

Case studies

Read the case carefully and discuss the situation.

1. You are asked to evaluate 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.
2. 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
3. An engineer, hired by a software company, believes that the company's new software design is safe under existing standards. However the new software may not meet the new standards that he knows about to be released standards that performing more tests could cost both the company and the public significantly. Issues of conflicting obligations to the company and the general public also arise.
4. Laitjung is asked to prepare specification for water expansion system. While he is competent to do so. Laitjung also owns a company that manufacture and sells such system.
 - a. Does this constitute a conflict of interest?
 - b. If so how should it be handled? Discuss
5. Alok is Tribhuvan University employee since 15 years. To work outside from university is not allowed by TU ACT and bylaws without written permission. But, now Alok is principal of an affiliated college since three years without getting permission or fulfilling these formality. Discuss the conflicting issues.
6. You are asked to evaluate and provide certificate to user committee of an irrigation canal works in Dadeldhura. You found that the canal is excavated by backhoe excavator and complete as per design. As per public participatory provision in Act it is prohibited to use heavy equipment in work, because the motivation of public participation is to generate employment and labour based. 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.. discuss the situation
7. 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.
8. ABC Company awarded a contract of building work in NTC at the same place after dismantling existing old building. The construction period is fixed for 18 months and delay of construction will lead penalties RS 20000 per day up to 10 percent of contract price (i.e. Rs 50M). The prime contractor sub-let the dismantling work in 2million rupees within four week. The same old building is use by NTC for his office work, right now. As per provision of contract NTC should vacant the old building within four weeks from the date of contract sign, but till the end of nine month NTC could not shift the office from old building. Now NTC vacant the building but the sub-let parties refuse to dismantle the building at the same agree cost. Now, from the engineering aspects, what do you suggest and clarify the situation.
9. There are several casinos run in Nepal by hotels or alone in Kathmandu. The government asked the management to stop to go for Nepali citizen in casino seeing their living standard. But situation is found the Nepali citizens were also use to go in regular manner. The administration take action on it , the workers trade union oppose it because there is recession of tourism so it is against the worker welfare to stopped Nepali citizen to go casinos, because there are huge population of dependant , more than ten thousand workers in this business. Discuss the situation

- **Determine the facts in the situation**
 - **Determine the stake holders**
 - **Assess the motivation of the stakeholders**
 - **Formulate the alternative solutions**
 - **Seek additional assistance as appropriate**
 - **Select the best course of action**
 - **Implemented the selected solution**
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Case

10. 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?

Solution

Engineering is a profession. A profession is that which is acquired through a specialized training or education having certain skill that ordinary men do not possess. Because of professional's knowledge and skill that ordinary people do not possess, and because of they use their knowledge and skill for the benefit of men and the society as a whole, professionals do have high recognition in the society. Furthermore, their professional practices are also subjected to public evaluation and hence, a professional's work can not be remained as a personal matter. In this background, we have to deal the situation.

A designer is supposed to design a project visiting the site and he/she should look for all the things that are readily apparent on the site that is likely to affect the design. Besides this, a designer is also needed to ascertain the nature, and load bearing capacity of the soil underneath ground level. In this case given, it is clearly specified that the type of soil is not suitable for that type of building.

Client's intention in this regard does not matter for an engineer as a professional designer whether a client is going to build that structure or not. A designer's main duty is to prepare a design for the project created by a client that is technically feasible to erect on the ground. Non-feasible and non-economical design may lead towards the negligence of the designer or they exhibit the incompetence of the designer. If negligence and incompetence are not the case and if the designer perform such task to fulfill the Client's intention only then the designer is not remained as a professional and his/her behavior becomes unethical and immoral. Professionals committing such unethical and immoral acts are subjected to a disciplinary action if not institutionally (as in the case of Nepal) but by the public and their public image will become very low.

It is also to be noted here that a designer's duty does not end when he/she has completed his/her design. A designer is under a continuing duty to check that his/her design will work in practice and to correct any errors that emerge during the implementation (construction) of that design. In the case given, as the early stage of starting a design work, it has already been known that soil type is unsuitable. Thus, based on the above discussion as a designer, I will not be involved in designing that structure.

11. Rohit, an engineer working in a water supply project, is invited, along with other engineers, to a one-day complementary educational seminar sponsored by MAMA Steel and Pipe Company. The seminar is designed to educate engineers on current technological advances in the selection and use of pipe construction.

The seminar is a part of a larger effort by the MAMA Steel and Pipe Company to become better known in the engineering community. MAMA Steel Company had provided all refreshments, including a buffet luncheon during the seminar and a cocktail reception immediately following the seminar. Rohit accepts the invitation and agrees to attend the seminar.

