

Xavier College Preparatory

Power Against Hunger

Luminosity's Illuminate Innovation Competition

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## **Intro**

A great deal of food waste takes place in all communities. However, there are countless communities in need of food and who are going hungry. They could benefit immensely from this introduction of wasted food into their communities. “Food waste occurs along the entire spectrum of production, from the farm to distribution to retailers to the consumer. Reasons include losses from mold, pests, or inadequate climate control; losses from cooking; and intentional food waste” (“The Nutrition Source”). Although this food is thrown out due to some sort of impurity, many times, this food is still edible. Therefore, there should be ways to recycle this food and use it to feed communities in need.

## **Research**

Food waste is a global issue that impacts various other problems. For example, food production among other food departments collectively create about “85 percent of greenhouse gas emissions” aside from the emissions created by food waste in landfills (“Sustainable Management of Food | US EPA”). Not only does this waste energy, but it harms the Earth and therefore contributes to global warming which then directly affects human health through dangerous air quality. This is an example of a threatening domino effect.

Food leftovers is a big contributor to food waste around the world. With the potential to still be edible, these leftovers being thrown out is missing its opportunity to be distributed to those in need. Though many people believe that they will finish their leftovers, “the researchers found that leftovers were more likely to be picked at and not fully eaten” says Brian Roe, an applied economist at the Ohio State University after researching the activity of leftovers among 18 men and women (Intagliata, 2020). We don’t realize the effects of the wasted food that we

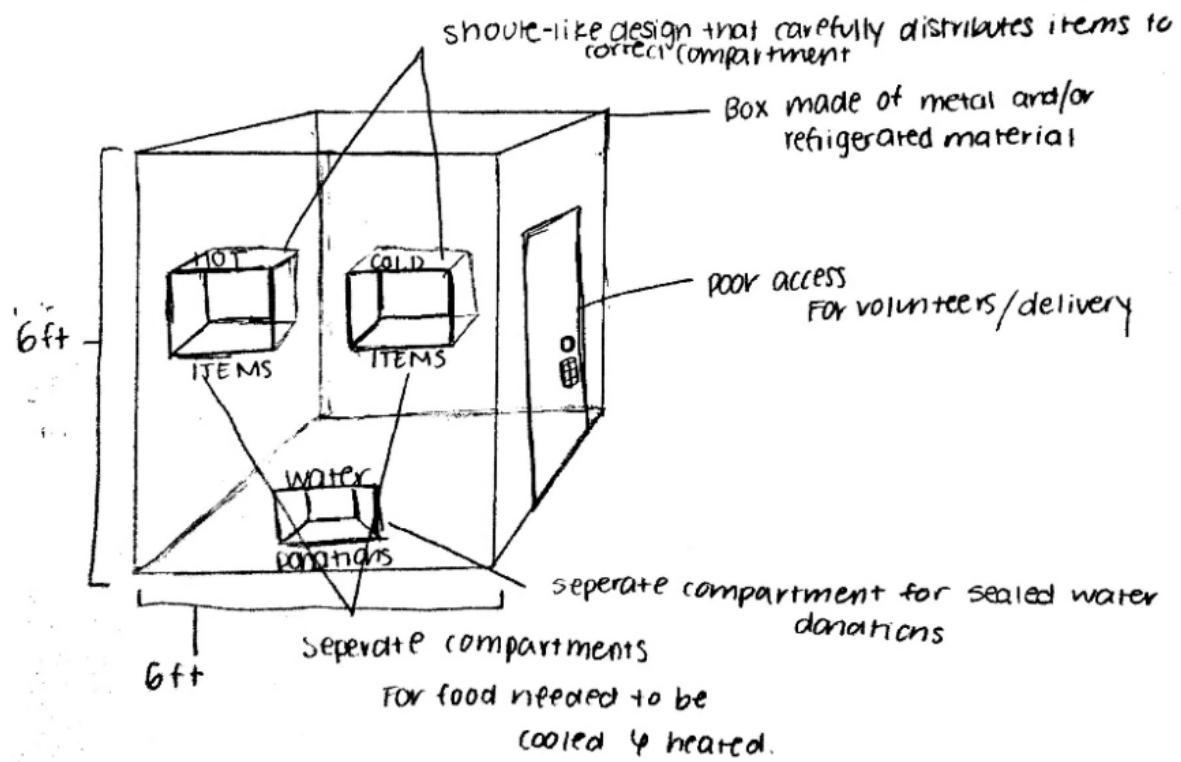
have the leisure of saving. Instead, we should think about the opportunities that can be given to those in need by simple actions as giving away our leftovers.

