**Assignment 2 Q1**

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**Introduction**

This essay will analyze a construction scandal in Hong Kong that resulted in an engineer and two company directors imprisoned for 12 years in 2000. The problem will be examined from the perspectives of professional, economic, environmental, health and safety, and legal considerations. Additionally, this essay will briefly discuss potential actions or inactions for those involved in similar projects.

**Professional perspective**

The problem in the news of the dangerous foundations in the 31-storey blocks of flats can be linked to the HKIE code of ethics and the concept of professionalism. The code of ethics sets out the standards of professional conduct expected of members of the Hong Kong Institution of Engineers (HKIE), including upholding the dignity and reputation of the profession, and protecting the safety, health, and welfare of the public and the environment.

In this case, the company directors and engineer involved in the construction scandal failed to adhere to the ethical standards of their profession. They cut corners in the construction process, which compromised the safety and welfare of the public living in those flats. By doing so, they disregarded the HKIE's code of ethics and undermined the integrity and reputation of the engineering profession.

Furthermore, professionalism of engineers is about taking responsibility for their actions and adhering to ethical standards. The construction company and the individuals involved failed to act in a professional manner by knowingly engaging in practices that put people's lives at risk. This is in contrast to the concept of professionalism, which involves a commitment to accurate and ethical behavior.

**Economic perspective**

The construction of the buildings involved the use of short pilings, which are steel posts driven deep into the ground to support the buildings' foundations. Short pilings are a cheaper alternative to long pilings, which are more expensive but provide greater stability and safety. By choosing to use short pilings, the company directors and engineer involved in the construction of the buildings were likely attempting to save costs and maximize profits. This decision had significant economic implications for the safety of the buildings and the investors who had put money into them.

In addition, the company directors and engineer colluded in a conspiracy to defraud investors by using faulty pilings in the construction of the buildings. This fraudulent behavior had severe economic loss for investors who put money into the buildings, as their investments were put at risk due to the dangerous foundations. This highlights the importance of ethical behavior in engineering economics, as fraudulent actions can have significant economic consequences for investors, consumers, and society as a whole.

**Environmental perspective**

One of the main issues is the potential danger to public safety and the environment. In this case, the dangerous foundations due to short pilings in two 31-storey blocks of flats not only put the residents' lives at risk but also posed a threat to the surrounding environment.

Another environmental issue that this news highlights is the importance of proper construction practices and adherence to safety regulations to prevent long-term environmental damage. The demolition of the two buildings due to faulty foundations not only resulted in a huge financial loss but also caused significant environmental damage. The process of demolition produces large amounts of waste, including hazardous materials such as asbestos and lead, which can harm the environment and public health.

Furthermore, this case underscores the importance of transparency and accountability in the construction industry to ensure that companies are held responsible for their actions and held accountable for their impact on the environment. The construction industry has a significant impact on the environment through the consumption of resources, production of waste, and pollution. Therefore, it is crucial to ensure that construction companies operate in an environmentally responsible manner.

**Health and safety perspective**

The failure to undertake adequate risk assessments led to the construction of buildings with potentially compromised structural integrity, risking harm to workers and residents. This highlights the importance of effective risk assessment practices in engineering projects to adequately identify and address potential hazards, ensure the safety of all individuals involved.

For safety culture, the lack of effective communication and cooperation among the developers, engineers, and site workers in this case led to the use of substandard construction methods that compromised the safety of the buildings, potentially endangering the lives of those involved in the project. Fostering a strong safety culture that values and prioritizes safety can minimize potential risks and hazards in engineering projects.

Furthermore, the absence of a robust safety management system failed to identify and prevent the dangerous foundations of the buildings earlier, potentially causing significant harm to workers and residents. Therefore, implementing a comprehensive safety management system that identifies potential risks and hazards and provides guidelines for their mitigation and prevention would avoid similar issues in this case.

Finally, the lack of proper monitoring and evaluation in this case contributed to the construction of buildings with dangerous foundations, highlighting the need for regular safety audits to ensure that safety policies and procedures are being followed correctly and effectively. Regular safety audits can identify potential areas of improvement, ensuring that the safety management system remains effective and continuously improves to minimize potential risks and hazards.

**Legal perspective**

From a legal perspective, the actions of the company directors and the site engineer who were involved in the construction process could be seen as a breach of the legal obligations they had towards the public, investors, and other stakeholders,. The use of short pilings can be seen as an act of negligence, which could have resulted in significant harm to human life and property.

Same as other engineering projects, it is believed that there were agreements and contracts between the defendants, investors, and contractors involved in the construction of the flats, which could have been breached by the use of substandard materials and methods in exchange of graft. Compensation should be made by the defendants to the plaintiff.

Furthermore, the act of knowingly deceiving investors and other stakeholders about the safety of the building structure can lead to severe consequences, including the potential loss of investment and damage to public trust in the construction industry. As shown in the news, the failure of the engineers and director to fulfill their legal obligations towards the safety of the building structure and the property of the occupants can lead to them being liable for any harm caused. Regulation documents like Building Safety Ordinance (BSO) of Hong Kong, Occupational Safety and Health Ordinance (OSHO) of Hong Kong should be in force in this case.

**Personal insight**

If I were involved in similar projects, I would use the following approaches to maintain the safety level of the project and ensure all requirements from all perspectives aforementioned can be met.

The first step would be to report the issue to my supervisor or the relevant authority responsible for the project, instead of overseeing or being involved in the fraud. This would ensure that the problem is addressed and necessary measures are taken to prevent any harm to the workers, colleagues, public, or environment related in the project.

Then, I would conduct a in-depth risk assessment to identify the potential hazards in the project and evaluate the level of risk before making any decision. This would help in developing appropriate control measures to mitigate the risks and potential hazards. Based on the results of the risk assessment, I would propose solutions to the problem that best meets the project's objectives while minimizing risks and adhering to professional and ethical standards.

I would ensure that all solutions proposed comply with relevant safety, health, and environmental regulations, as well as professional and ethical standards, such as HKIE code of conduct, OSHO, and BSO. This would ensure that the proposed solutions are safe and sustainable.