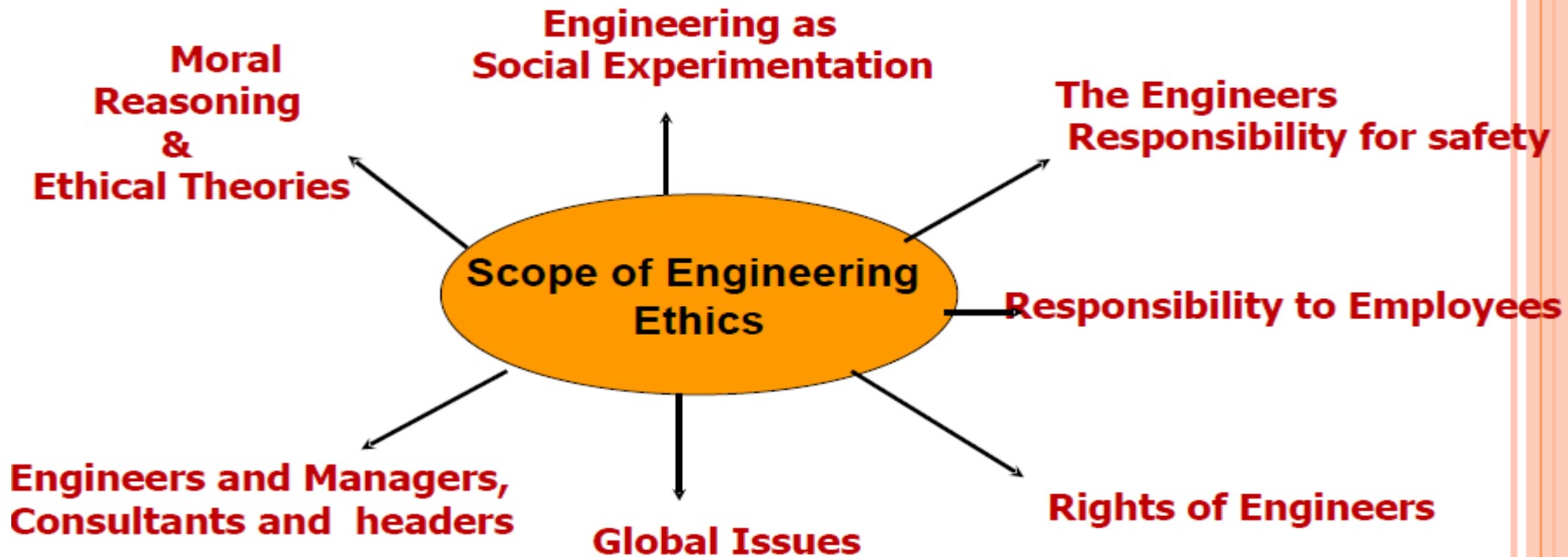
- INTRODUCTION
- HISTORY
- PROFESSIONAL ETHICS FOR ENGINEERS  
(ABET, BEM AND IEM)
- PROFESSIONAL ETHICS FOR CPESC
- DISCUSSION
- CONCLUDING