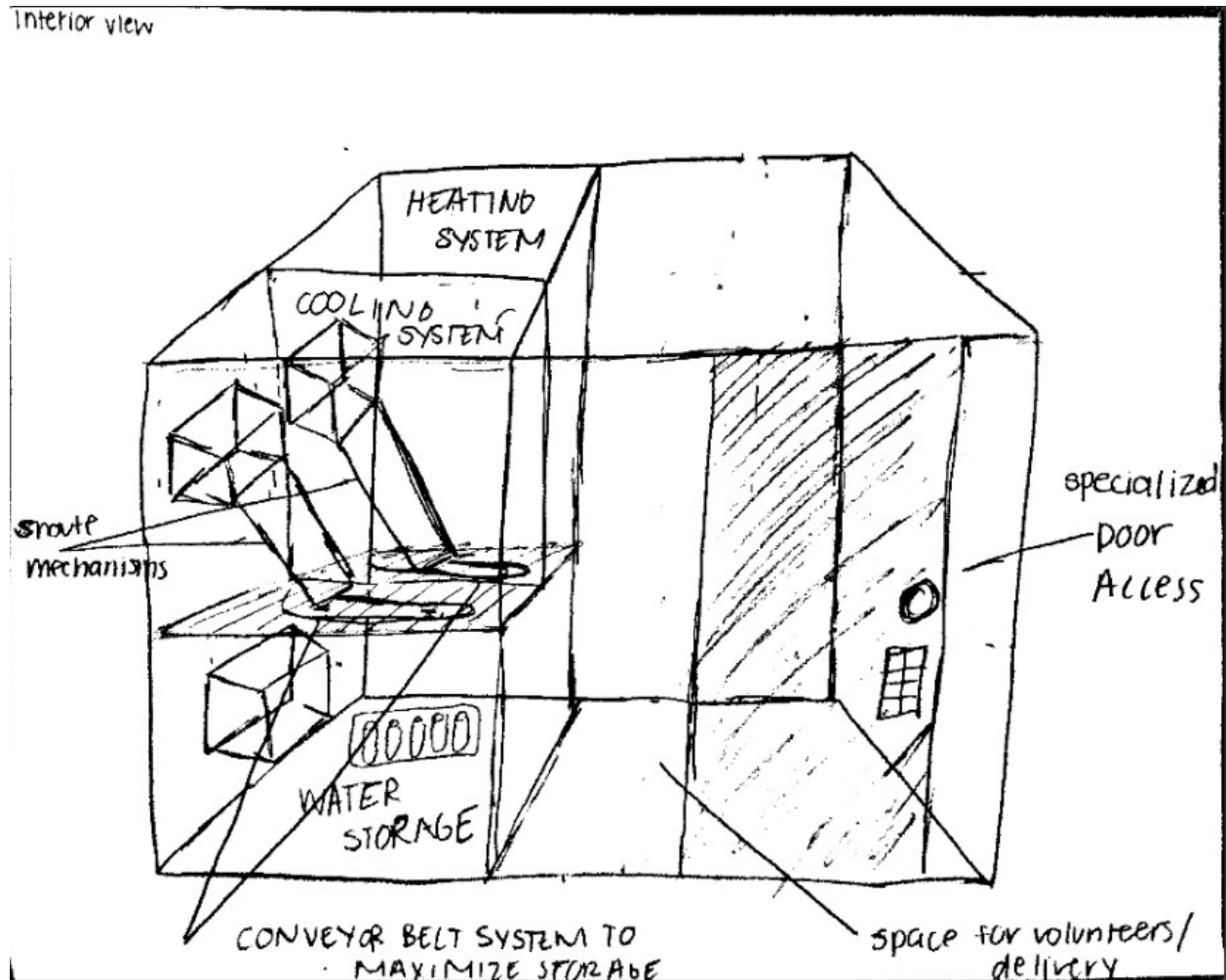
### **Solution**

Our solution is to create an organization of buildings, similar to clothing donation bins that are stationed usually around grocery store parking lots. With this building, users can deposit their leftovers from restaurants, fast food restaurants, any sealed water donations, and any other food donations they may have. In our prototype, we would have separate compartments for heated and cooled foods, as well as a water donation compartment. There will be room in the building that will allow possible volunteers and workers to collect and distribute to our possible warehouses that will prepare the best condition of the food and be delivered to our community partners. In our design, we will have a chute mechanism that will make the best possible outcome for the food to be organized inside the building. This solution will solve the problem of food waste by leftovers that have the potential to still be eaten. Rather than throwing away these leftovers, users have the opportunity to give back to those in the community in an efficient and convenient manner.

### **Preliminary Design:**

Preliminary Design - Illuminate Competition  
Power Against Hunger  
Front view/Right view/Exterior view





### Community partners

We could connect with schools in low income areas and work on how to get kids in those neighborhoods food for all meals, similar to lunch programs. We would also connect with food shelters around the state that would benefit from our organization. We would like to possibly work with organizations, such as Uber Eats, that will make it easy to bring these deliveries to life in an efficient way.

### Timeline

Stage 1: Reduce

- In order to make a difference, we have to start using less waste in the first place.

#### Stage 2: Reuse

- Most of these products are able to have another purpose in life so reusing it can help reduce food waste.

#### Stage 3: Compost

- Once those food products become waste, the food waste can be used as soil. Composting improves the soil so it can grow more nutrients into our world.

#### Stage 4: Landfill

- At this step, you should have no food waste left or very little food if you have done the first 3 stages. With the leftover food you have left, you probably need to put it into a landfill. Landfills are much safer than regular dumpsters because they dispose of the material by burying it with soil.

#### **Solution Timeline:**

Stage 1: Work with manufacturers and start funding for our solution. This may include funding from local government organizations, as well as presentations for grants and other sources of fundings. Organizing plans with partners is also part of the first stage, again presenting our idea and the benefits of its implementation.

Stage 2: Work with engineers and designers to make the best possible prototype and outcome based on our preliminary design and research on what would work best for this solution.

Researching the best materials and sustainable practices for our solution is also essential. We also

need to start putting out notices for volunteers and get the attention of shelters and schools that we will be able to work with to make deliveries and exchanges from our stations.

Stage 3: Finding locations that are best for our solution. We would like these stations to be near restaurants, fast food restaurants, and grocery stores for the best possible access for users. We will also implement a management system for volunteers and possible workers for the delivery and exchange system, while keeping our organization non-profit.

### **Team**

Our team consists of Xochitl Felix, Maryel Rivera Ramos, Jaya Vjungco, and Tatum Zerbib. We are all high school students at Xavier College Preparatory and are taking AP Computer Science Principles, which is how we are completing this project.

Works Cited

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