The Modern Tree

My work was based off of the idea that industry is having a negative effect on nature. One of the largest negative affects was of single use objects, and waste they create. To gather materials, I traveled to the local Napa City Recycling and Transfer Station, I learned that 1.6 million pounds of trash goes through the plant a day. This contextualized the topics I was exploring and inspired my material choices. I collected irrigation tubing that I got from the dump to build the tree. I used irrigation tubing because it is a single use object, one that is is costly to be installed and to be removed. I felt that to best demonstrate this relationship between nature and industrialization would be to create a tree burnt by our harmful systems.

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New Mexico

The Relationship Of Nature And Industry And Reclamation Theory

William T.

In this paper, I will examine the relationship between the methods used in the industrialization of nature and the outcomes of the products created. I aim to critique past and current methods used in industry and propose a better solution by identifying and analyzing successful models that can be seen today. This solution is the Reclamation Theory. It is the idea of working in the middle space between an idealistic idea of industry and what we have now. This was based off of my interest in posing questions about the morality of profiting off of nature through industrialization and whether or not the benefits justify the current exploitation of the natural world.

The story starts on a night when I got into a large argument with my older brother, to the point of tears. We were both young around the ages of 10 and 8. I don't remember why the fight started, but the piece of the fight that I do remember went something like this:
"You're stupider, and I'm older so I'm better."
"Noooooo, you stupider, and you're older so you'll die faster!"

The argument continued on like this for a long time, progressively worsening with worse grammar and even worse attitudes. It continued until I went storming off into the forest. The wind howled and the trees rustled in a way that made it seem that everything was alive and moving about. There was a full moon that night which allowed me to see my environment and the beautiful forest around me. I felt like I knew where I was, and where I was going. I walked until I found a small grass clearing. It was a grassy clearing for New Mexico, which means that it was a small patch of dead grass that was mixed with rocks. I went there and sat down, the grass, and rocks embraced me as I rested.

While I was there I had time to think. I thought about forgiveness. I thought about how I messed up and how my brother also messed up. I realized that I was equally part of the problem. I then understood that I was also to blame. When I returned home an hour later, I was sore from the hike and the run but I had a new mindset. I found my brother and we talked, and this time it ended in understanding rather than an argument.

This story illustrates why nature meant so much to me, and why this idea and project means so much to me. It is because nature has been my safe space, and has always been a pick me up. It was also the seed of a long growing relationship with nature. As I continued to grow and learn more about nature around me I began to see how the nature I loved was disappearing such as fossil fuels creating energy but also horrible glasses, and how many ways of how we grow food cause many issues with both health, pollutants. I also learned of idealistic views of how people could see the world functioning, and how it could be a beautiful place. I learned so much about how I was losing the natural world that I wanted to change some of the issues. Which lead me to coming up with Reclamation Theory or RT for short, and creating products using that theory.

Industrialization has changed all aspects of modern living from farming to how we produce and consume energy. With it, we have improved our way of living. But with these improvements there have also been negatives, rippling effects that have caused harm. A harm I wish to avoid with my products. A good example of this complexity of industry cause and effects are dams. Dams have a large number of purposes for humans including hydropower, irrigation, flood control, and water storage. But, dams also cause problems such as stopping fish and animal movement and altering the flow of a river, which can sculpt the river in a different way, inadvertently harming wildlife. Abandoned dams are also a problem when they are left as empty blockades. Although many

Dams cause great harm to nature, they can also be designed in ways that can both help people, and do not cause harm to nature. It's a win-win scenario. There are ways for fish to migrate through or over a dam, there are ways to maintain the flow cycle of the river, but most of the time it isn't done right or even attempted. I use this as an example to illustrate that there already exists cheap, simple solutions but we choose not to implement them because it is cheaper to not worry about nature. This is because of the separation between people and nature. This is so apparent that most of the time people don't even realize the impact they have on nature. Industry has stuck with the same old attitudes and building techniques, which aren't win-win situations, even though there are other more effective solutions.

How did we get into this situation? We got into this situation because industrialization is premised on infinite growth which can only occur if the planet's resources are limitless, and just for us. Now we know that this core belief of industry is false, and harming nature but we haven't changed. If we are to solve some of today's biggest problems like climate change and the loss of species, animals, and habitats, the relationship between nature and industry must change. We must alter our current standards.

Why are we stuck with these low standards? Is it that morals and a connection to nature don't trump monetary value or profit? Well yes it is because people in industry focus on profit rather than morals. Why can't we focus on what is most beneficial for people and the planet rather than the wallet? Rather than building something profit focused, why can't we build products that support our planet? The goal of profit is a large reason for the depletion of nature. An example of this is resources because materials and resources are free while recycling materials is more costly.

