

An Argument Against the Status Quo

If design is the signal of intention, then it could be argued that the current confluence of crises in the United States was the inevitable result of centuries of work done to oppress Black, Indigenous, and People of Color (BIPOC) communities across the nation. Economic inequality, housing insecurity, lack of equitable access to vital resources, and increased exposure to harmful pollutants are all factors of built environments that affect BIPOC communities at significantly greater rates than their white counterparts. The design and construction of these environments both reflects and perpetuates the systemic racism inherent in the institutions responsible for them. As such, it is the responsibility of every engineer and aspiring engineer to understand the beliefs, attitudes and practices that have produced today's environment and actively work to undo instilled behaviors that simply maintain the status quo.

This paper assumes the reader has a strong understanding of the existence and consequences of structural/systemic racism; there will be no arguments made to prove its existence. Instead, this paper will be focused primarily on the argument that the responsibility to undo centuries of oppression lies with professionals trusted by their community to act, above all, in the interests of the human race.

Segregation of minority communities is one of the most pervasive forms of racism practiced in the United States today and is responsible for significant health disparities among minority

groups (Gilbert C. Lee, 2015). Systems of segregation practices are evident in both civil and environmental engineering they can be measured and quantified by such metrics as higher levels of pollution in minority communities; increased exposure to hazardous waste and Superfund sites; lack of access to safe and reliable transportation; and inequities in the safety, accessibility, reliability, and affordability of life sustaining resources like water or fresh food.

These are huge issues affecting millions of people, yet many of the root causes have already been identified: higher levels of environmental pollution and community proximity to Superfund sites are a direct result of a lack of affordable housing and a failure to provide representational and procedural justice in policymaking the more gerrymandering in a district, the less African Americans in that district the more a district is gerrymandered, the less exposure to environmental pollution (Kramer et al, 2018). Lack of access to reliable transportation is due to the practice of prioritizing highway development over public transportation, a policy in place since World War II that emphasizes the needs of suburban commuters over those of the low income, minority, urban population (Sanchez, Stolz, & Ma, 2003). Access inequities between racial groups to safe and reliable sources of drinking water are a consistent issue across the U.S. From Flint, MI to Warm Springs, OR the story that keeps playing out is one of aging delivery infrastructure, contaminated drinking water, and a local government moving slowly and ineffectively to protect the health of its citizens. The health and welfare of low-income, minority populations are impacted at much greater rates due to these segregationist policies as compared to their white counterparts.

In a profession dedicated to improving public welfare above all else, it is absolutely critical that practicing engineers understand the damage done by past practices and take

responsibility to elevate the human experience by insisting on equitable practices. Maintaining the status quo is no longer an acceptable course of action; it is our generation's responsibility to take the initiative. Our generation of engineers must commit to the identification and dismantling of racist policies and focus on building anti-racist policies.

The creation of anti-racist policy will not happen in a vacuum, just as racist policy was not created in a vacuum. There is overwhelming evidence that systemic racism is perpetuated in the design of man's stems (Burlison, 2020), ranging from something as innocuous as an automatic hand soap dispenser to the life-threatening fact that driverless cars are less likely to identify people of color as compared to white people. When systems and policies are designed in a bubble of homogeneity, the resulting product will inevitably fail to consider the lived experiences and needs of those outside the bubble. This is evidenced in such decisions as North Carolina state officials requesting waivers for EPA regulations in order to site a hazardous waste dump in a predominantly black and poor town; the control of Baltimore's public transportation systems being transferred to the state, resulting in the destruction of black neighborhoods, two incomplete light rail lines, and an inaccessible bus system; and the actions of Flint's emergency managers when they chose to knowingly reconnect the community water supply to an unsafe source. Decisions made by a homogenous body time and again benefit that body while transferring the costs to minority populations.

On the topic of homogenous bodies, engineering is undeniably coded as a white, male profession. This perception not only reinforces gendered implicit biases, it marginalizes the ideas of anyone not fitting the specified image of a traditional engineer (Meadows, 2015). In order to attack and solve the problems outlined above, a more diverse set of opinions and lived

experiences will be necessary at the table. Having more women and people of color at the table in engineering school will result in a workforce more capable of two key elements: the ability to recognize symptoms of racist policies as they arise; and the contribution of new perspectives and innovative ideas that will address the root issue and begin to dismantle the entrenched racist policies as they are encountered. The majority of engineers to date have been white males. The intention of previous generations design has resulted in our current reality. It is time to empower women and people of color, and it is time to critically examine the how the core intentions of the engineering profession are experienced in the built environment.

The past four years and 2020 in particular have seen more globally significant events than any time in recent memory. Society is being forced to examine itself on all levels, from the individual to businesses to national governments. Operations across the globe are scrutinizing their standards of behavior for policies that perpetuate racism and discrimination in all forms.

The profession of engineering is no different. The addition of Canon 8 to the ASCE's Code of Ethics has made it abundantly clear that undoing systems that perpetuate racism will be a priority for the profession as we move forward. The ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts (American Society of Civil Engineers, 2017) clearly requires engineers to not only possess an informed, historical perspective, but also be willing to make decisions that will upset the status quo.

Systemic racism in the engineering profession is responsible for the design and construction of built environments that have resulted in economic inequality, housing insecurity,

lack of equitable access to vital resources, and increased exposure to harmful pollutants for BIPOC populations across the United States. Those that experience racism and discrimination are the ones that best recognize policies that reinforce these inequities. By increasing the participation of previously marginalized communities in the engineering profession, the next generation of engineers will begin to redesign the current system. With a diverse perspective and a wide variety of lived experiences, this next generation will disrupt the status quo, and intentionally design an anti-racist system.

Works Cited

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