2021-2022 City Model Slideshow

School/Organization: Mount Aviat Academy

Educator Name: Mrs. Hanby and Mrs. Dymowski

Future City Team Name: **Satori**

Delete all PURPLE text before submitting the slideshow for judging. Keep text that is black.

Deliverable Details/Requirements

- This slideshow is your chance to present your model. Whether your team created a single model or multiple segments, here is where you show off the future city you designed to the judges.

- Choose photos of the various segment(s) that best show the requested content. Where noted, you can put one (1) or two (2) photographs of your team's work. The photos can take up as much space on the slide as you like, as long as they do not cover the slide title (upper left) or the text block descriptions on the right of the slide. More than two photographs are not permitted per slide. Collage images with more than two photos are not permitted.

- Do not change the size of text boxes in this template. All written text must fit within the boxes and *cannot* be smaller than size 14 in Calibri (or equivalent) font.

- When finished, save the slideshow as a PDF and upload to the Educator Dashboard at FutureCity.org.

- Review the 2021-2022 Program Handbook for a full list of rules and requirements.

Section I

CITY DESIGN

Residential Zone-- Hobbit Houses and the Pole

What is important for the judges to know about your residential zone?:

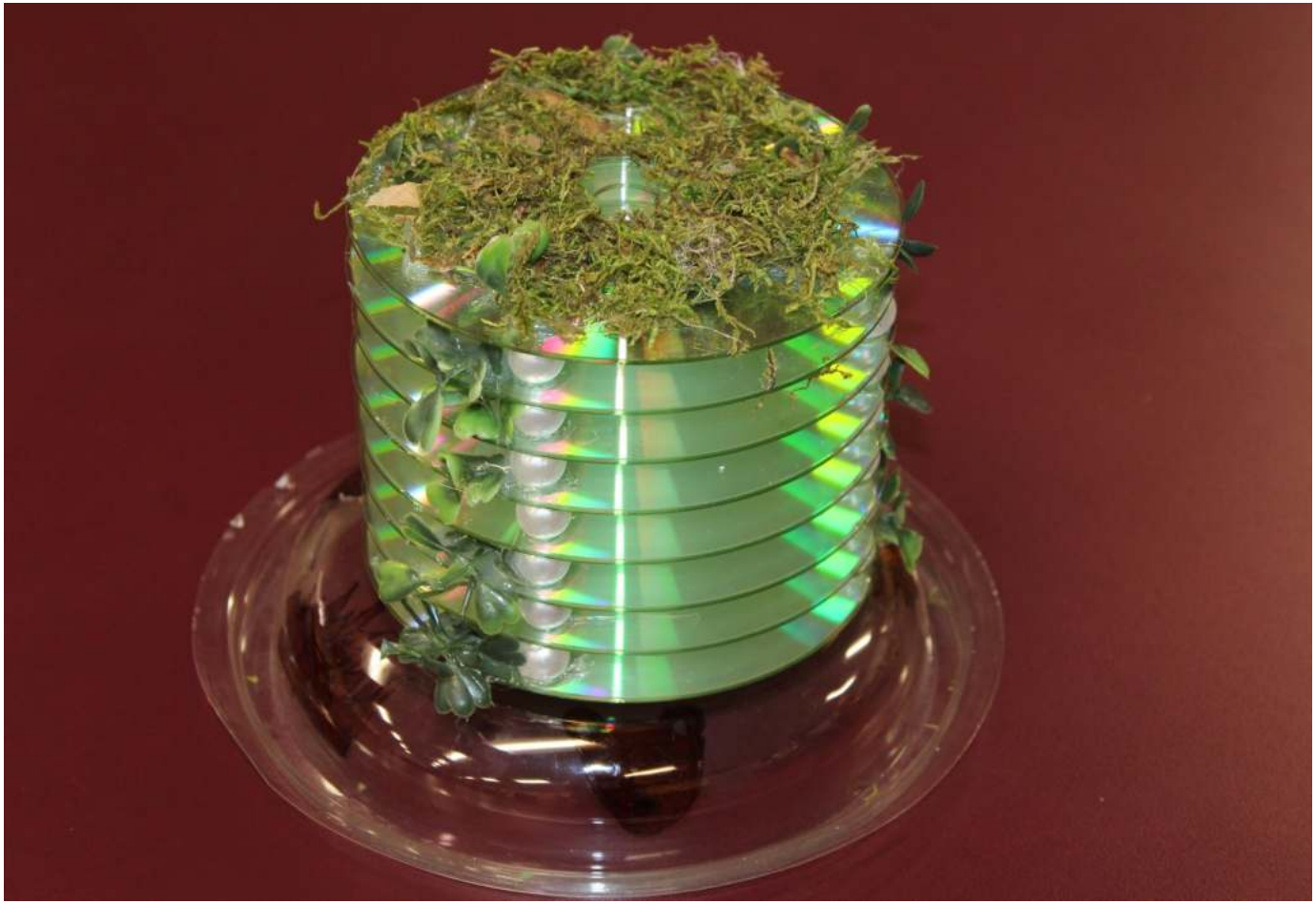
Our environmentally friendly Hobbit Houses, halfway buried to preserve heat with green waste-free roofs, allow opportunities for a rural lifestyle. They use the MicroManager in order to make sure they are able to make useful energy out of the waste they produce. The energy is sent to the SuperGrid to power the city and their homes. Also, in the Pole, all inhabitants have easy access to all recreational, medical, commercial, educational and other buildings. The citizens of Satori are able to decide whether they want to live in the Hobbit Houses or the Pole.