These ideas were a large focus for me and some of the core concepts expressed by the book Cradle to Cradle by Michael Braungart, and William McDonough. Braungart and McDonough truly inspired me with the concept of cradle to cradle rather than cradle to grave, which is how industry has evolved. Cradle to grave is the system that supports throwing things away. We use an item and then get rid of it. Such as throwing an old toaster away and getting a new one rather than working to fix the old one. The Cradle to Cradle idea is putting "re" back into resources. It is the idea of recycling everything, just as a nature does. This is supported with a quote from the book "Consider this: all the ants on the planet, taken together, have a biomass greater than that of humans. Ants have been incredibly industrious for millions of years. Yet their productiveness nourishes plants, animals, and soil. Human industry has been in full swing for little over a century, yet it has brought about a decline in almost every ecosystem on the planet. Nature doesn't have a design problem. People do" (Braungart, McDonough). This quote demonstrates the basic idea of the designing I was doing. It was looking towards nature for solutions.

There is a lot we can learn from looking at nature. For instance, the issue of waste. In nature every part of everything is used, nothing is "waste" and everything is recycled. This can be done with people as well. If the waste is natural then it can go back into the earth, and if it is technological or not biodegradable it can be taken apart, reassembled and put back on the market. If we can copy this idea then there wouldn't be any waste and industry would become a circular system. Nature can also help with how we get energy, and create or grow food. These solutions are a long way away from or current idea of industry, but why? The reason this isn't happening is because we have a flawed base concept of industry. A flawed concept of industry that I wanted to change.

I decided I was going to help; I was going to create a product or come up with an idea that would begin to solve a problem that is involved with industry and nature; I was going to benefit the planet with my product. All of this lead me to create the concept of Reclamation Theory (RT); recycling waste and other unusable items and transforming them into new products and solutions to benefit nature and people.

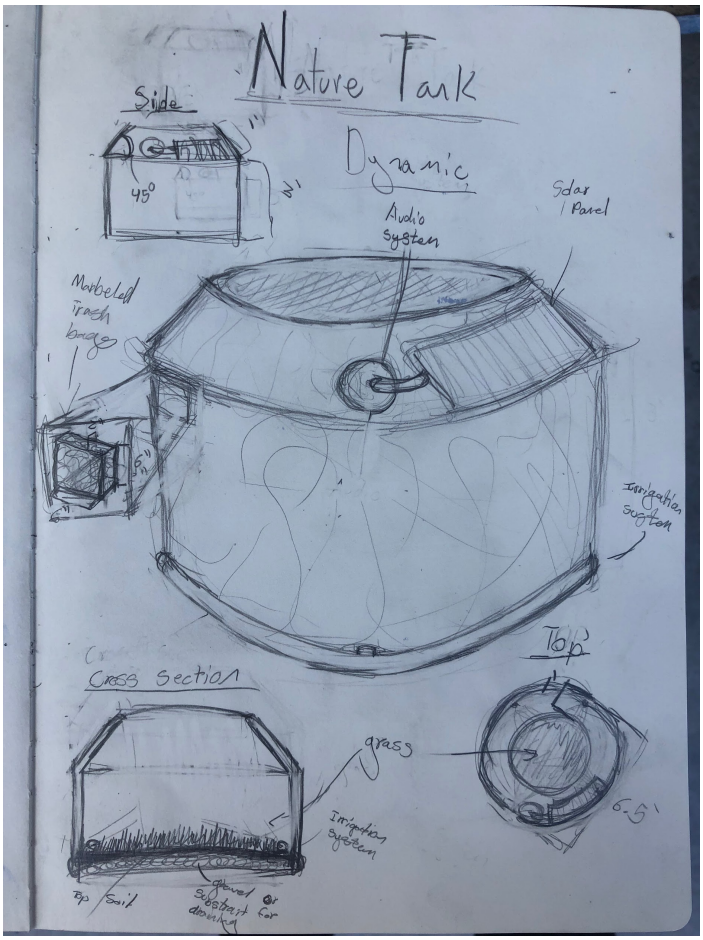
RT started from the idea of a middle ground. A middle path between the ideas of a future perfectly ecological form of industry, and the systems we have in place now; discovering what can be helped and adapted while we move towards this idealistic future, and taking stock of what has come before.

