

Engineering code of ethics

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The case is about the construction of Denver International Airport (DIA) as a replacement of the aging Stapleton International Airport and the ethical issues associated with it earlier in the 1990s. Due to the complexity and size of this project, it was logical that this huge project would experience many problems including worker's safety and health issues, cost overruns and controversies over the need for the project. The most widely problem that faced the project was that of the malfunctioning of the new computer-controlled high-tech baggage handling system.

During its preliminary tests, the system mangled and misrouted and frequently jammed causing the shutdown of the entire project. However, the most pathetic of this ethical problem from the perspective of engineering ethics was that which involved the concrete used for the taxiways, runways and aprons at the airport. It was alleged that two subcontractors had filed a lawsuit against the runway paving contractor, a California-based Construction Company called Ball, Ball & Brosamer (also known as 3Bs). These two subcontractors claimed that 3Bs owed them money.

Parts of this lawsuit were that 3Bs had altered the recipe of the concrete used in the construction of the runways and aprons deliberately diluting the concrete with more gravel, sand and water which meant that they used less cement. This was not in accordance with the fundamental canon 6 of the engineering code of ethics that establishes that engineers should act in a manner as to uphold and enhance the honor, integrity, and dignity of the engineering profession and shall act with zero tolerance for bribery, corruption and fraud.

The code insists that engineers should not knowingly engage in business practices that are fraudulent, dishonest and unethical in nature. 3Bs company motivation was to be able to save money fraudulently and consequently increase their overall profits. In so doing, the company failed to adhere to this canon which insists that they should be vigilant in maintaining appropriate ethical behavior through striving for transparency in the procurement and execution of projects. This would be through disclosing all information associated with their projects like procurement reports, supply reports, payment reports among other transactional reports.

This was portrayed by complains of one of the subcontractors, CSI Trucking (responsible for supplying sand and gravel used in the concrete) that claimed that the company (3Bs) had not paid them for materials that had been delivered. They claimed that materials they had supplied had been used to dilute the concrete mixture and had not been paid for because the payments would have left a record of the improper recipe. The actions of the batch plant operator who had sworn in to have fooled the computer that operated the batch plant were against the engineering code of conduct.

Through reporting that he was involved in tampering the scale used to weigh materials and inputting false numbers for the moisture content of the sand, the batch plant operator failed to act in accordance with fundamental canon 3 that states that engineers will issue public statements only in an objective and truthful manner. The code insists that engineers or its stakeholders should endeavor to extend public knowledge of engineering and sustainable development and shall not participate in the dissemination of untrue, unfair

or exaggerated statements or sworn in regarding engineering or its activities.

This was also manifested by the Empire Laboratory which tested the concrete through pouring test samples when the actual runways were poured. These tests were performed at 7 days and 28 days after pouring respectively. However, the test result were completely opposite to what was expected as the concrete being weaker at 28 days than at 7 days, and normally concrete strength increases as it cures.

This showed that the 7 day test were altered opposite to the ethical conduct which asserts that engineers should act in professional matters for each employer or client as faithful agents or trustees and shall always avoid conflicts of interest. Altering data is not a proper use of engineering judgment and is against the engineering ethics. This is since it leads to a conflict of interest and blame. Engineers should advocate for test results that display the truth about the issue facing their activities.

For instance, Denver ought to have opted for an outside company to run the test of the concrete to avoid any forms of manipulations or altering to the results. According to engineering code of conduct, the suppliers should ensure that they supply materials which meet designed and better quality and quantity specifications to avoid a possible lawsuit since canon 4 states that all engineers, be it supplier or purchaser, shall act in professional manner for each of its client or employer as should treat them as faithful agents or trustees and shall avoid a conflict of interest.