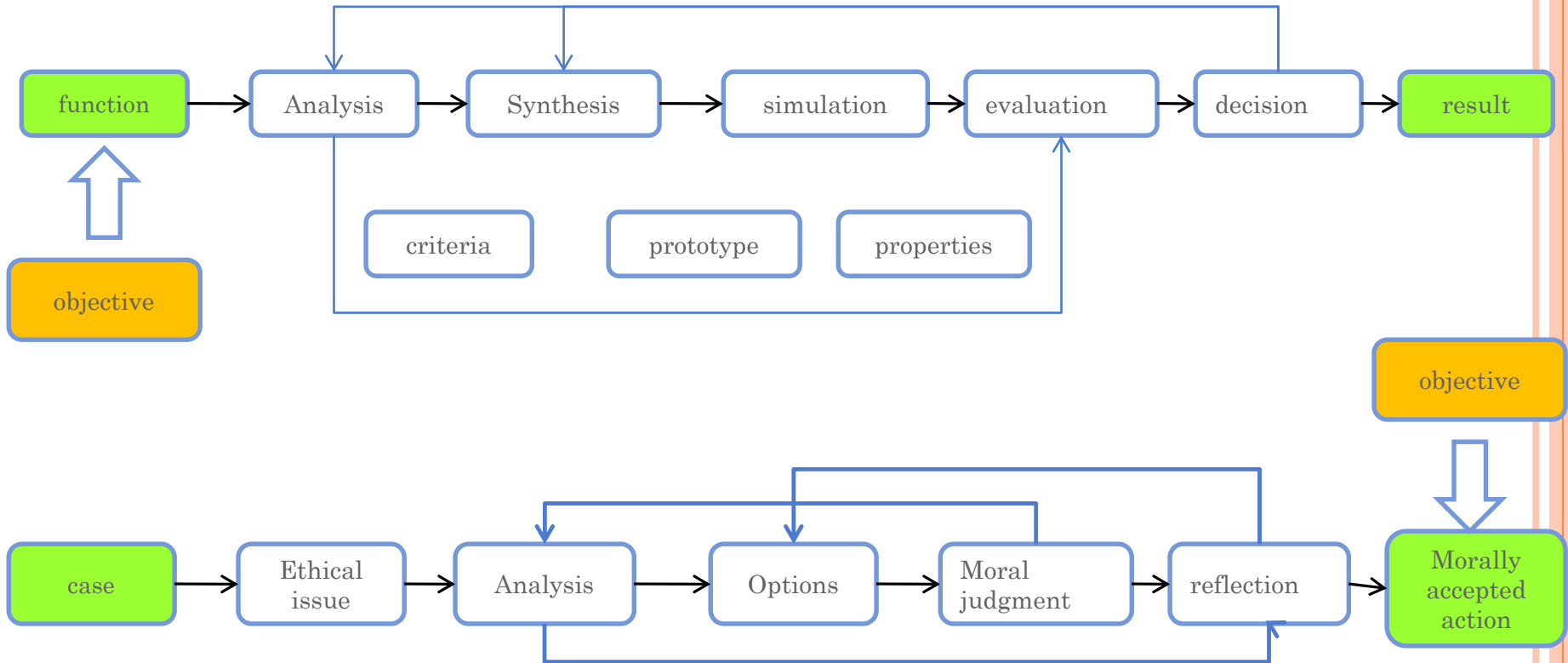
# **INTRODUCTION**



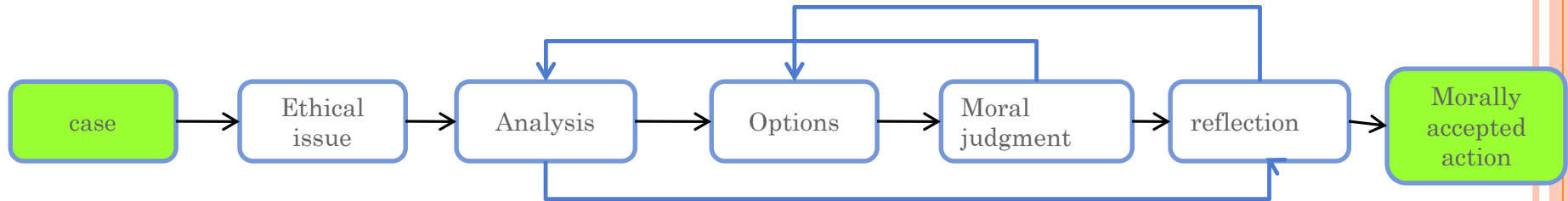
# THE SCOPE OF ENGINEERING ETHICS



# ENGINEER AS AN ETHICAL DESIGNER



# ENGINEER AS AN ETHICAL DESIGNER



## 1. Formulation of the ethical issue:

- Design requirements = ethical, morally ok?:
- E.g.: production of waste e.g) >< sustainability
- E.g.: financial profit >< social impact

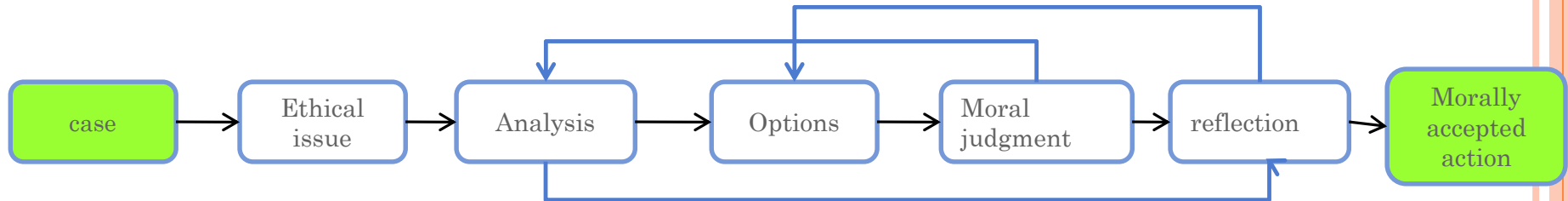
## 2. Analysis :

- what are the morally relevant values?
- Clarification of implicit ((non)-moral) assumptions!
- E.g.: human well-being, justice, welfare, human rights, sustainability, ...

## 3. Options: conceptual design of potential solutions



# ENGINEER AS AN ETHICAL DESIGNER



## 4. Moral judgement: conflict of interests & values:

- E.g.: safety vs. ecology, environment
- E.g.: fast mobility vs. ecological impact
- E.g.: safety vs. comfort
- E.g.: comfort vs. environment

## 5. Reflection:

- Trade-off between various ethically relevant design requirements: sustainability, safety, comfort, cost, working conditions, health risks for users and workers, ...
- The 'best' solution?





# ETHICS

## ETHICS IN ENGINEERING

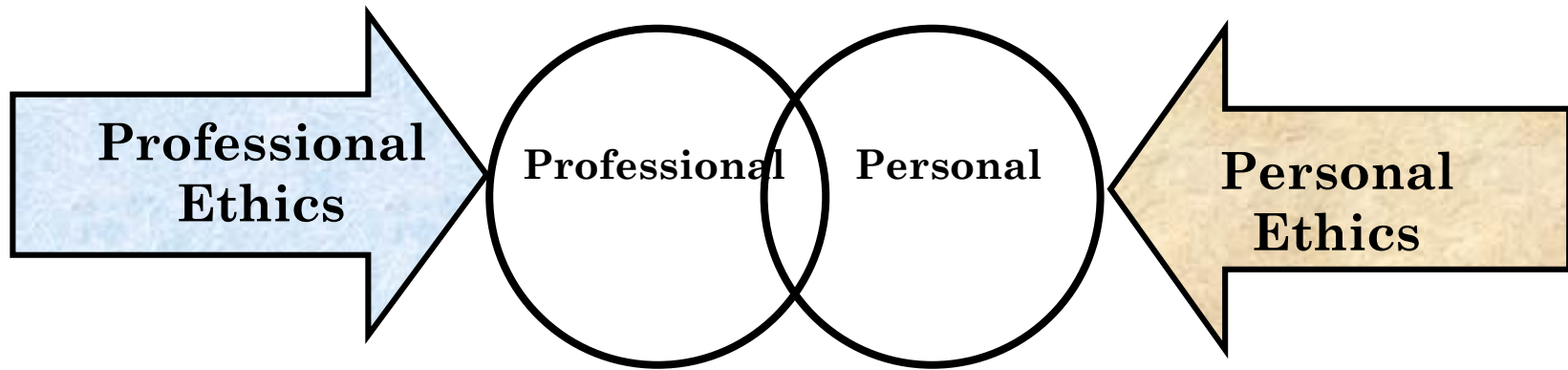
- ADDRESSES THE ETHICS OF ACTIONS OF INDIVIDUAL ENGINEERS

## ETHICS OF ENGINEERING

- SOCIAL FABRIC WITHIN WHICH THE INDIVIDUAL ACTS (CODE OF CONDUCT)



# PROFESSIONAL ETHICS VS. PERSONAL ETHICS



Overlap between professional and personal ethics



# INTERACTION RULES

- **Etiquette** - rules of acceptable personal behavior when interacting with others in a social setting.
- **Laws** - a system of rules and punishments established by a society to maintain a safe and orderly social environment.