RT finds answers to the problems that surround us by working with the waste we have created in order to improve our lives further. This is a middle ground, a stepping stone if you will, between the idealistic future of cradle to cradle and the industrial design we see today. It is taking

trash and waste and using it to solve a problem. In the future we don't know if we can create this perfect circulatory system, and even if we do, will we have trash left over. The idea is to reclaim the trash and put it back into use. It is also to circulate the trash and have it spread out through homes in products rather than in waste in a landfill. It is the idea of reclaiming items and materials that are lost without creating more waste. The first product shows this perfectly.

Project One

The first project tackles the lack of fresh food and clean water in third world countries. Here are some facts that framed this project: 1 billion people suffer from hunger; around 36 million people will die this year from hunger alone; The main cause of hunger is poverty or the lack of the ability to get food; 502,000 people die each year from diarrhea—caused by unsafe drinking water; 2.1 billion people have no access to safely managed drinking water; 159 million people get their drinking water directly from surface water sources; and, 263 million must travel more than 30 minutes daily to collect their water. All of these facts come from the Food and Agriculture Organization of the United States or FAO. Lack of fresh food and clean water are both very large problems which industrial farming can't solve. In fact, large scale farming creates equal amounts of issues which is why the middle ground is important.



In researching farming, it became clear that I needed to avoid factory farming and industrial farming. Factory farming is using a factory, mass production concept on livestock. It focuses on production and having the animals gain weight fast. It requires more water. It can be described as inhumane and diseases can grow from this approach that negatively affect humans. While, industrial farming is the number one food production system to date. Industrial farming is using one crop on large fields with GMOs and pesticides to keep the plants growing fast and resistant to bugs. It depletes the soil, produces less nutritious food and causes all sorts of other problems for nature. Both of these types of farming create a large amount of waste.

Waste was one of my initial problems. I decided that I would try to farm with waste by using old plastic water bottles because they are just left around. These goals defined the bases behind my product - A gardening/farming system made out of old plastic water bottles that would create water and food. Old boxes could also be used to label and create a plot system. My idea was to tackle a problem like too many thrown away plastic water bottles while also increasing food

production. It is also based in the ideas of RT, because it focuses on the waste, and reclaims the plastic bottles so they can be reused, in a beneficial way. It is the idea of adapting to the issues we have. That is why this system is a good example. Although, this system does not produce a large amount of water or food, it is eco-friendly and uses recycling and reuse at its base.

Plastic bottles for the farming system could be collected by going to landfills and walking through urban areas. The bottles could be used as planters to start seedlings which eventually could be transported to the earth. This product could also produce clean water by growing plants such as yellow irises or water lilies which can filter water to be safe and drinkable. Cilantro can also be used to filter water by grinding it up and passing water through it . This process filters out heavy metals. This process only produces a small amount of water but it would help solve the unsafe drinking water problem.

Figure 1

Figure 2

Figure 3

Above, as shown in figures 1, and 2 are the bottles themselves, and figure 3 is the full set up. By actually creating this product, I was able to find a couple amazing things. One of the most amazing things was that I was able to go about a week and a half without adding any new water into the system. This is because of the bottom of the water bottle was catching almost all of the excess water. I also realized there are many problems that come with this design as there would be a need for soil, seeds, and water to get the planters started. There would also be the problem of creating more weight in the planters to make everything stable, but I have been able to start growing many different plants in this system. This is an example of RT and its effectiveness in action.

I was not the first person to tackle this crisis. There are many organizations and nonprofits that work on providing food and water for developing countries, and those in need. One of the

organizations, Solar Garden from Israel, uses plastic bottles to make green walls as a school project. This shows the steps being taken to a better world.

Project Two

My second project doesn't have a practical application, but it has a more personal component for me. This is because it is trying to get the forest into one's home to combat the large separation between people and nature because of urbanization. Cities are a big staple of industry and they create a large amount of pollution while they push nature aside for humans. This is an issue because the largest populations live in cities and that means more and more people are separate from nature.

Urbanization doesn't seem to have room for nature, even though nature has many benefits. Exposure to green space reduces the risk of type II diabetes, cardiovascular disease, premature death, preterm birth, stress, and high blood pressure. The study showed that people who lived, worked near, or visited green spaces often had less stress and the chemical that is known to cause stress was lower in those people. Green spaces are an area of grass, trees, or other vegetation set apart for recreational or aesthetic purposes in an otherwise urban environment.

The reasons behind the health benefits aren't scientifically known but some of the theorized reasons are that being outside gives you more vitamin D and allows you to breath in cleaner air and there is a higher possibility for physical activity and socializing, both of which can lower stress. Shinrin yoku, or forest bathing, is a practice that focuses on attaining the benefits of living near or visiting green spaces.

