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Essay #1

Prompt 2

Choice A

Engineers should not be required as professionals to inject political and social concerns into their work. Many believe that it is the individual engineer’s responsibility to take into account political and social issues when designing products. However, it is the company which must be held accountable, and policy changes should come from the company down to the engineers, without engineers taking matters into their own hands, as changing designs at the whim of only one or two individuals can have unforeseen consequences that a larger group of engineers might think through. Engineers have not been trained to consider all social aspects when making design decisions and therefore might not be prepared to take political and social change into their own hands. The company should take care of ethical dilemmas and hire people who are experts on making good, moral decisions, and pass the specifications to the engineers for design. If there is a disaster, the company and governmental regulators should ultimately be responsible, not the individual engineer.

In the World Trade Center attack, the lead engineer should not be held responsible for the lives of the innocent victims and the heroes who tried to save them. Instead, the lack of security screening at the time was a governmental shortcoming, as it was not the engineer’s or their company’s responsibility to make sure no terrorists ever commandeered a plane. However, the company did not set the design specifications to include a fire in the event of a plane crash. This overlooked aspect of the design is what led to the collapse of the trade center towers. Because the fire resistant coating on the steel was blown off, the steel beams were directly subjected to non-uniform heat (NOVA Documentary). This caused a loss of strength and distortion of the steel and angle clips, which lead to the collapse of the towers in an almost free fall of 200km/h (Eager and Musso 4, 5). In addition to the major shortcomings of the government, the engineers were not responsible for this, because they could not anticipate this amount of fuel for the fire. This was not a normal situation where there would be mostly office supplies, furniture, and computers burning. Instead there was plenty of fuel from the planes to keep the fire going. This situation could not be anticipated by engineers, and they should not be held responsible for not anticipating future foreign threats against the united states.

Similarly, when considering the topic of E-Waste, the government and the companies that create electronics should be held accountable for the waste that is created when electronics are disposed of, and not the engineers that designed the electronics. This is because an engineer is not trained on the disposal practices of society, or the political aspects and pressures that come into play in cleanly and securely disposing of electronic waste. The process of designing should be encapsulated in the company, and the process of handling waste should be abstracted and left in the hands of government employees and company experts that specialize in E-Waste, leaving the engineers to specialize in their designs. The other factor to take into consideration is theft of information from E-Waste. In 2010, 290,000 tons of hard drives were thrown away (Electronics TakeBack Coalition 2). These hard disks can retain information about the previous owner and help malicious adversaries perform more successful attacks on individuals and corporations. To reiterate that an engineer should not be held accountable for this situation is that an engineer does not have control over where individuals throw away their used electronics. However, the company and the government can have an impact on these issues. Processes and resources can be put into place to help individuals dispose of their waste properly and educate individuals about digital information theft and how to protect themselves as best as possible.

Clearly, there are strides that need to be made on many fronts to combat the current social and political issues of today. However, these changes need to be made by the government and companies, and when issues arise as a result of poor governmental and company planning, engineers should not be made into scapegoats. When dealing with issues like E-Waste, the government should educate people on the dangers of data theft and how to dispose of their waste properly. Companies should understand their carbon footprint and try to reduce it, while also helping educate the public on the dangers of data theft and proper disposal of E-Waste. This will leave the engineers to do what they are trained to do.