

Environmental Sustainability Reflection Essay

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All I knew about environmental sustainability before I started University was only the basics of recycling that was taught in grade school in the 1980's and 1990's. Recycling is good for the planet, some resources are limited, reducing what you use is a good thing. I could dig a little deeper and understand that waste is a bad thing, especially with earth's limited resources. I also learned that recycling is expensive and that sometimes people put the wrong things in the wrong bins and cause all sorts of expense and problems. A recycling collection area in my neighborhood was removed because people kept dumping the wrong things in it. With all the ignorance and the passive attitudes surrounding me, I honestly thought that what I could do is small and insignificant, so what's the point? Climate change has existed for millenia. I felt it was arrogant of humans to think that they could reverse or even slow it down. Wouldn't our time, our education and our resources be better spent simply preparing for the results of that climate change?

I went through nearly three years of my diploma with this same mindset. We talked about choosing materials that were manufactured as close to the building site as possible to minimize the use of fuel to transport those materials. We talked about which materials last longer than others, reducing the need for repairs or rebuilds. We talked about choosing materials from resources that were renewable. I listened to all of this and still thought, "We should build the buildings better to protect them from the changing elements associated with climate change." And we did talk about that, a little. Land and infrastructure can be designed to be protected from flooding, earthquakes and fires. A house or a building can be insulated to protect the occupants from both extreme heat and extreme cold conditions. These are important things to consider, and I was further educated about what I could do in my chosen field but didn't change my attitude regarding environmental sustainability. In my opinion, best case scenario was to reduce the negative impact on the environment, but only if it's not too expensive.

I remember the day clearly when my attitude significantly changed. We were discussing something called The Living Building Challenge (if you're curious: <https://living-future.org/lbc/>). In the Living Building Challenge, companies, organizations, and professionals get together to design buildings that push technology and building practices to break new ground. The goal is to create buildings that are visionary, but attainable. They push beyond the building code, beyond being "green," beyond even "high performance" and into sustainable. Sustainable, when defined within the Living Building Challenge is to have positive environmental impacts. These buildings produce more clean air and water than is needed for the building, so they release it back into the environment. They produce more power than the building needs and so release it back into the power grid. This for me was a game changer. I had no idea that buildings could have a positive impact on the environment or that anyone was trying make that happen. It opened a whole new world of "What if?" for me. What if the architectural industry could shift so that everything built went beyond minimizing negative impacts to producing positive impacts? What if other industries could do the same? What if environmental sustainability could be achieved on a larger scale, spanning across various disciplines?

As I have further thought about my experience in learning about the Living Building Challenge, I took those ideals into my give-back project. In the project, the goal is to protect McArthur Island from flood damage that limits access for the community and is expensive to prepare for and repair. Most flood protection projects are very site oriented and focus on eliminating or reducing the damage done by flooding but I wanted to look further. What if every site or property owner with the resources just protected their own land? Flood waters would be blocked from extending beyond the river's edges resulting in higher waters. Who would that affect? The flooding would devastate land where the owner did not have the means for the added protection. What if, when protecting a site, the entire region could be considered? If every time a barrier to high water was placed, other land was allocated for water absorption, so that the amount of water displaced could be absorbed in a different but still local location, what would happen? How could this be achieved? For McArthur Island, I designed a barrier along the river side of the park to protect that area from flooding. I also proposed to deepen the slough that goes around the island, allocating more space for flood water to be, rather than pushing the problem downstream. In one of my work terms, I worked on a site development project that had tree removals required, either for the health of the tree or because their removal could not be avoided. In an effort to offset environmental impact, there are government regulations requiring that for every tree that had to be removed, a certain number of trees had to be planted elsewhere. What if there could be change in the regulations regarding flood mitigation? For example, for every metre of a barrier against flooding, a square metre of wetland had to be allocated for water absorption?

My attitude regarding environmental sustainability has changed drastically. I no longer think that being mindful about the environment is simply choosing the least bad option. Knowing that there are industries that are pushing the boundaries of technology, of regulations, of industry standards through innovative challenges such as the Living Building Challenge give me hope that other industries are doing the same thing. I am headed into the Civil Design field where site development will be my primary job. For specific environmentally sustainable actions, one such effort will be when designing stormwater systems for a site. Currently, the systems can be designed to accommodate the flows of a five-year storm event. I would like to join the push for the industry to move towards planning for ten-year events to accommodate the increase in precipitation seen due to climate change. Planning for larger water volumes from the beginning will reduce the need for repairs or upgrades as quickly. Another option I'd like to explore is the use of permeable pavement for sidewalks and parking lots. Permeable pavement allows for precipitation drainage to the soil below the pavement, reduces pollutants in the water, and reduces heat pollution. The permeable pavement also allows for stormwater to replicate the natural hydrological cycle, moderating the flows in precipitation. As I start my career in the site planning field, I will be constantly be researching new ways to not only reduce the negative impacts but to achieve that positive impact on the environment as described in the Living Building Challenge.