Shinrin yoku is the idea of breathing in the natural atmosphere or taking in nature through the senses. It aims to bridge the gap between humans and the natural world so that we can be one with nature. People used to go to the forest to get out of the hustle and bustle of life to find calm and relaxation. But now, most Americans spend 93% of their time indoors. We are separated from nature more and more because of urbanization and industrialization but, there is another way to get out of the hustle and bustle of modern life.

I decided to create a product that could bring the forest to the person in an urban environment. While staying with the ideas behind RT and working with materials that have fallen out of their use time. I decided to start with the concept of a sensory deprivation tank. A sensory deprivation tank is a dark, soundproof tank that is filled with a foot or less of salt water. The benefits of these tanks is that they reduce stress, anxiety, and pain while also increasing energy. They started small but soon became a common spa practice.

I decided to create a nature tank that is filled with soft grasses and has an open ceiling. The idea for this product comes from the belief that people are becoming more separated from nature. It is a separation from something that I love and a problem I want to help fix. The nature tank is meant to bring nature to the consumer in a more urban environment.

The shape of the nature tank would be a 6.5-foot circle, that is 3 feet tall, and it would have a one foot overhang towards the middle. The design would allow the grass to grow while also giving a person a place to rest with their head in the dark so they could sleep. There would be a small audio system that would play sounds of a meadow that could would be charged with a solar panel on the overhang. There would also be a small misting or irrigation machine that would water the grass. This is all shown below in Figure 4.

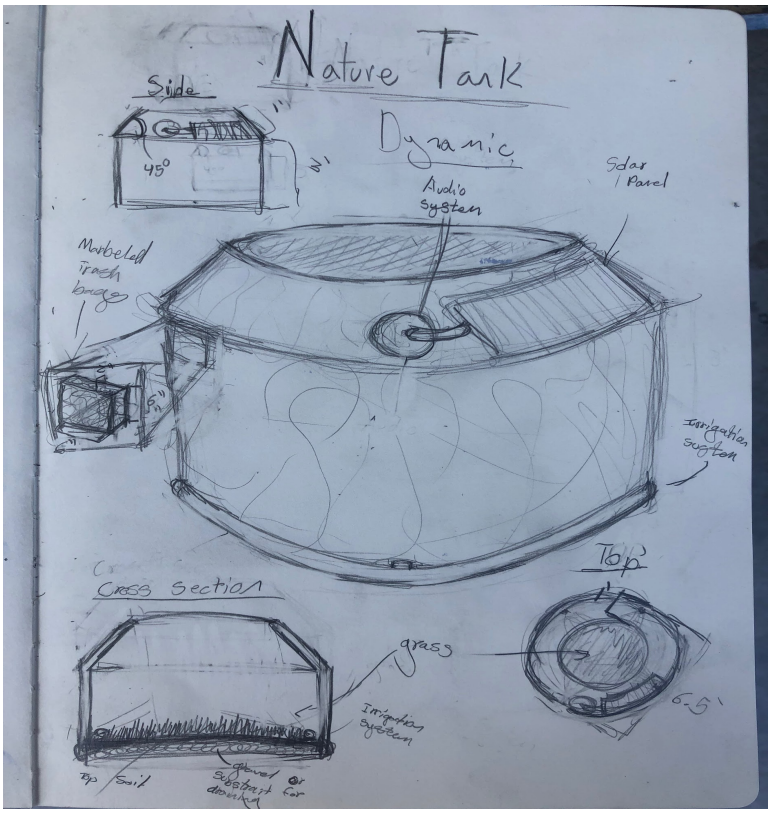


Figure 4

The walls can be made out of many recycled things. You could make plastic bag bricks for a non-load bearing wall. The bricks are good because there are an abundances of old plastic bags, and it saves them from harming the environment. You can make a beautiful marble-like look from plastic bags by heating them to a point where they began to melt but still retain their mass and shape, and pressing the bags into a mold.

There are problems that come with this product. The melting of the plastic can create some very dangerous gases that can cause very bad side effects and the grass does need sunlight and water to be maintained.

Overall, my projects touch on the idea of Reclamation Theory, adapting waste to help solve problems created by how we currently live and to work with materials that our cradle to grave system has given me. I tried to find ideas that both helped people and nature by supporting nature and people. While we head towards our cradle to cradle future, we must find solutions to combat how industrialization and urbanization are changing human beings connection to nature and in turn, negatively altering nature.

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