Commercial Zone-- The Pole

What is important for the judges to know about your commercial zone?:

The Pole is the hub of life. All medical, government, business, and education facilities are here. The totem pole design is intentional and reminds everyone of our Covenant of Reciprocity. We benefit from the smart placemaking decisions of our founders who designed our city focusing on strengthening the connections between our citizens and our environment. Our city's residents do not purchase items but license them. We do not own the products we use. When products break, they are returned to the business that created it to be reused or recycled into new products. The Pole contains commercial and residential zones that alternate floors in the Pole.

Industrial Zone--Insect Farms



What is important for the judges to know about your industrial zone?:

Industrial zones provide jobs for people and products for commercial buildings. Ours are specialized to take advantage of natural resources like bamboo, algae, and insects. We also produce and license our unique technologies like Wabivision which nearly eliminates fashion waste and Bamblobs and Bamwraps which eliminate packaging waste. Our industrial zones also include our insect farms and aquaponics. All factories are designed to create eco-industrialism. Our main focus is to reduce and reuse in all aspects of industrial production. We aim for near net zero.

Infrastructure Example 1: Windmills

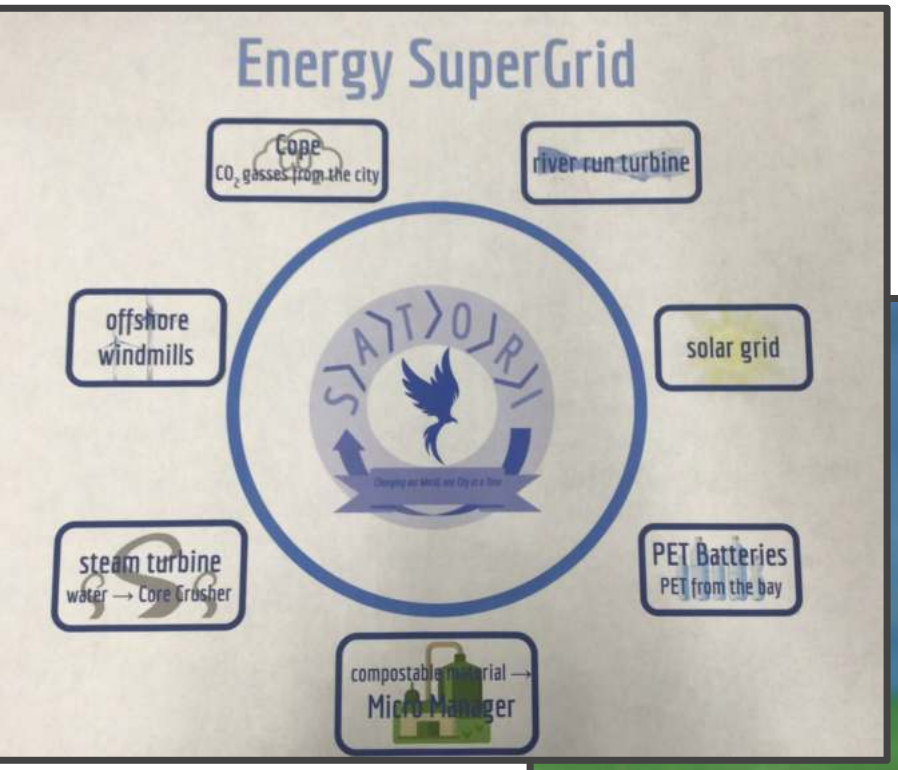
What type(s) of infrastructure are shown here (water, power, utilities, etc.)?:

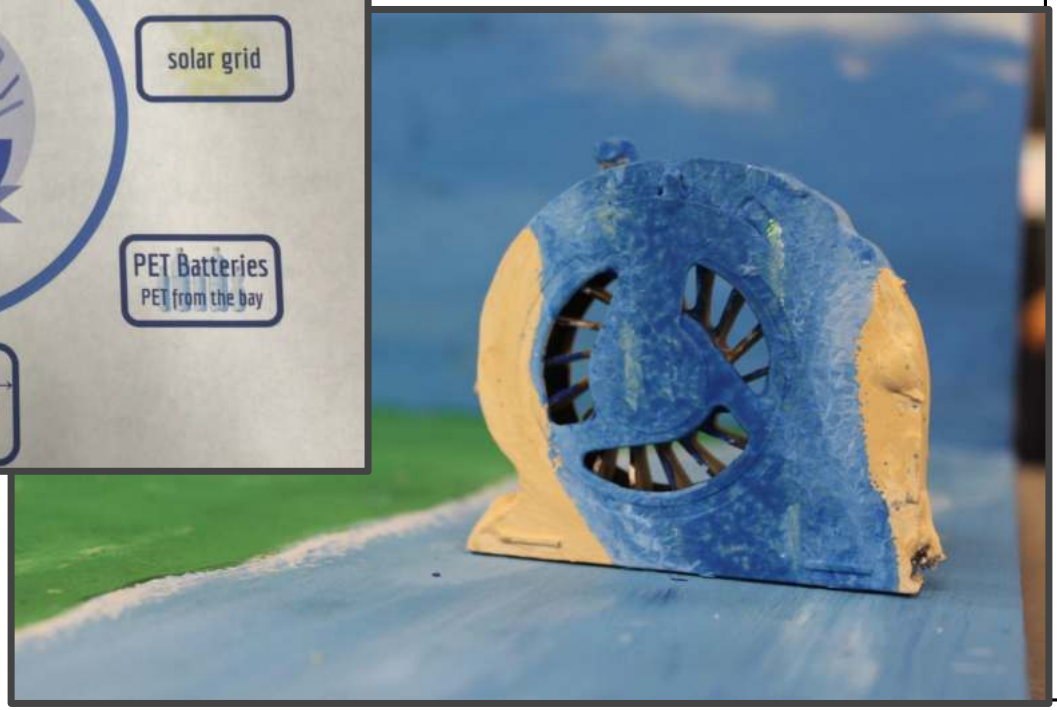
Power Utilities

How are these related to the realities/challenges of a Waste-Free City?:

Our windmills use offshore wind to power our city and generate more than 2000 GW of energy. The Chesapeake Bay is ideal for this superpower energy source which makes the high cost of the windmills an easy trade-off providing a manner in which the city is able to power itself cleanly with limited waste. No forests to cut protects resources on land. Offshore systems consume more materials than onshore, but benefit from more harvested energy and a longer lifetime

Infrastructure Example 2: River Run Turbine





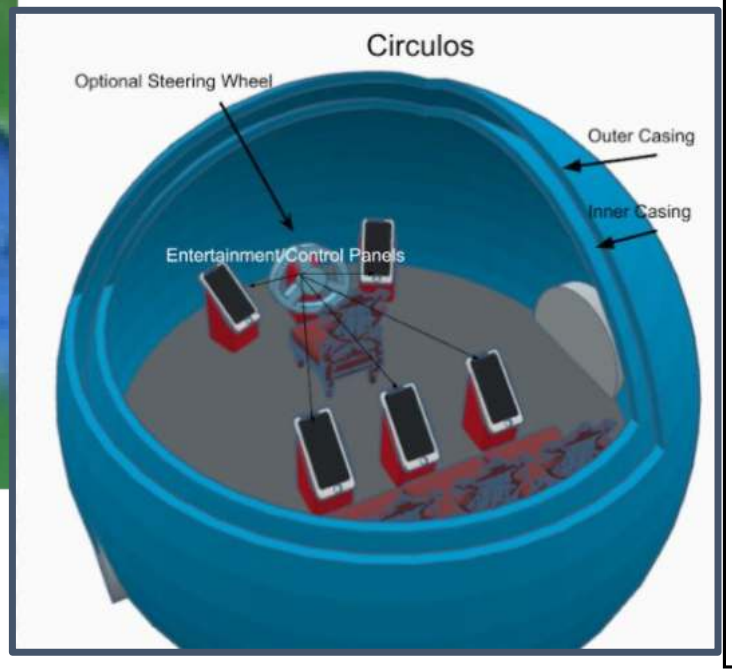
What type(s) of infrastructure are shown here (water, power, utilities, etc.)?:

Power Utilities

How are these related to the realities/challenges of a Waste-Free City?:

Our river run turbines use the natural water flow to generate electricity that goes to our Supergrid. Easier and less costly to build, the turbines blend into the environment and produce over one terawatt of energy, more than a comparable nuclear power plant. The Susquehanna has the necessary constant flow rate and slope to generate electricity effectively. Fish ladders help fish move through the system without being harmed or having their migration routes interrupted in any way.

Transportation Circulos



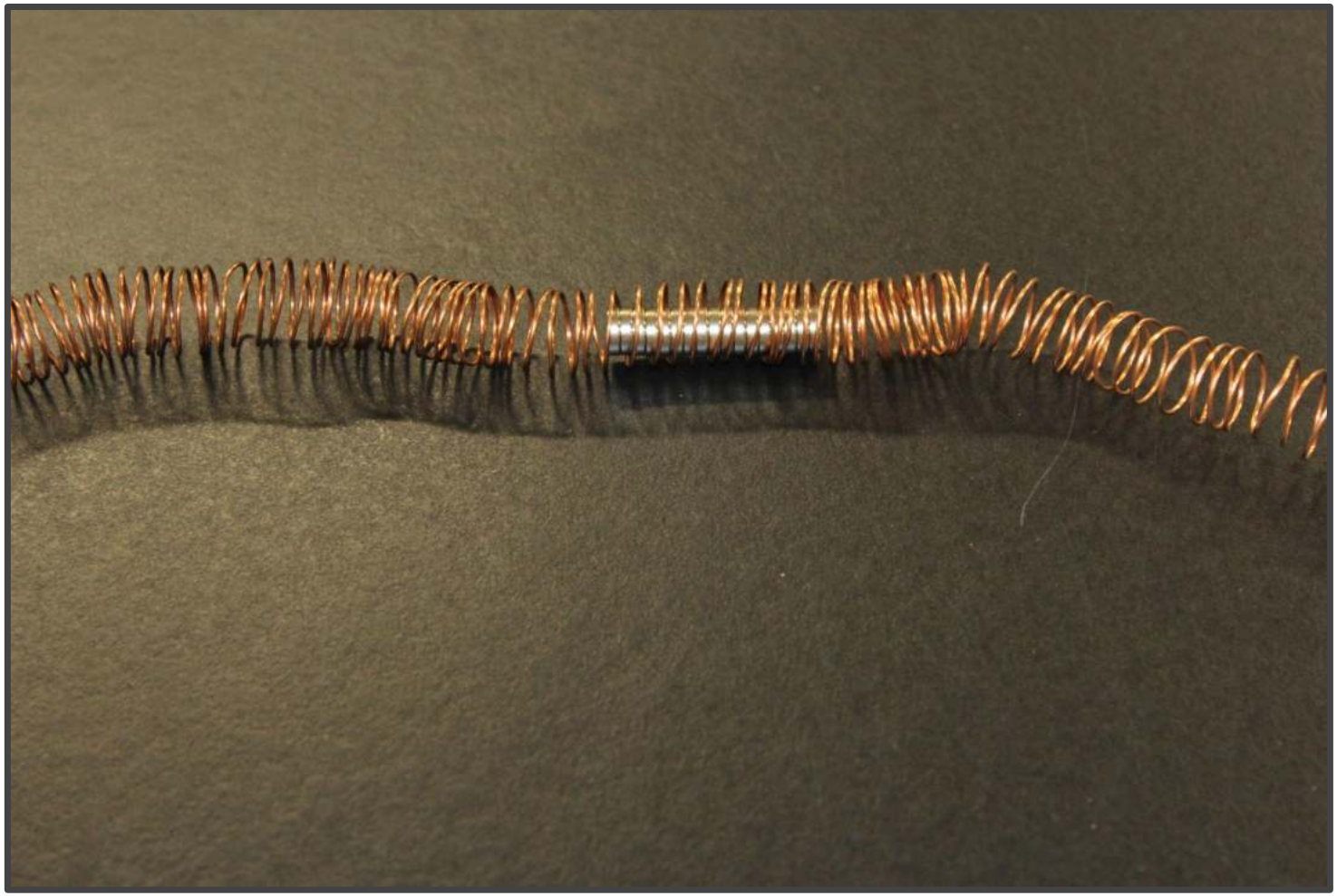
What type(s) of transportation systems are shown here?:

Hovercraft (Transportation Circulos)

What do you want the judges to know about your transportation system(s)?:

Residents enjoy our walkable urbanism, but also use circulos, vehicles that hover 10 feet above a path of neodymium magnets and harvested plastic. PET batteries, sustainable, rechargeable, and efficient batteries, are engineered from bay-harvested materials. The citizens that choose this method of transportation do not own the vehicle but lease it.

City Services Hyperloops



What type(s) of city services are shown here (health, education, etc.)?:

Transportation

What do you want the judges to know about your city's operations?:

City-run hyperloops transport residents long distances in passenger pods through pressurized tubes using electric propulsion and magnetic levitation. They are an eco-friendly mass transit alternative to our circulos and a net-zero way to travel farther. The propulsion, lack of air pressure, and levitation, allows the pod to reach very high speeds using little energy.

Transportation--Recycled Pathway via Walkable Urbanism

What type(s) of transportation systems are shown here?:

Walking

What do you want the judges to know about your transportation system(s)?:

Satori encourages citizens to utilize walking paths for health and waste reduction purposes. By recycling concrete, plastic from the ocean, and other materials used in sidewalks and paths, we can reduce virgin materials we would usually expend to make these items. This supports us in our goals of reducing waste and it also helps the ecosystem flourish.

City Services--Biji Bands

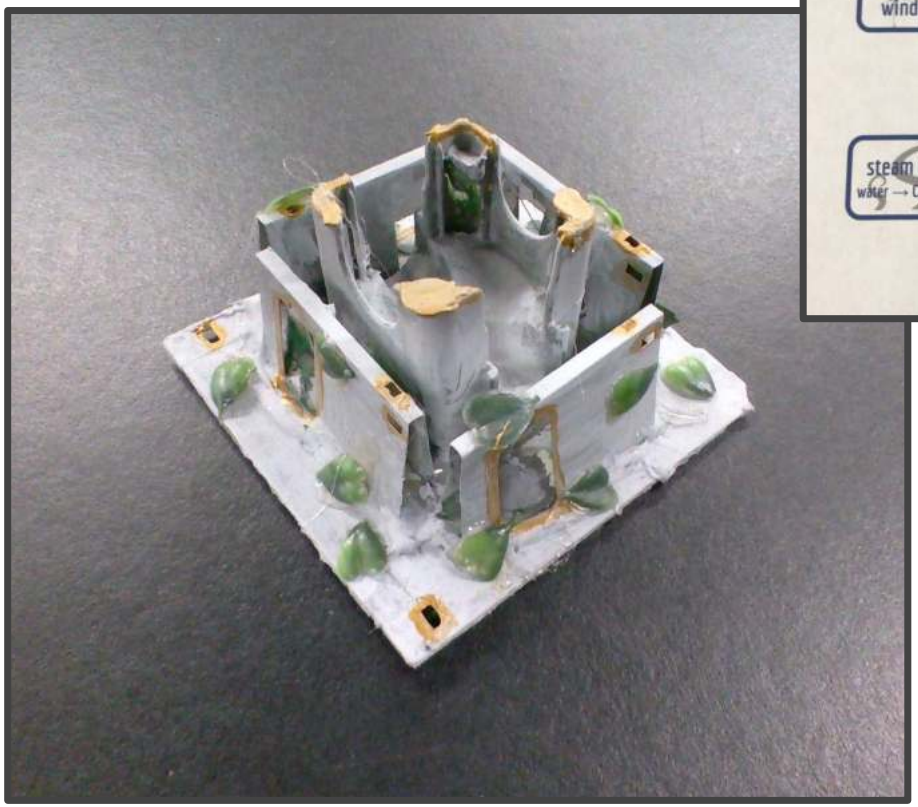
What type(s) of city services are shown here (health, education, etc.)?:

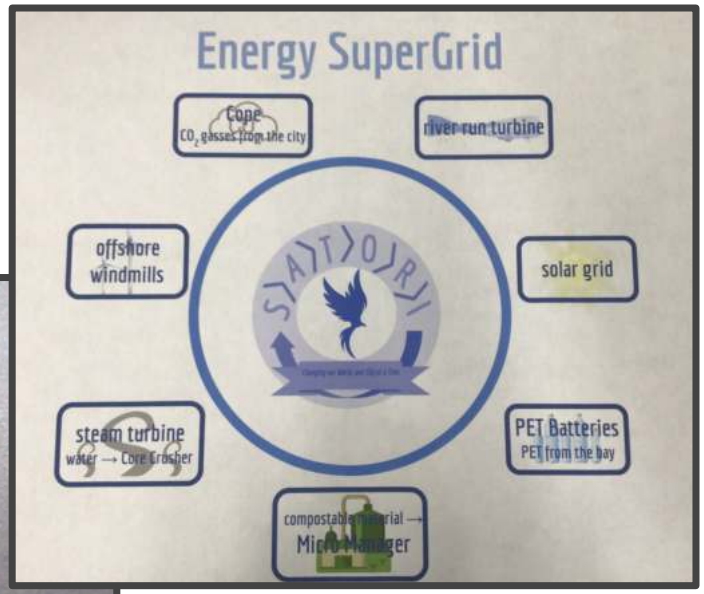
Health

What do you want the judges to know about your city's operations?:

Our state of the art healthcare system solves the problem of accessibility by giving every resident the healthcare they deserve right on their wrist. Biji is the ancient Algonquin word for health and our Biji-bands connect each resident to health information and guidance, dose medication, as well as provide a UV light to kill bacteria on food and our edible packaging, Bamblobs.