# INTERACTION RULES

- **Morals** - personal rules of right and wrong behavior derived from a person's upbringing, religious beliefs, and societal influences.
- **Ethics** - a code defining moral behavior.



# PROFESSIONAL ETHICS

- Ethics is the study of the morality of human actions.
- Professional ethics guides the conduct of a professional.
- Most technical societies have written codes of ethics.



# HISTORY

# A HISTORY OF PROFESSIONAL CODES

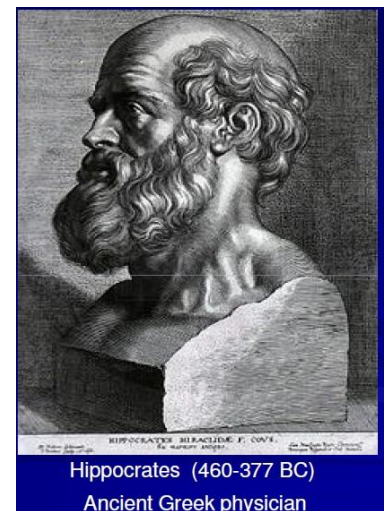
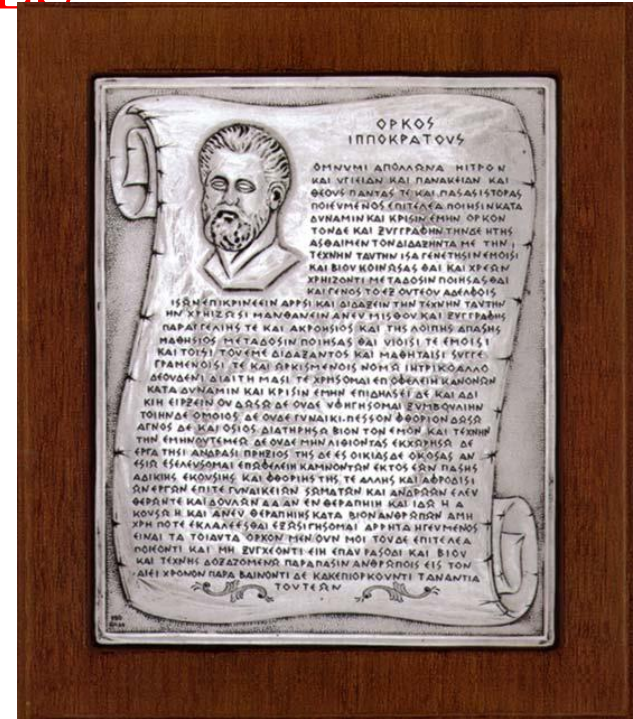
- Adoption of codes has been typically done in a legal manner (binding)
- Code of Hammurabi (1758 B.C)
  - Specifically identified codes pertaining to the “engineers” of that day (builders of homes and ships)
  - Harsh consequences were to be meted out if codes were violated.



# A HISTORY OF PROFESSIONAL CODES

## The Oath of Hippocrates

- Applied to the profession of the medical physician
- Focus is upon the duties and responsibilities of physicians
- Classical and Modern (1964) versions vary widely



Hippocrates (460-377 BC)  
Ancient Greek physician



# HISTORIC VALUE OF THE HIPPOCRATIC OATH



- PLAYED AN IMPORTANT ROLE IN THE EVOLUTION OF EUROPEAN & ISLAMIC MEDICINE
- IT DECLARED THAT MEDICINE WAS A MORAL ENTERPRISE
- IT SETS LIMITS ON THEIR OWN ACTIVITIES, TO TAKE INTO CONSIDERATION THE PATIENT'S GOOD, AND TO ASSESS MORALLY THEIR MEDICAL PRACTICE





# DECLARATION OF GENEVA

WORLD MEDICAL ASSOCIATION, 1948

- “AT THE TIME OF BEING ADMITTED AS A MEMBER OF THE MEDICAL PROFESSION,
- I SOLEMNLY PLEDGE MYSELF TO CONSECRATE MY LIFE TO THE SERVICE OF THE HUMANITY;
- I WILL GIVE MY TEACHERS THE RESPECT AND GRATITUDE WHICH IS THEIR DUE;
- I WILL PRACTISE MY PROFESSION WITH CONSCIENCE AND DIGNITY.....”



# CODIFICATION

- How are codes developed?
  - As the result of professional or public reaction following an engineering disaster or major failure.
  - As a result of proactive policy making by professional societies.



# CODES OF ETHICS

**1803**      *First code of professional ethics*  
(medical ethics)(Thomas Percival)

**1852**      **ASCE (Civil Engineering)**

**1880**      **ASME (Mechanical Engineering)**

**1884**      **AIEE (Electrical Engineering)**

*All these Professional Engineering Societies had  
CODES OF ETHICS*

# **PROFESSIONAL ETHICS FOR ENGINEERS**

# PROFESSIONAL ETHICS FOR ENGINEERS

Accreditation Board for  
Engineering and Technology  
(ABET) defines:

*Fundamental Principles* - defines ethical behavior

*Fundamental Canons* - expands Fundamental  
Principles with a set of rules



# FUNDAMENTAL PRINCIPLES

ACCREDITATION BOARD FOR ENGINEERING AND TECHNOLOGY  
(ABET)

Engineers uphold and advance the integrity, honor and dignity of the engineering profession by:

- I. using their knowledge and skill for the enhancement of human welfare;
- II. being honest and impartial, and serving with fidelity the public, their employers and clients;
- III. striving to increase the competence and prestige of the engineering profession; and
- IV. supporting the professional and technical societies of their disciplines.