Answer the following questions using appropriate references:

1. Is Rohit's acceptance to participate in that seminar a conflict of interest?
 2. Is Rohit taking a bribe in accepting the invitation?
 3. Will his acceptance create a conflict of interest later if Rohit needs to purchase pipes?
 4. How would you evaluate the behavior of the MAMA Steel Company?
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12. Shiva, a bridge engineer has designed a bridge to facilitate movements between two villages. Bridge was designed to carry out 10T load. No vehicle movement was seen in both the villages. People use carts to carry loads in both the villages. Bridge was constructed by Reliable Construction Company (RCC) and the bidding amount was Rs. 3,000,000. Construction was completed in January 27, 2004 and bridge was handed over to the client. The client has made final payment and the defect liability is six months after completion of the construction.

On February 14, 2004, there was local festival and a Mini-Truck full of goods was crossing the bridge, when bridge was collapsed.

1. An investigation team (IT) was formed which visited the site and found:
2. Bridge was designed without considering the soil condition.
3. Inadequate foundation was one of the causes of bridge collapse.
4. While the heavy loaded Mini-Truck was crossing the bridge, the bridge was also full of people.
5. Truck driver was found under the influence of alcohol.
6. Construction supervision was done by Binaya, a Civil Engineer who is an employee of RCC. Binaya has recommended using "Baliyo Falam" a newly introduced reinforcement of which Binaya is the local agent.
7. The reinforcement used was also found of low quality and was also one of the causes of bridge collapse.
8. Engineer Rana, on behalf of the Employer, has certified the works executed by the contractor. It was also reported that Rana has accepted 10% of the bidding amount from the contractor as a covert payment.

Read the case carefully and discuss each individuals/institutions status using appropriate references:

- i. Shiva, a design engineer
- ii. A Truck driver
- iii. Binaya , a supervision engineer
- iv. Rana, the Employer's engineer
- v. RCC, the Contractor

13. Galaxy Enterprise (GE) is a giant supplier of construction materials. GE arranges a function and invited about 150 engineers/architects for a dinner at five star hotel to promote recently introduced anti-termite product in Nepalese market. Mr. CK is a consulting engineer who has been assigned to write specification for a National Theatre Building Project. Consulting engineer Mr. CK approximating the new product introduced by GE and is about to incorporate its features in specification. Executive Director of GE Mr. X invited Mr. CK for a dinner in his house. Mr. X and Mr. CK are alumni of same school.

Discuss the situation.

- a) Should Mr. CK attend the dinner at hotel Yak and Yeti?
- b) Should Mr. CK attend the dinner in his house?

Read the case carefully and answer the questions given.

14. Gaurav, an engineer, is invited along with other engineers to a one-day complementary educational seminar sponsored by the ABC Manufacturing Company (ABC). The seminar is designed to educate (provide information to) engineers on current technological advancement in the selection and use of the product (material) produced by the ABC. The seminar is a part of the ABC's marketing policy to become better known in the engineering community. The ABC will provide refreshments, lunch, cocktail dinner and a handbag, all free. Gaurav accepts the invitation and agrees to attend the seminar.

- i. Is this invitation of the ABC a bribe?
- ii. After participating in the seminar, if Gaurav has to purchase similar product (for example: say reinforcement or electrical fittings or equipment), will his participation in the seminar create a conflict of interest?

Reference:

- i. Professional engineers shall not engage in activities or accept remuneration for services rendered that may create a conflict of interest with their clients or employers, without the prior knowledge and consent of their clients or employers.
- ii. Professional engineers shall not accept covert payment or an offer for the purpose of securing assignment.

Read the case carefully and Discuss the situation.

1. 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
2. A factory was using a chemical in processing a product. The storage tank of chemical waste, which was hazardous to health and environment, had a leakage. During inspection an engineer A came to know leakage that had already taken place that might cause adverse impact on health and hygiene of the surrounding. Mr. A informed to his boss about the event. Considering the possible social objection boss request to Mr. A to be silent on the issue and also hints to Mr. A that he may have to be out of the job if the case would go into the hands of social reformers. If you are Mr. A what you would do? Discuss.

Read the case carefully and answer the questions given.

The Client hired an Architect Bibek to design a building. Bibek recommended the client to conduct a soil test before start of the design work. The Client said that conducting soil test would unnecessarily add more cost.

Discuss what should Bibek do in this situation along with the options available to Bibek?

Read the case carefully and answer the questions given.

A Client came to a designer and asked to design a multistoried building. The soil type of the proposed site is found not suitable for that type of structure. The designer hesitated to design the building. The Client said that he actually is not going to build that structure. He wanted to collect money from outside sources showing that design as a proposal for his venture and he wanted to utilize that money in other business.

What should a designer do in such situation and why? Justify your answer.

Read the case carefully and answer the questions given.

Government has established a construction company called NCCN. Because of its inefficiency voices are being raised for its privatization. Let us assume that NCCN is sold out to the private investors (PI). PI lay off its 60% employees and raised the salary and facilities of the existing employees to make them more efficient and effective.

Questions:

Was it ethical for PI to lay off its 60% employees and to raise the salary and benefits for the remaining employees?

Was it ethical for the Government to sell out the company and to make people jobless?

Would it be ethical for the Government to retain the NCCN as it is, and support the company for its salary and other expenses from Government's other sources?