Principles of a Circular Economy in Action - Micromanager

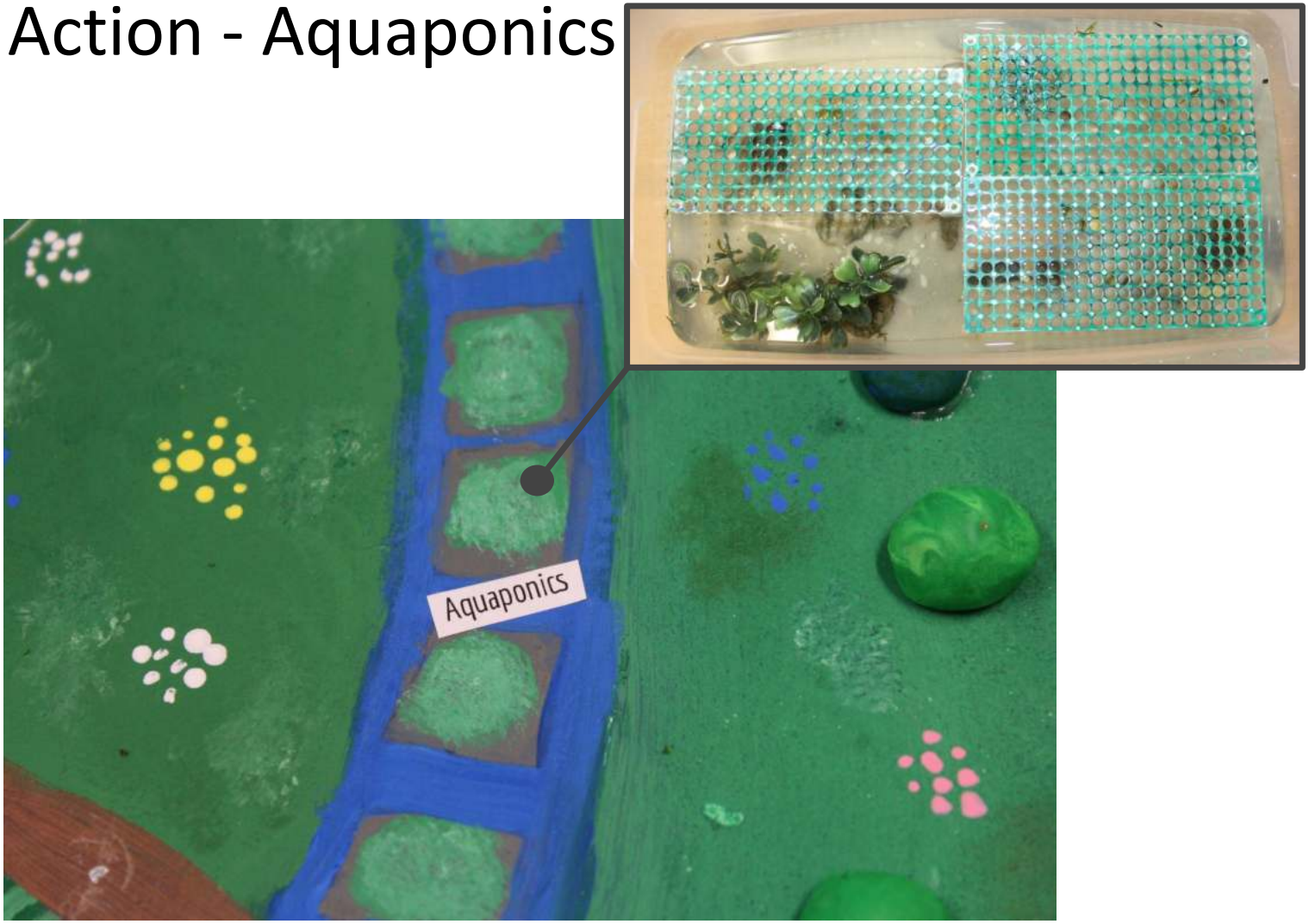




What is important for the judges to know about this element of your circular economy solution?:

The MicroManager uses biologically-engineered bacteria in order to decompose wasted materials 75% more efficiently. These bacteria include varieties like *Ideonella sakaiensis* which can decompose plastic like PET from water bottles. One of our focuses upon founding was removing PET from the waterways and landfills. During the decomposing of the waste, the MicroManager captures waste energy and reuses it by sending it to the city's main power supplier, the SuperGrid.