# FUNDAMENTAL CANONS

ACCREDITATION BOARD FOR ENGINEERING AND TECHNOLOGY  
(ABET)

1. Engineers shall hold paramount the safety, health and welfare of the public in the performance of their professional duties.
2. Engineers shall perform services only in the areas of their competence.
3. Engineers shall issue public statements only in an objective and truthful manner.
4. Engineers shall act in professional matters for each employer or client as faithful agents or trustees, and shall avoid conflicts of interest.





# FUNDAMENTAL CANONS

ACCREDITATION BOARD FOR ENGINEERING AND TECHNOLOGY  
(ABET)

5. Engineers shall build professional reputation on the merit of their services and shall not compete unfairly with others.
6. Engineers shall act in such a manner as to uphold and enhance the honor, integrity and dignity of the profession.
7. Engineers shall continue their professional development throughout their careers and shall provide opportunities for the professional development of those engineers under their supervision.



# COMPLEMENTARY FUNCTIONS OF BEM & IEM

## CODE OF ETHICS

The Professional Engineering bodies to which engineers may be affiliated are:

1. **The Board of Engineers (BEM)**, which is a statutory body governed by the Engineer's Act 1967 and with which an Engineer must registered before he/she can be employed or practise as an Engineer.
2. **The Institution of Engineers, Malaysia (IEM)**. which is a learned society registered under the Society's Act. Membership is voluntary but the professional standards set by IEM for membership are accepted by BEM as qualifications for registration as a Professional Engineer (PE). Most PE are IEM members.

They have their own Code of Ethics designed to suit their specific requirement according to the objectives of each body constituted.





# **THE BEM'S CODE OF PROFESSIONAL CONDUCT (COPC)**



# CODE OF CONDUCT OF REGISTERED PERSON: PEPC

1.1 Registered Professional Engineer with Practising Certificate not to falsify qualification, etc.

1.1.1 A registered Professional Engineer with Practising Certificate shall not falsify his qualifications or permit misrepresentation of his or his associates' qualifications. He shall not misrepresent or exaggerate his responsibility in or for the subject matter of previous assignments. He shall not misrepresent pertinent facts concerning employers, employees, associates, joint ventures', or past accomplishments.

1.1.2 A registered Professional Engineer with Practising Certificate shall check with due diligence the accuracy of facts and data before he signs or endorses any statement or claim. He shall not sign on such documents unless, where necessary, he has made qualifications on errors and inaccuracies.

1.1.3 A registered Professional Engineer with Practising Certificate shall respond, within reasonable time, to communication from the Board or any other relevant authority on matters pertaining to his professional service.

# CODE OF CONDUCT OF REGISTERED PERSON: PEPC

1.1.4 A registered Professional Engineer with Practising Certificate shall undertake assignments only if he is qualified by education and experience in the specific technical fields of that assignment in which he is to be involved.

1.1.5 A registered Professional Engineer with Practising Certificate shall approve and sign only those engineering documents that he has prepared or has been prepared under his direction and control.

1.1.6 A registered Professional Engineer with Practising Certificate shall not accept assignment and assume responsibility for coordination of an entire project and sign and stamp (Professional Engineer with Practising Certificate stamp) the engineering documents for the entire project unless the engineering documents for each technical segment of the project is signed and stamped personally by the qualified person who is involved in the respective segment of the project.

# CODE OF CONDUCT OF REGISTERED PERSON: PEPC

1.1.7 A registered Professional Engineer with Practising Certificate shall be objective and truthful in making professional reports, statements and testimonies. He shall include all relevant and pertinent information in such reports, statements, or testimonies, which should bear the date indicating when the information was current.

1.1.8 A registered Professional Engineer with Practising Certificate shall not express publicly technical opinions that are not founded upon his competence and knowledge of the facts in the subject matter.

1.1.9 A registered Professional Engineer with Practising Certificate shall not issue any statement, criticism or argument on technical matters that are inspired or paid for by interested parties, unless he has prefaced his comments by explicitly identifying the interested parties on whose behalf he is speaking and by revealing the existence of any interest he may have in the matter.

# CODE OF CONDUCT OF REGISTERED PERSON: PEPC

1.1.10 A registered Professional Engineer with Practising Certificate shall notify the Board in writing within three (3) months –

- (i) if he is convicted of an offence involving false or negligent certification, fraud or dishonesty in Malaysia or elsewhere; or
- (ii) if he becomes a bankrupt.

1.2 Registered Professional Engineer with Practising Certificate to certify work only if he has control over supervision, etc.

1.2.1 A registered Professional Engineer with Practising Certificate shall certify satisfactory completion of a piece of work only if he has control over the supervision of the construction or installation of that work, and only if he is satisfied that the construction or installation has fulfilled the requirements of the engineering design and specifications.

1.2.2 A registered Professional Engineer with Practising Certificate who takes over a piece of work shall assume all liability and responsibility for the works done prior to his taking over.

# CODE OF CONDUCT OF REGISTERED PERSON: PEPC

1.2.3 A registered Professional Engineer with Practising Certificate shall not reveal facts, data or information without the prior consent of the Client or Employer, past and present, except as authorized or required by law or when the withholding of such information is contrary to the safety, health and interest of the public.

1.2.4 A registered Professional Engineer with Practising Certificate having knowledge of any violation of this Code of Conduct or any law or regulation shall report thereon to Employer or appropriate professional bodies and, where relevant, also to public authorities and cooperate with the appropriate professional bodies or the proper authorities in furnishing such information or assistance as may be required.

1.2.5 When the professional advice of a registered Professional Engineer with Practising Certificate is overruled or amended contrary to his advice, the registered Professional Engineer with Practising Certificate shall, if the amendment may in his opinion give rise to a situation that may endanger the safety, health and interest of the public, notify his Employer or Client and such other authority as may be appropriate and explain the consequences to be expected as a result of his advice being overruled or amended.



# CODE OF CONDUCT OF REGISTERED PERSON: PEPC

1.3 Registered Professional Engineer with Practising Certificate not to accept benefit from more than one party, etc.

1.3.1 A registered Professional Engineer with Practising Certificate shall not accept any benefit or compensation, financial or otherwise, from more than one party for professional engineering services on the same project, or for professional engineering services pertaining to the same project, unless the circumstances are fully disclosed and agreed to by all interested parties.

