The Ethics of an Engineer Abroad

Corina Overman

Working internationally presents both rewards and challenges for any professional who chooses such a path. Travel and exposure to different cultures can be exciting and interesting. It can also present problems when laws or customs are different from one's own country. This is particularly true for engineers working abroad. When working in foreign countries, engineers are faced with challenging decisions about when to apply or not apply the codes of their own country in light of local conditions and resources.

An engineer working in a foreign country should find a balance between local codes and standards and those of their own country. They must take into account local conditions that require adaptation of their country's codes, and ultimately assess the impact their decisions will have on public health, safety, and the environment. These conditions can include economics, local resources, weather, and desired use.

Sometimes codes from one country do not make sense in another. For example, locally sourced soils used in construction will vary from place to place. Much of the science behind soil analysis and classification has been developed in industrialized Western nations. Tests developed to classify soils in temperate regions are not appropriate for soils from tropical regions because of physical and chemical differences (Omotosho, 1991). Applying these tests to such soils would yield inaccurate information. It would be more appropriate to develop different tests and classifications that are designed for the local soil conditions.

The first canon of the ASCE Code of Ethics states, "Engineers shall hold paramount the safety, health and welfare of the public and shall strive to comply with the principles of sustainable development in the performance of their professional duties." In following the ASCE code of ethics, engineers abroad must look at the consequences of their actions as they relate to health, safety, welfare, and sustainability. Sustainability must take into account economics and local resources as well as global concerns about environmental impact. What is considered sustainable in a developed country might not be in a less developed one, and the ethical engineer will find a balance that serves stakeholders equitably.

As an example of where these issues can arise, consider an engineer from the United States working in India on an affordable housing development with a very small budget. While the United States has state and local requirements for energy efficiency of buildings, India does not enforce such requirements (Young, 2014). Here the engineer is faced with an ethical issue of whether to apply her country's more stringent codes or the less stringent codes of the country she is working in.

Energy efficient buildings are an important part of sustainable design. Measures such as proper insulation, well-sealed windows, building orientation, efficient lighting, and heating and cooling systems all contribute to a building's energy efficiency. Many industrialized countries, including the United States, have made these measures part of their building codes, while less developed countries have not. Energy efficient buildings require more money initially, but tend to save users money over time because of reduced heating, cooling, and electricity bills.

In the case of the engineer working in India, it is not economically feasible to build the housing development to American energy efficiency standards. While the developers may be open to her ideas about energy efficiency, they have a prohibitively small budget. Once completed, the dwellings will be subsidized for low income residents. This is an example of when an engineer can ethically deviate from the design standards of their own country. While it is not ideal to build energy inefficient homes, it is not putting anyone's immediate safety at risk. It could also provide housing alternatives for people living in older, unsafe buildings. Building the development below American standards is preferable to not building anything if there is a need for safer infrastructure, housing, or development.

While issues of sustainability may vary from country to country based on social and economic issues, safety is a universal value. For example, consider another engineer from the United States working in a developing country on a similar housing development. Compared to the United States, the building codes in the country he is working in are not as stringent with regards to structural integrity. If he applies the local codes, the project will be cheaper and he will likely get the job. If he bids the project using United Stated codes, the cost will be higher and he may not get the job. He must make an ethical decision about which code to apply.

In “Which Comes First, Responsibility or Liability,” Robin Kemper (1989) presents a similar ethical challenge that engineers face when balancing morals and law. He argues that responsibility comes before liability because the public interest must come first. While the engineer in this example is not legally obligated to follow United States codes, it is his ethical responsibility to make sure that the buildings are safe. This is part of his responsibility as an engineer and in accordance with the ASCE Code of Ethics. Ethical obligations, including those of an engineer, do not stop at political borders. The engineer’s responsibility extends to any public they serve, not just the public of their own country.

It is possible that the engineer in this example might not get the contract if the price of his bid is higher due to increased safety measures. While this is unfortunate for him, it is a risk he has to take in order to fulfill his obligation to the public. According to the first fundamental principle of the ASCE Code of Ethics, “Engineers uphold and advance the integrity, honor and dignity of the engineering profession by using their knowledge and skill for the enhancement of human welfare and the environment.” Engineering is a profession entrusted with the safety of the public. In order to maintain this trust, engineers must continue to show the public that they put safety ahead of their own financial benefit. To do otherwise would be to discredit the profession.

Clearly, there is no universal rule of which standards an engineer should apply when working internationally. Codes serve as baselines in all situations, but often they are a low bar that the engineer has a responsibility to rise above. Sometimes there will be no applicable standard in place, and the engineer will have to adapt their knowledge or implement new standards. In certain cases standards from developed countries are not reasonable or realistic for developing ones. When immediate health and safety are concerned, the engineer has a responsibility to ensure the safety of the public and must choose their design standard accordingly. The ethical engineer will make sound judgments on when to apply their country’s standard or the local standard so that the community is safe and well served.

Works Cited

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