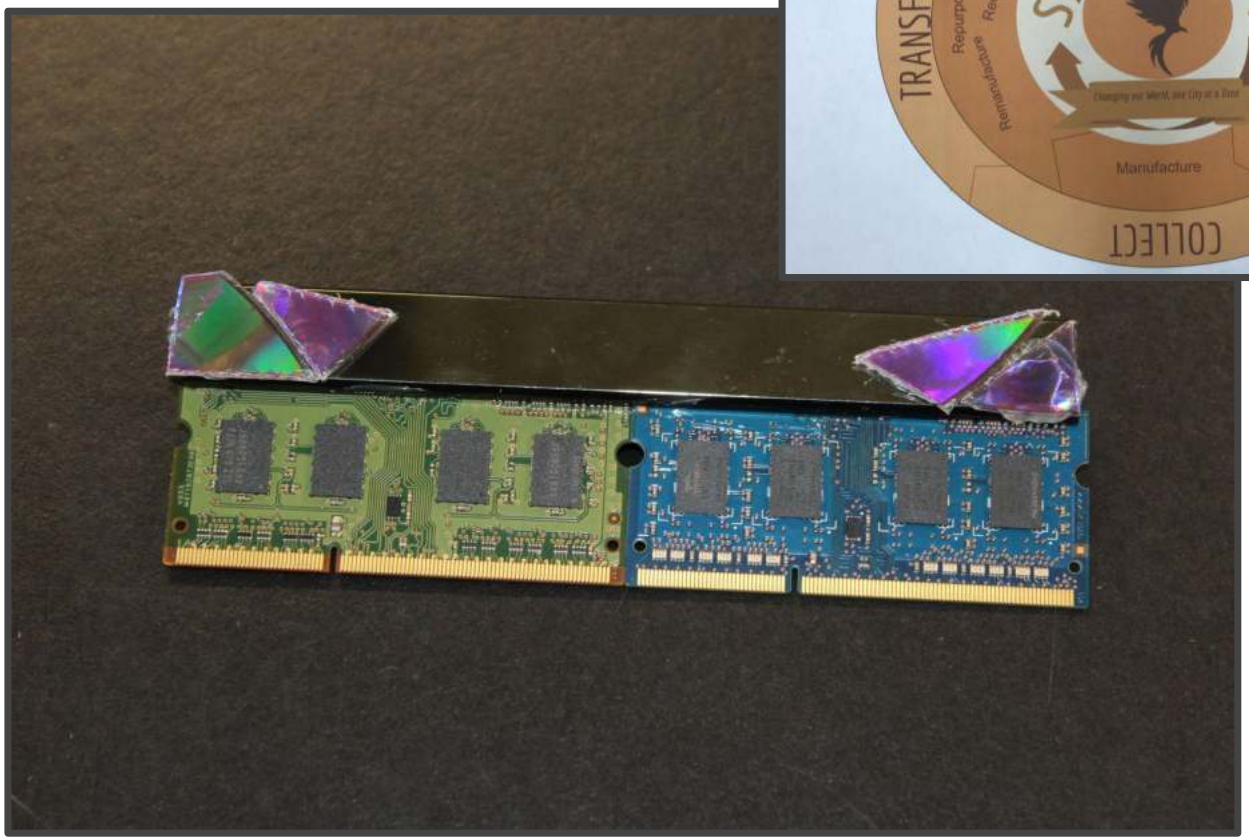
Principles of a Circular Economy in Action - Aquaponics



What is important for the judges to know about this element of your circular economy solution?:

Satori utilizes a dual river ring system for the growth of vegetation for food and construction materials. As a part of the city's dual river ring system, the interior river is for aquaponic farming, where the fish and plants create their own circular system. Co-production reduces waste while giving our citizens food variety. The outer river reuses greywater as a reservoir and a barrier to contain the spread of bamboo during its growth process. Using this system, it is more expensive, but we accept the trade-off of higher cost for lower waste and availability of local clean water.

Principles of a Circular Economy in Action - Restoroki



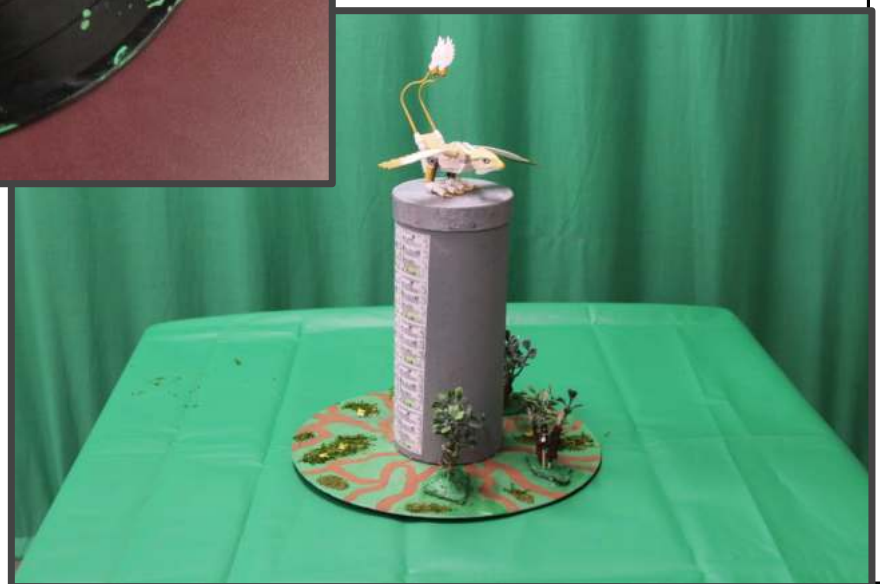
What is important for the judges to know about this element of your circular economy solution?:

Restoroki is a series of devices that when a part breaks, or becomes outdated, you order a new module, and you can open a back panel on any electrical device, unplug the old module, plug in the new module, and let the system adjust to the new component! You then return the old module to Restoroki Inc., and they will extract all the resources from it and use them to create more modules! It is easy, compatible with any device, and solves not only the problem of what we do when something breaks, but also the problem of how do we not create waste when upgrading technology.