1.3.2 A registered Professional Engineer with Practising Certificate shall disclose all known or potential conflicts of interest that may influence or appear to influence his judgment or the quality of his services.

# CODE OF CONDUCT OF REGISTERED PERSON: PEPC

1.3.3 A registered Professional Engineer with Practising Certificate shall not solicit or accept any consideration, financial or otherwise, directly or indirectly, from outside agents in connection with the work for which he is responsible.

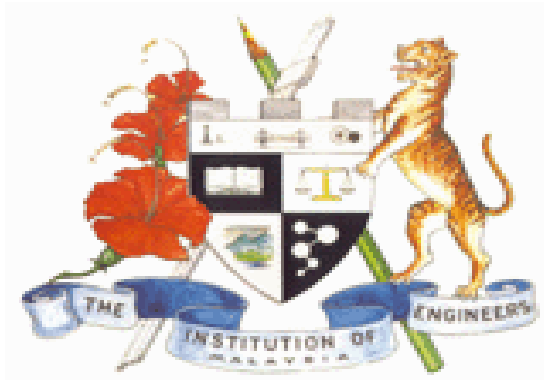
1.3.4 A registered Professional Engineer with Practising Certificate acting as Advisor or Director of a company or an agency shall not participate in decision with respect to professional engineering services solicited or provided by him or his organization.

1.3.5 A registered Professional Engineer with Practising Certificate shall not solicit or accept a contract from a body or agency in which a principal or officer of his organization serves as a member of that body or agency unless with the knowledge and consent of that body or agency.



BEM Code of Professional Conduct are amenable and have clear interpretation because of its legal connotations and would be enforceable in law. Issues of morality and philosophy would be ineffective in law since it is impossible to legislate moral or philosophical principles. Therefore, the BEM code can distinguished between legal and illegal cases. BEM lays down minimum baseline rules which are enforceable in law and must be observed by all engineers registered under the Engineer's Act.





# THE IEM REGULATION ON PROFESSIONAL CONDUCT (ROPC)



Article 2.18 of the IEM Constitution states that;  
Quote: *Every member shall so conduct himself as to uphold the dignity, standing and reputation of the profession. He shall be bound by the Regulation on Professional Conduct.* Unquote.



Then, in the IEM Bylaws, we have Bylaws 9.2, 9.3 and 9.6 which also deal with the professional conduct of members, and the formal set of “Regulation of Professional Conduct” which has been made by the IEM Council under the provision of Section IX of the IEM Bylaws.



9.2 Every Corporate Member shall at all times so order his conduct as to uphold the dignity and reputation of his profession, and to safeguard the public interest in matters of safety and health and otherwise. He shall exercise his professional skill and judgement to the best of his ability and discharge his professional responsibility with integrity.

9.3 Every member of any grade shall at all times so order his conduct as to uphold the dignity and reputation of The Institution, and act with fairness and integrity towards all persons with whom his work is connected and other members.



9.6 Every member of any grade in so far as he shall be engaged or employed in any advisory or consultative capacity, shall observe and be bound by the following Code of Professional Conduct and the Professional Conduct Regulations made thereunder.

- (a) He shall act strictly in a fiduciary manner in relation to his clients, and his charges to such clients shall constitute his only remuneration in connection with such work, except as provided by paragraph (d) of this Bylaw.
- (b) He shall not accept any trade commissions, discounts, allowances, or indirect profit in connection with the work upon which he is engaged.
- (c) He shall not, without disclosing the fact in writing to his clients, be a director or member of, or a shareholder in or act as agent for, any contracting or manufacturing company or firm business with which he may have occasion to deal on behalf of his clients, or have any financial interest in such a business.





- (d) He shall not receive, directly or indirectly, any royalty, gratuity or commission on any patented or protected article or process used on work which he is carrying out for his clients, unless such royalty, gratuity, or commission has been authorised in writing by those clients
- (e) He shall not under any circumstances solicit advisory or consultative work, either directly or by an agent, nor shall he pay, by commission or otherwise, any person who may introduce clients to him.
- (f) He shall not be the medium of payments made on his clients' behalf to any contractor, or business firm (unless specially so requested by his clients), but shall only issue certificates or recommendations for payment by his clients.



- (d) He shall not receive, directly or indirectly, any royalty, gratuity or commission on any patented or protected article or process used on work which he is carrying out for his clients, unless such royalty, gratuity, or commission has been authorised in writing by those clients
- (e) He shall not under any circumstances solicit advisory or consultative work, either directly or by an agent, nor shall he pay, by commission or otherwise, any person who may introduce clients to him.
- (f) He shall not be the medium of payments made on his clients' behalf to any contractor, or business firm (unless specially so requested by his clients), but shall only issue certificates or recommendations for payment by his clients.



# THE INSTITUTION OF ENGINEERS, MALAYSIA

## REGULATIONS ON PROFESSIONAL CONDUCT

- A. The following Regulations on Professional Conduct are made by the Council under Section IX of the Bylaws. In these regulations ‘member’ means a member of any grade referred to in Section II of the Bylaws, and ‘employer’ includes ‘client’.
- B. (1) A member shall at all times take care to ensure that his work and the products of his work constitute no avoidable danger of death or injury or ill health to any person.
- (2) A member shall take all reasonable steps to avoid waste of natural resources, damage of the environment, and wasteful damage or destruction of the products of human skill and industry.
- (3) A member shall take all reasonable steps to maintain and develop his professional competence by attention to new developments in science and engineering relevant to his field of professional activity and, if he is an employer, shall encourage his professional employees to do likewise.

- (4) A member shall not undertake responsibility as professional engineer which he does not believe himself competent to discharge.
- (5) A member shall accept personal responsibility for all work done by him or under his supervision or direction, and shall take all reasonable steps to ensure that persons working under his authority are competent to carry out the tasks assigned to them and that they accept personal responsibility for work done under the authority delegated to them.
- (6) A member called upon to give an opinion in his professional capacity shall, to the best of his ability, give an opinion that is objective and reliable.



