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Plastic Ocean

Understanding the Damage of Overconsumption of Single-use Plastics

MAKENZIE HILD

Architecture 490 (Urban Installations)

Mentor: Karla Sierralta

This project includes a strategically designed and engineered recycled plastic art piece that would be installed in various urban settings to inform the public of the issue of our overconsumption and dependence on single-use plastic. Viewers are able to interact within the art installation that provides an experience by creating a moment of this harsh realization. It is meant to educate and inspire the entire public.

Every day, people around the world buy a total of one million plastic bottles per minute. Studies show that eight million tons of plastic end up in the ocean annually (NOAA, 2018). We have become over-dependent on single-use plastics and live by a throwaway ideology. The life cycle of plastic is extremely problematic for the environment. The material never decomposes, but rather breaks down into smaller pieces called microplastics. As the plastics travel through the ocean the water, wind, waves, and salt break the plastic down into its microstate. Researchers predict that there will be more plastic in the ocean than fish by 2050 (Harrington, 2017).

Living in Hawai'i, we are surrounded by the Pacific Ocean. Within the Pacific Ocean there is the great garbage patch, an accumulated collection of marine debris and trash floating, growing, and harming thousands of marine creatures (National Geographic, 2012). This patch spreads plastic and microplastic across the entire ocean with winds and currents. Thousands of plastic bits wash up on the shores of all the Hawaiian Islands, carrying the plastic through a variety of

marine ecosystems. Coral reefs, in particular, are experiencing the negative effects of plastic in the oceans. Coral reefs protect coastlines from heavy waves or damaging tropical storms. They provide habitats and shelter to an abundance of marine organisms (Forsman, 2005). However, single-use plastics contain micro chemicals that poison the reefs, wounding, infecting, and damaging coral communities (Chartier, Fetridge & Duprey, 2019). It is estimated that by 2050 there will be more plastic in the ocean than fish (Harrington, 2017).

This short animation proposes an urban installation that is meant to create a connection between our everyday lifestyle choices and the negative impact we are causing on the environment. My design is made entirely out of collected plastic bottles, cut, and reconstructed into a wavy archway. When walking through the archway, it mimics the experience of a snorkeler, floating through the water, looking at the beautiful coral reefs. However, instead of reefs, there are patches of collected colorful plastic pieces piled together. This showcases the harsh reality of what coral communities around the Hawaiian Islands



My name is Makenzie Hild and I am a third-year architecture student at the University of Hawai'i at Mānoa. I strive to protect and conserve the beautiful environment that surrounds us by incorporating sustainable practices into all of my work. This particular project allowed me to integrate sustainability within design by using only recycled plastic bottles in hopes to visually inform the public of our overconsumption of single use plastics. My project is meant to encourage everyone to limit their dependence on plastic and to showcase and inspire the power of "up-cycling." Please enjoy the video, and one day soon the urban installation.

are experiencing. This installation is meant to be showcased around the island of Oahu at beaches, parks, shopping malls, and schools. As humans we are subconsciously harming marine ecosystems, and it is time to make a simple change in our everyday lifestyles.

This urban installation puts a spotlight on the environmental issue of overconsumption of single-use plastics and will be showcased at various beaches, parks, and public squares around Oahu to inform an assortment of crowds and people. My ideas are meant to inform and inspire others to spread the word about this issue in a positive and creative way that utilizes the upcycling of recycled plastics in hopes to alter the public's dependence on plastic use. We must work together to change our dependence on plastic to keep our planet safe and help preserve the beauty beneath the sea.

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Video

<https://www.youtube.com/watch?v=MVBjtTk4obc&feature=youtu.be>