Section II

BUILD IT: QUALITY, SCALE, AND MATERIALS

Innovative Material & Use Example 1: Record and Fidget Spinner



Choose a recycled or reused item and describe how you used it creatively in your model:

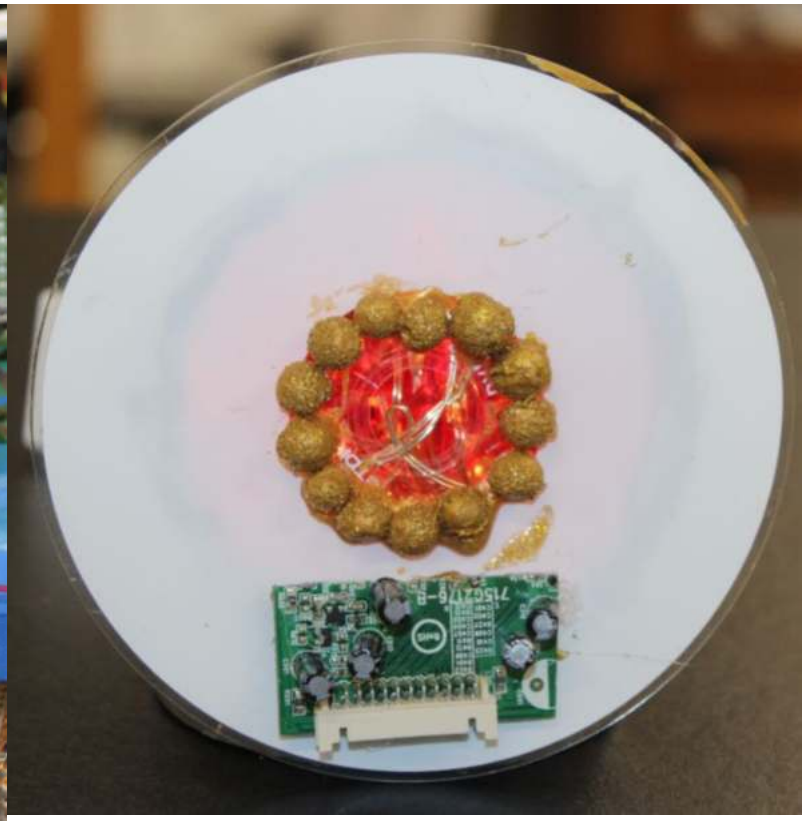
We reused a record album and a fidget spinner, both considered trash, to create the rotating center circle of the Pole. This gives the entire Pole the capability of spinning 360° and allows us to showcase two important aspects of our model. First, our buildings are very plain because they are created from fungal architecture and bamboo so they lack true architectural interest or beauty until our customizable Wabivision allows residents to program how they view them. Second, we can showcase how we have integrated our residential and commercial functions in the hub of our city, the Pole.

Innovative Material & Use Example 2: Insect Farm

Choose another recycled or reused item and describe how you used it creatively in your model:

We reused old CD's to create our insect farms. This model highlights one of the advantages of our innovative insect farm. We can use less space for farming by building vertically, but insect farms fit our waste-free goals. Grasshoppers typically contain between 14 and 28 grams of protein. Raising insects produces up to 80 times less methane gas than does the raising of cattle. Most of the insect is eaten but the small amount of waste can be reused in making products like shoes or make it into the MicroManager to generate energy.

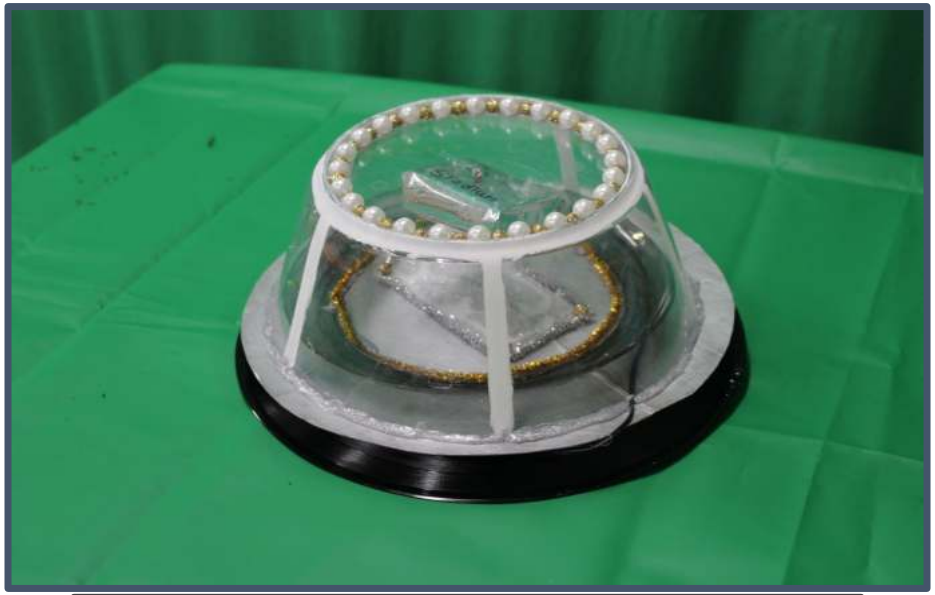
Innovative Material & Use: CORE CRUSHER



Choose another recycled or reused item and describe how you used it creatively in your model:

We used recycled masking tape rolls, a CD, reused Christmas lights, and a piece from the motherboard of an old computer to create our CoreCrusher. In our city, in the spirit of "using everything we take," we repurposed old local quarries to house our energy SuperGrid which connects all of our renewable energy sources and the Core Crusher below ground. The Core Crusher uses rainwater and other sources of run-off to flow through tunnels deep in the Earth. Because of the extreme heat, the water is quickly converted to steam, which comes back up, spins a turbine, and helps to power Satori. Capturing rainwater reversed the erosion that threatened 70% of our shoreline.