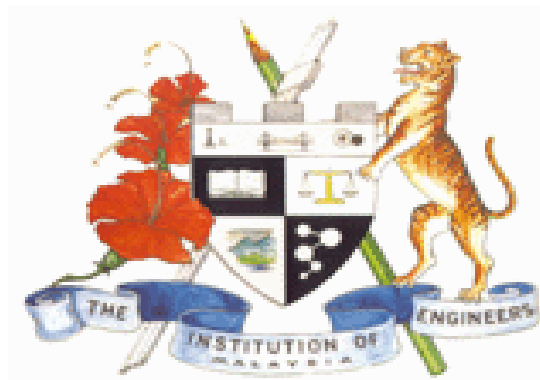
- (7) A member whose professional advice is not accepted shall take all reasonable steps to ensure that the person overruling or neglecting his advice is aware of any danger which the member believes may result from overruling or neglect.
- (8) A member shall not make any public statement in his capacity as a professional engineer without ensuring that his qualification to make such a statement and any association he may have with any party which may benefit from his statement are made known to the person or persons to whom it is directed.
- (9) A member shall not, in self-laudatory language or in any manner derogatory to the dignity of the profession advertise or write articles for publication, nor shall he authorise any such advertisement or article to be written or published by any other person.



- (10) A member shall not recklessly or maliciously injure or attempt to injure, whether directly or indirectly, the professional reputation, prospects or business of another engineer.
- (11) A member shall inform his employer in writing of any conflict between his personal interest and faithful service to his employer.
- (12) A member shall not improperly disclose any information concerning the business of his employer or of any past employer.



- (13) A member shall not accept remuneration in connection with professional services rendered to his employer other than from his employer or with his employer's consent; nor shall he receive directly or indirectly any royalty, gratuity or commission on any article or process used in or for the purposes of the work in respect of which he is employed unless or until such royalty, gratuity or commission has been authorised in writing by his employer.
- 14) A member shall not improperly solicit work as an independent advise or consultant, either directly or by an agent, nor shall he pay any person, by commission or otherwise, for the introduction of such work.
- (15) A member acting as an independent adviser or consultant shall not be the medium of payment made on his employer's behalf unless so requested by his employer; nor shall he place contracts or orders in connection with work on which he is employed, except with the authority of and on behalf of his employer.



The IEM Regulations on Professional Conduct tend to be general because IEM members comprise of various engineering disciplines, as well as types of professional employment and businesses. IEM Code embraces many areas involving moral and philosophical considerations including public safety & health, conservation of resources & environment, upgrading of technology, engineers responsibility and the conduct of affairs between Engineer and employees, clients and peers. There is a provision in the IEM by-laws that disciplinary cases are referred to BEM for appropriate action.





**What are the differences among: COE, COPC and ROPC?**



- The Engineer's Code of Ethics (COE) represents the collective stance and the shared conviction of the Fraternity of Engineers.
- The sanctity of the Code amounts to a Honour Pledge which when breached brings shame and dishonour to both the transgressor and the profession.
- There is no legal enforcement; only self-respect and self esteem, and the chosen inviolable value of life for someone belonging to a noble profession.
- If we don't respect ourselves, who would, - that is the point and the bottom-line.

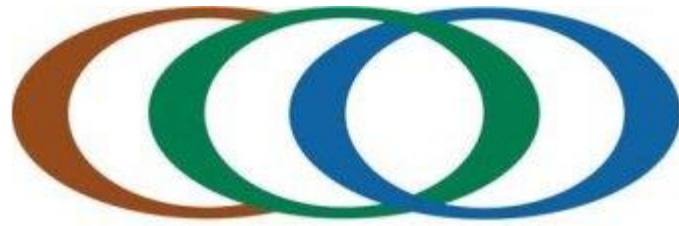


The BEM's Code of Professional Conduct (COPC) represents the "Law" and when broken, investigation and disciplinary processes follow; akin to the legal procedures of the "Court". Should the respondent registered engineer be found to have indeed "broken the law", his act unbecoming of a registered engineer will be criminalized!

The IEM's Regulation on Professional Conduct (ROPC) is a consensus among members, which will be reviewed periodically and made relevant. Enforcement is by way of peer-judgement followed by a complaint in writing.



# **PROFESSIONAL ETHICS FOR CPESC (IECA)**



**IECA**

## CODE OF ETHICS FOR REGISTRANTS

- CPESC® registrants meet educational and practical experience standards, subscribe to the code of ethics, pass a rigorous qualifying exam and maintain expertise through a continuing professional development program.



# ARTICLE I. GENERAL PRINCIPLES

1. The privilege of practice imposes obligations of morality and responsibility as well as Professional knowledge.
2. Each Certified Professional in Erosion and Sediment Control (hereafter called Registrant) agrees to be guided by the highest standards of ethics, personal honour, and professional conduct.



## Article II. Relation of Registrant to the Public

1. A Registrant shall avoid and discourage sensational, exaggerated, and/or unwarranted statements that might induce participation in unsound enterprises.
2. A Registrant shall not knowingly permit the publication of his or her reports or other documents for any unsound or illegitimate undertaking.
3. A Registrant shall not give professional opinion or make a recommendation without being as thoroughly informed as might reasonably be expected considering the purpose for which the opinion or recommendation is desired, and the degree of completeness of information upon which it is based should be made clear.

## Article II. Relation of Registrant to the Public

4. A Registrant may publish dignified business, professional, or announcement cards, but shall not advertise his or her work or accomplishments in a self laudatory, exaggerated, or unduly conspicuous manner.
5. A Registrant shall not issue a false statement or false information even though directed to do so by employer or client.



