

Engineering practice and engineering ethics



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Engineering has a direct and vital impact on the quality of life for all people. Accordingly, the services provided by engineers require honesty, impartiality, fairness, and equity, and must be dedicated to the protection of the public health, safety, and welfare. Engineers must perform under a standard of professional behavior that requires adherence to the highest principles of ethical conduct. The professional responsibility of engineers is to assist the general public to obtain information about risks associated with specific technological structures and systems that may be pertinent to the public's health and interests (Mcfarland, p. 125). However, this does not imply that engineers should take blame in cases of accident or intentional suicide cases. Individuals bear the primary responsibility for protecting their own interests, but engineers must take reasonable precautions ensure the safety of clients, workers, and the general public. Engineering is guided by codes of ethics that shed light on issues such as engineers' responsibility for public safety. Engineering codes of ethics commonly state in the first principle that the engineer shall hold paramount the health, safety, and welfare of the public. Although this is an obvious statement, engineers at times choose not to abide to it. Engineers are nevertheless swayed from the key principles due to five circumstances in which the engineer might choose not to hold the health, safety, and welfare of the public paramount(Wetmore, 2008, p. 201). The assumptions are based on engineer's beliefs that the requirement of the artifacts is internally inconsistent. Correspondingly, if the engineer's religious convictions prevent adherence to the requirement or the engineer believes that the public does not know what is best for it then the engineer is obliged to do otherwise. If the engineer believes that damage to

the environment outweighs short term public interest, then he may overlook the key principles of engineering.

Bridges are designed and built to provide passage for normal traffic flow. However, these high constructions straddling across rivers, valleys and large water masses have drawn the interests of the hopeless to fatal cases of suicides. The Golden Gate Bridge in San Francisco has high recordings of 1500 deaths ranging to an approximate of thirty suicides per year. This has established it as the most popular suicide destination in the world.

Completed in 1937, the bridge connects the city of San Francisco to Marin County. The Golden Gate Bridge is the most studied bridge in the world as it relates to suicide risk management. Many years of study at the Golden Gate conclude that if suicidal individuals can be helped through their crises, chances are extremely good that they won't succumb to suicide later. The difference between entertaining suicidal thoughts and acting on them can be as basic as having a casual encounter with a person - anyone - who exhibits concern and empathy.

In response to mitigate the fatal cases of suicide and unintentional accidents, suicide prevention devices procedures could be established to overcome the issue. Engineers' mitigation costs include the fence which is projected to cost extremely high due to costs for design and installation. In addition it requires a long period of time for installation. The Satellite callbox however would cost up to \$8, 000 per callbox. \$50 per month plus \$1 per minute. The installation of video cameras is projected to cost estimates ranging on \$20, 000 to \$500, 000. This encompasses the costs of installation and maintenance. The design of a Safety net along the risky bridges is

ambiguous to estimate and would required to be completed for total cost estimate (Baum, 1994, p. 235).

Other mitigation processes range from construction of the now popularized ‘ human barrier’ against suicide. The approach capitalizes on the importance of mental health to protect individuals who are at risk either directly or indirectly. Consequently, partnerships with mental health professionals who know how to assess, refer and treat those in danger of self-harm, transportation agencies can do their job and allow these professionals to construct a ‘ human barrier’ that will outperform any physical barrier and save more lives. A case in point is the New York State Thruway Authority concerned with Suicide Prevention through transportation management. The success of the project is based on the premise that neither suicide prevention experts nor mental health consultants are totally responsible for suicidal prevention. The project has in addition, been boosted by the cycles of positive publicity surrounding it.

Another utilized mechanism and system is commonly referred to as wide-range system. This refers to the utilization of technology, awareness and informed intervention offers a convenient package of suicide prevention (Lynch, p. 218). With the consideration of pedestrian’s freedom to access bridges and walkways. Similarly, Physical barriers will significantly impact regular inspection and maintenance operations, cause extensive delays and costs in implementation. Restriction of the bridge from pedestrians is a short-term solution to potential suicide attempts but gains nothing in the long-term prevention as it would be desired.

Professionals in the field of mental health overwhelmingly agree that qualified intervention is the best way to try to stop a potential suicide and establish a process for long-term prevention of suicide. The federally-funded National Suicide Prevention Lifeline (NSPL) is a network of crisis centers located in communities across the country that are committed to suicide prevention. Individuals in emotional distress or in a suicidal crisis can call anytime from anywhere in the nation and speak to a trained worker who will listen to and assist the caller in getting the help they need. Calls are routed to the nearest available crisis center in forty six states that are currently participating in the National Suicide Prevention Lifeline network. The implementation of a system of direct-link phones on and/or near bridges combined with the public awareness campaign that the service exists and is successful, is the first key accomplishment for the New York Streets Bridge Authority (NYSBA) plan to prevent suicides.

The role of education and awareness in prevention of suicidal cases cannot be ignored. Contact with the community with proper utilization of resources and facilities inform the public on suicide as a serious yet preventable act. Potential suicide victims or cases are duly intervened before they happen. These strategies of suicide mitigation are based on prevention which is more important as compared to loss of lives through accidents or suicide cases. These mechanisms and structures and their respective premises could be sold to taxpayers, the electorate and public officials through massive campaigns through media or public forums. Education, advocacy and capacity building are similarly opportunistic channels to convey the message in bid to reduce the alarming death incidents.

The question of effective approaches to curb the loss of lives lies with every member of the society and not solely on engineers. Only the combined efforts of individuals and families, communities, professionals and governments can help in mitigating the problem. Elaborative approaches of identification of the individuals at risk and analysis of the thoughts and circumstances of such individuals should be well-placed and immediate help should be offered. Families likewise have a role to play in identifying warning signals of stress and suicidal tendencies. Since these expressions are unique to each culture (some are general), families ought to know such tendencies and seek for professional help (Davis, p. 90). Local communities have a crucial role in suicide prevention programmes by taking up local issues, problems and causes with the local authorities such as the improvement of the quality of life among low-income communities, reducing violence and crime rates, removing stigma, eliminating discriminatory attitudes, influencing the local press and improving information databases on suicides.