Example of Scale



Scale used in model (e.g., 1”= 10’, or 1”=22’):
1 inch = 50 feet

Structure 1
What type of structure is this?: sporting stadium
What size is the structure on the model?: **7 inches tall, 11.5 inches wide**

What size would this structure be in real life?: **350 ft tall 575 ft wide**

Structure 2
What type of structure is this?: insect farm
What size is the structure on the model?:**8.5 inches tall, 6 inches wide**

What size would this structure be in real life?: **425 ft tall 300 ft wide**

Moving Part

- **Judges**: Watch and review the moving part video from this team in your Judge Dashboard.

Video Details:

- The video must be posted as to be publicly available for judges to access on either YouTube or Vimeo.
- Video cannot exceed 1 minute.
- Teams need to mention their city/team name in the video.
- Teams must show the moving part in action.
- In the video, share what role the part plays within the city and how your team built it.

Offshore Windmills in the Chesapeake Bay

Section III

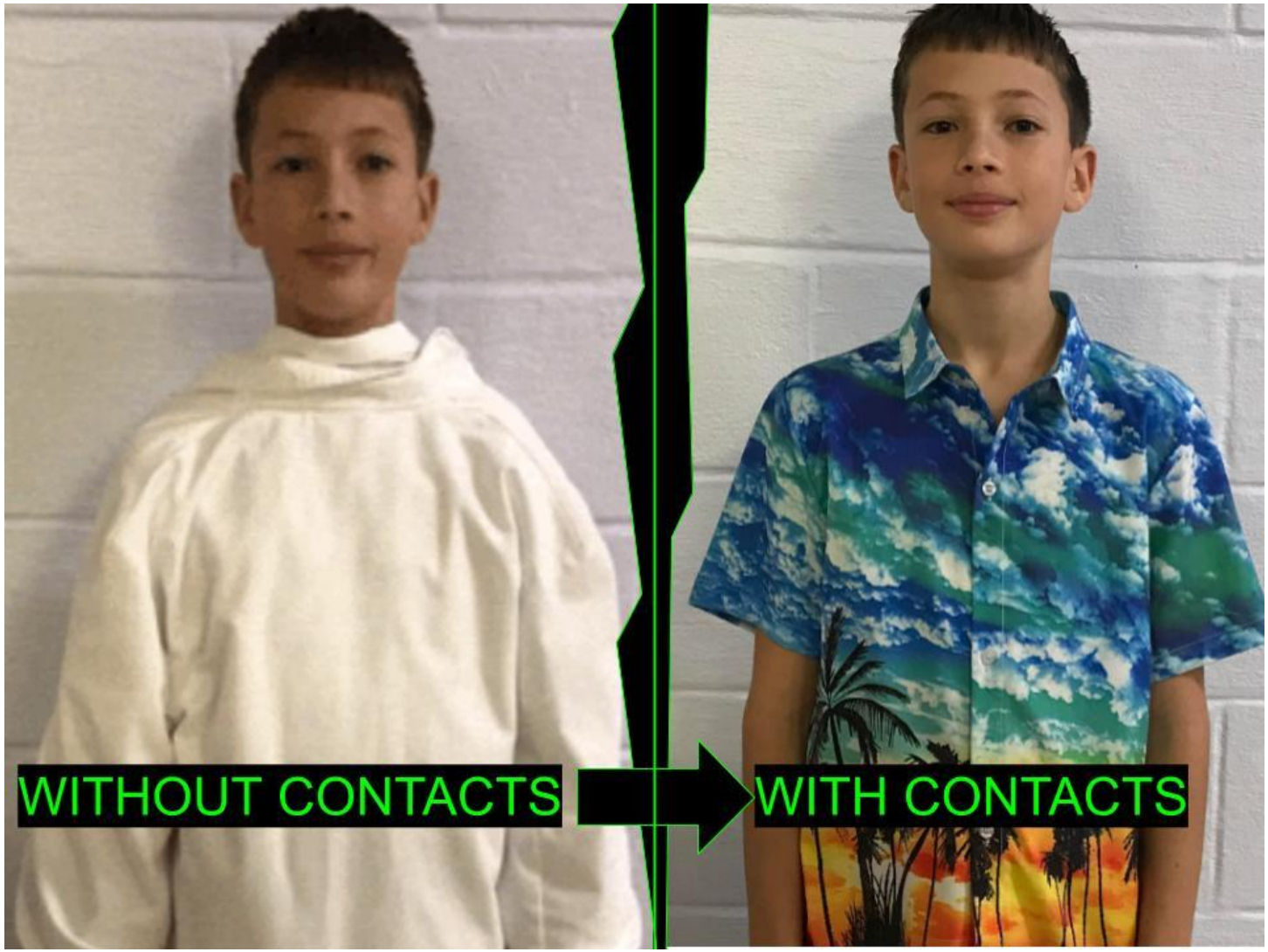
JUDGE ASSESSMENT OF MODEL

Futuristic Technology: Fungal Architecture/Bamboo

What is important for the judges to know about this example of technology?:

Bamboo forms the basis of many of our solutions for a circular economy. Our scientists bioengineered our bamboo to be exceedingly strong and fire resistant. Genetically modified bamboo and fungi work together to offer a rigid frame for construction. Bamboo grows at 40 mm per hour, much faster than fungi which grows at 1.5 mm per day. Quick-growing bamboo lowers costs and construction time as the fungal architecture consumes the bamboo as food to create a more permanent structure. Our innovative, biodegradable, and edible bamboo packaging, BamBlobs and BamWrap, eliminates waste.

Futuristic Technology : Wabi Vision



What is important for the judges to know about this example of technology?:

Wabi Vision are glasses or contacts that enhance your experience in Satori. They allow users to project images of how residents want others to see them. For example, people will utilize Wabi Vision to project different fashion statements in their clothing selection while utilizing the same basic textile material. This helps our society to reuse and reduce textile waste by reusing plain clothes and using the connected web of the Wabi Vision for daily clothing selection. This technology can also be utilized for buildings, parks, and other recreational areas.