## Article III. Relation of Professional to Employer and Client

1. A Registrant shall protect, to the fullest extent possible, the interest of their employer or client insofar as such interest is consistent with the law and his or her professional obligations and ethics.
2. A Registrant who finds that his or her obligations to their employer or client conflict with his or her professional obligation or ethics should have such objectionable conditions corrected or resign.
3. A Registrant shall not use, directly or indirectly, any employer's or client's information in any way that would violate the confidence of the employer or client.

## Article III. Relation of Professional to Employer and Client

4. A Registrant retained by one client shall not accept, without client's written consent, an engagement by another if the interests of the two are in any manner conflicting.
5. A Registrant who has made an investigation for any employer or client shall not seek to profit economically from the information gained, unless written permission to do so is granted, or until it is clear that there can no longer be a conflict of interest with the original employer or client.
6. A Registrant shall not divulge information given in confidence.

## Article III. Relation of Professional to Employer and Client

7. A Registrant shall engage, or advise his employer or client to engage, and cooperate with other experts and specialists whenever the employer's or client's interests would be best served by such service.
8. A Registrant shall not accept a concealed fee for referring a client or employer to a specialist or for recommending professional service other than one's own.
9. A registrant will apply recognised best-practice in an objective manner when providing advice, preparing documents or plans, or reviewing the practices of others.

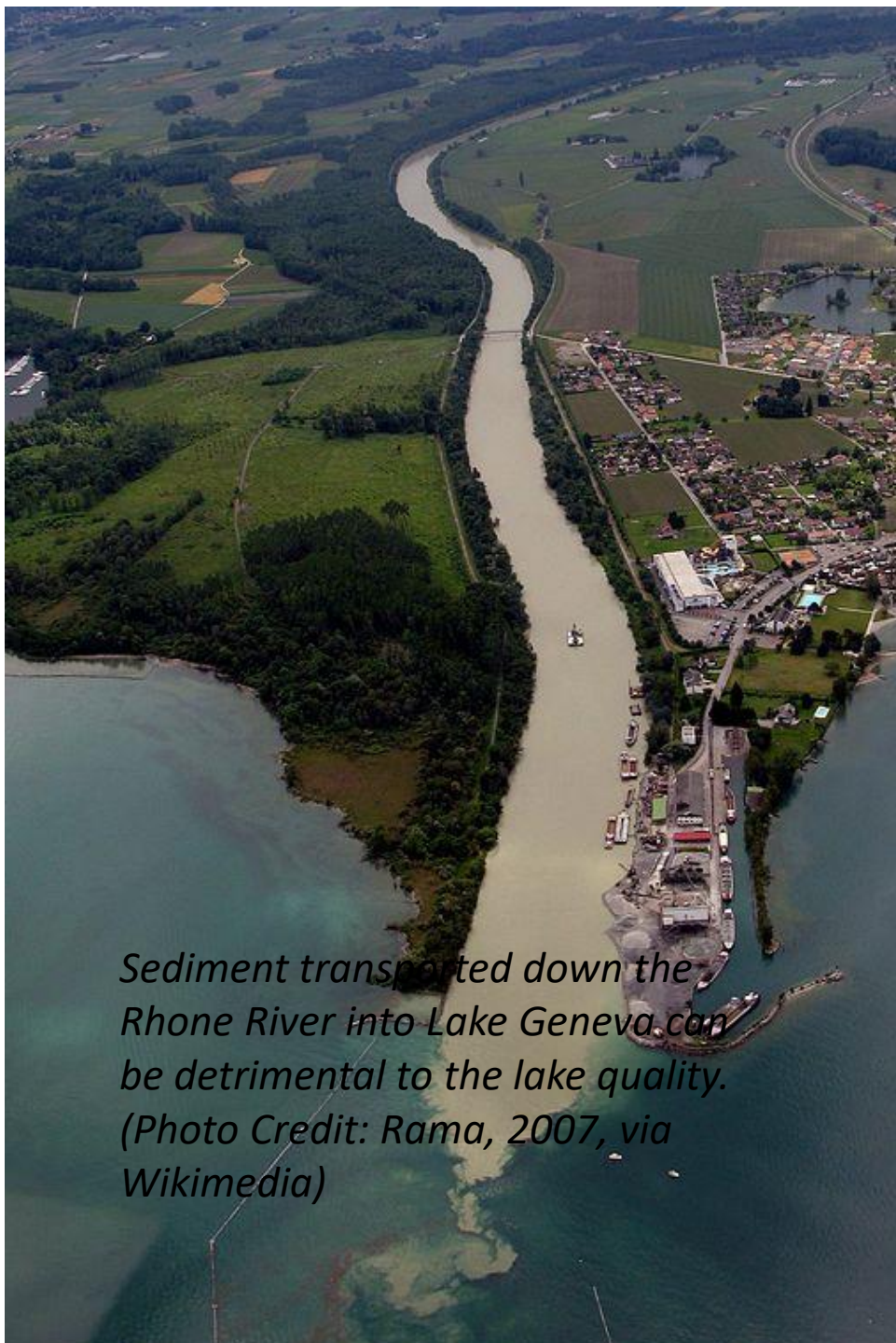
## Article IV. Relation of Registrant to Each Other

1. A Registrant shall not falsely or maliciously attempt to injure the reputation of another.
2. A Registrant shall freely give credit for work done by others to whom the credit is due, shall refrain from plagiarism in oral and written communications, and not knowingly accept credit rightfully due another person.
3. A Registrant shall endeavor to cooperate with others in the profession and encourage the ethical dissemination of technical knowledge.
4. A Registrant having knowledge of unethical practices of another Registrant shall avoid association with that Registrant in professional work.

## Article V. Duty to the Profession

1. A Registrant shall aid in exclusion from certification those who lack moral character, who have not followed this Code of Ethics, or who do not have the required education and experience.
2. A Registrant shall uphold this Code of Ethics by precept and example and encourage, by counsel and advice, other Registrants to do the same.
3. A Registrant having positive knowledge of deviation from this Code by another Registrant shall bring such deviation to the attention of the CPESC, Inc. Executive Director.