What is meant by society and community? Discuss social change and its theories?

What is meant by profession and ethics? What is code of conduct of professional engineer set by Nepal engineering council?

What is the purpose of tender? List the essential information to be incorporated in tender notice.

What is contract? What are the essential elements of contract?

What is meant by professional association? Introduce NEC and NEA and discuss the objective of each.

Define intellectual property right? Elaborate patent, design, and trademark

Read the case carefully and Discuss the situation.

1. Galaxy Enterprise (GE) is a giant supplier of construction materials. GE arranges a function and invited about 150 engineers/architects for a dinner at five star hotel to promote recently introduced anti-termite product in Nepalese market. Mr. A is a consulting engineer of APEX, who has been assigned to write specification for a National Theatre Building Project. Consulting engineer Mr. A approximating the new product introduced by GE and is about to incorporate its features in specification. Executive Director of GE Mr. X invited Mr. A for a dinner in his house. Mr. X and Mr. A are alumni of same school.
15. Write short Notes on
 - A. Essential elements contract
 - B. Role of engineer in transforming the society
 - C. Valid, void and voidable contract
 - D. Types of business enterprises
 - E. Employees and workers
 - F. Welfare provision in labor act
 - G. Occupation health and safety provision and labor law
 - H. Tort , negligence, liability
 - I. Pros and cons of technology
 - J. Individual freedom and societal goal
 - K. Exponential growth
 - L. Contract and agreement
 - M. Valid, void and voidable contract
 - N. Individual freedom and societal goal
 - O. Occupation health and safety provision and labor law
 - P. Negligence, liability and Tort
 - Q. Engineers and society
 - R. Discuss the relationship of engineering , technology , basic science and other profession

- S. What are fundamental canons for professional engineers?
- T. What is technology and social change? What are the factors governing social change?
- U. Define Tender. What is the essential information to be given in the tender notice?
- V. Why contract is necessary? Discuss, Valid, void and voidable contract.
- W. What is meant by moral and ethics? Discuss briefly on the code of conduct to be followed by Nepalese Engineers.
- X. What are the objectives of Nepal Engineering Council? How does it differ from Nepal Engineering Association?
- Y. What is liability and negligence? Discuss briefly on vicarious and liability of partners in tort case.
- A. Intellectual property right
- B. Essential elements contract
- C. Types of business enterprises
- D. Employees and workers
- A. Computer crime
- B. Computer crime
- C. Individual freedom and societal goal
- D. Occupation health and safety provision in labor law
- E. Negligence, liability and Tort
- F. Role of engineers to transfer societies
- E.

What is the influence of technology on society?

Discuss, social change and factors governing the social change.

What are the fundamental of ethics? What is code of conduct of professional engineer set by Nepal engineering council?

What is the procedure of tender? List the essential information to be incorporate in tender notice.

Define contract and agreement. What are the essential elements of contract?

What are the objectives of professional association? Distinguish NEC and NEA.

Define intellectual property right? Elaborate patent, design, and trademark

Writes short notes

What is technology and social change? What are the factors governing social change?

Define Tender. What is the content of the tender notice?

Why contract is necessary? Discuss, Valid, void and voidable contract.

What is meant by intellectual property? Differentiate the copy right and patent right

What are the objectives of Nepal Engineering Council? How does it differ from Nepal Engineering Association?

What is liability and negligence? Discuss briefly on vicarious and liability of partners in tort case.

- F. Ethics, moral and professionalism
- G. Bid securities and performance securities
- H. Types of business enterprises
- I. Feature of labour law
- 16. Elements of contract What is meant by society and community/ illustrate the characteristics of society, writ briefly the theories of origin of society
- 17. What is technology and social change? What are the factors governing social change?

18. What is meant by profession and ethics? What is code of conduct of professional engineer set by Nepal engineering council?
19. What is the purpose of tender? List the essential information to be incorporated in tender notice.
20. What is contract? What are the essential elements of contract?
21. Define Tort and Negligence; differentiate tort liabilities and vicarious liabilities.
22. What is tender? What is security deposit? What is bid validity?
23. Introduce NEC and NEA and discuss the objective of each.
24. What is meant by moral and ethics? Write down the code of conduct to be followed by Engineers?
25. Write the features of labour act. Discuss provision of health and safety in Labour act.
26. Define social change and its theories. Discuss the roles of an engineer in the transformation of societies.
27. What is profession?
28. Define ethics. What are different ethical theories? discuss
29. Evaluate the role, objective of NEA and NEC.
30. Define Society. What are the factors causing social change? Discuss briefly on conflict theories of social change
31. Define intellectual property right? Elaborate patent, design, and trademark.
32. What is code of conduct? Discuss briefly on the code of conduct to be followed by Nepalese Engineers.
33. What are the objectives of Nepal Engineering Council? How does it differ from Nepal Engineering Association?
34. Define Tender. What are the essential information to be given in the tender notice?
35. What is liability and negligence? Discuss briefly on vicarious and liability of partners in tort case.