# **DISCUSSION**



*Sediment transported down the Rhone River into Lake Geneva can be detrimental to the lake quality. (Photo Credit: Rama, 2007, via Wikimedia)*



*Aerial view of landslide that buried Colonia Las Colinas. Source: [USGS](#)*

# DISCUSSION

- A CPESC just like PE should hold paramount the safety, health, welfare and the environment. The latter being the main niche/focus.
- Damaging to the environment which ultimately in some cases lead to landslides and fatalities can be mitigated by a professional.
- A mark of professionalism is competence and ethical and so long as the individual is looked upon as an employee rather than as a free artisan, to that extent there is no professional status (Robert L. Whitelaw)



# PROFESSIONALISM

- *Professionalism implies a certain set of attitudes. A professional analyzes problem from a base of knowledge in a specific area, in a manner which is objective and independent of self-interest and directed toward the best interest of his client. In fact the professional's task is to know what is best for his client even if his client does not know himself (Lawrence Stoch)*

# Moral Engineers

- To attain ethical practice within a profession, an individualistic approach to good morals is not enough. The structures of the profession (practices, procedures, instructions) must be conducive to an individual's accepting moral responsibility and fulfilling moral obligations.
- Engineers need to change professional practice that those in engineering **can act morally by design** rather than by accident

# Moral Engineers (..cont..)

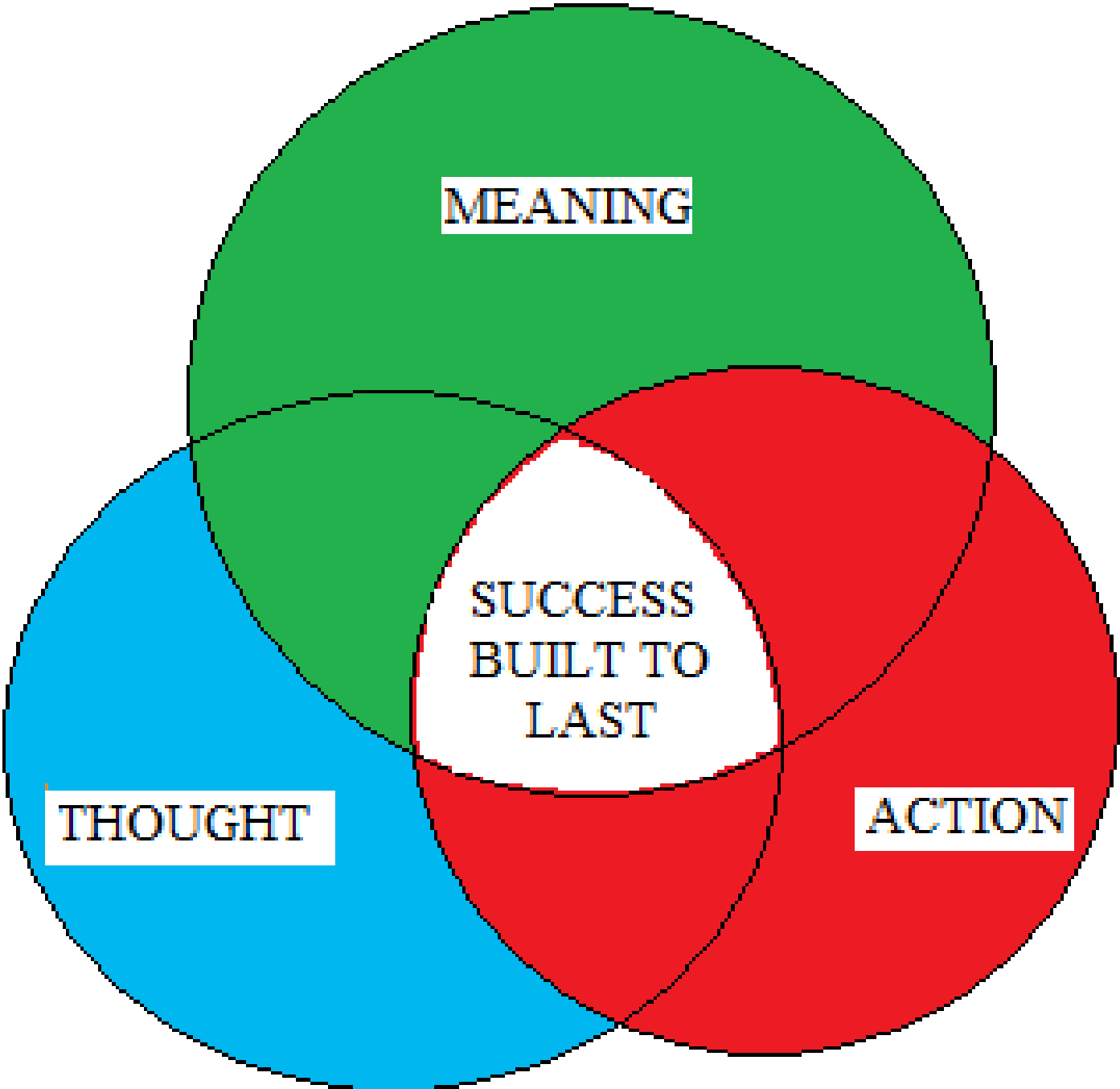
- We must have moral engineers if we are to have moral engineering.
- That is only half the truth
- We must also have **professional procedures**, that reinforce rather than place obstacles in the way of moral action.

# Possible Problems Linked to Professionalism

- **Lack of Vision** - acceptance at the expense of critical thinking, overlook alternatives
- **Incompetence** - poor execution of technical tasks
- **Lack of Time or Materials** - poor management
- **Compartmentalization** - poor communication
- **Irresponsibility** - notion that someone down the line will deal with problem
- **Dishonesty** - misleading others at any point in the engineering process

# CONCLUDING REMARKS

- *Ethics and professionalism*
- *A revolution of Ethics is needed to displace the powerful ethical egoism that rationalises the market as the predominant decision-making tool*
- *Are Engineers expected to manifest higher ethical conduct than the norm throughout the community?*



MEANING

THOUGHT

ACTION

SUCCESS  
BUILT TO  
LAST