



2020-2021 City Model Slideshow

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Deliverable Details

- 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.
- 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 Online Portal at FutureCity.org.

Section I
CITY DESIGN

Residential Zone



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

Our residential zones were designed to provide residents with the utmost comfort and access to several amenities. Commonly used facilities are within walking distance of homes to promote exercise. Transportation lines run between different clusters of homes and facilities for easy commute. Residential areas are also well separated from industrial zones for a more organized city layout and cleaner living areas.

Scale: 1 in = 15 ft

Commercial Zone



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

Terraluna's commercial zone encompasses several businesses that enhance the lives of our citizens. A cluster of commercial buildings such as the one shown here might include malls, banks, supermarkets, mixed stores, restaurants, recreational facilities, and office space that can be rented out by companies.

Transportation lines connect each building for easy access and efficient commute.

Scale: 1 in = 200 ft

Industrial Zone

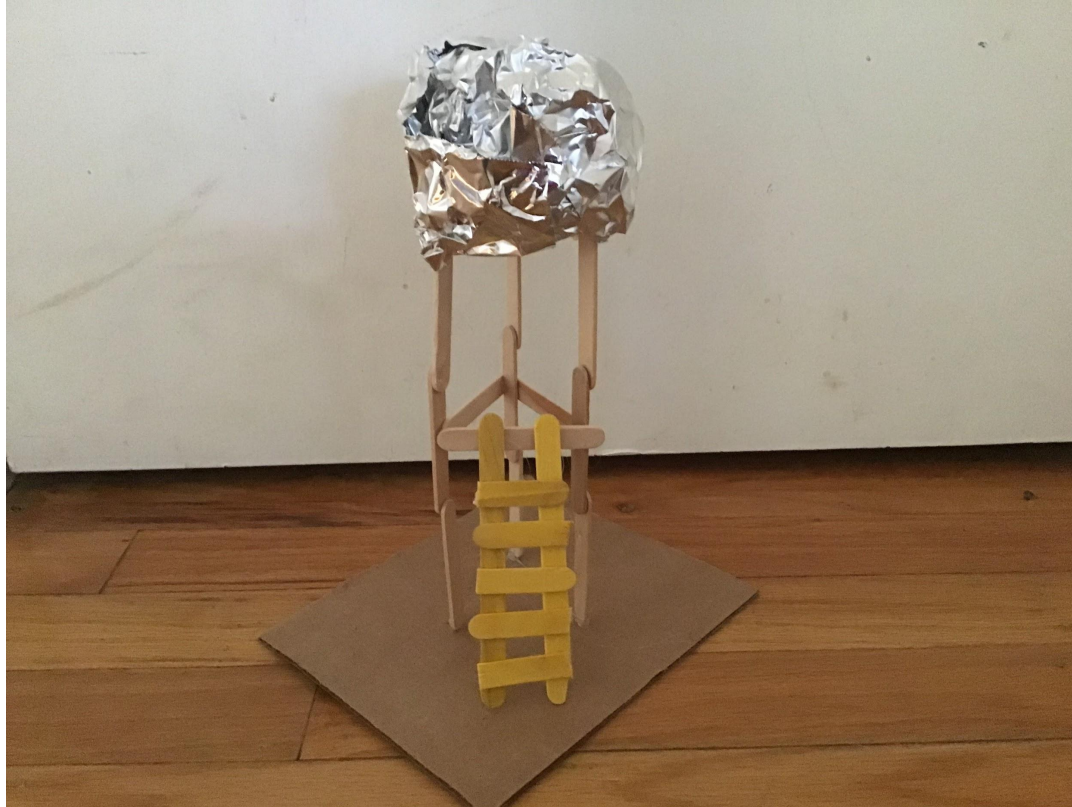


What is important for the judges to know about your industrial zone?:

Terraluna's industrial zone is secluded from residential and commercial zones for cleaner living environments. Factories take care to be especially eco-friendly as well, using and creating non-harmful products, and disposing of any waste properly. Manufacturing equipment is automated, bringing about more jobs in engineering and technology as opposed to factory labor. This model depicts a cluster of factories.

Scale: 1 in = 150 ft

Infrastructure Example 1



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

Water

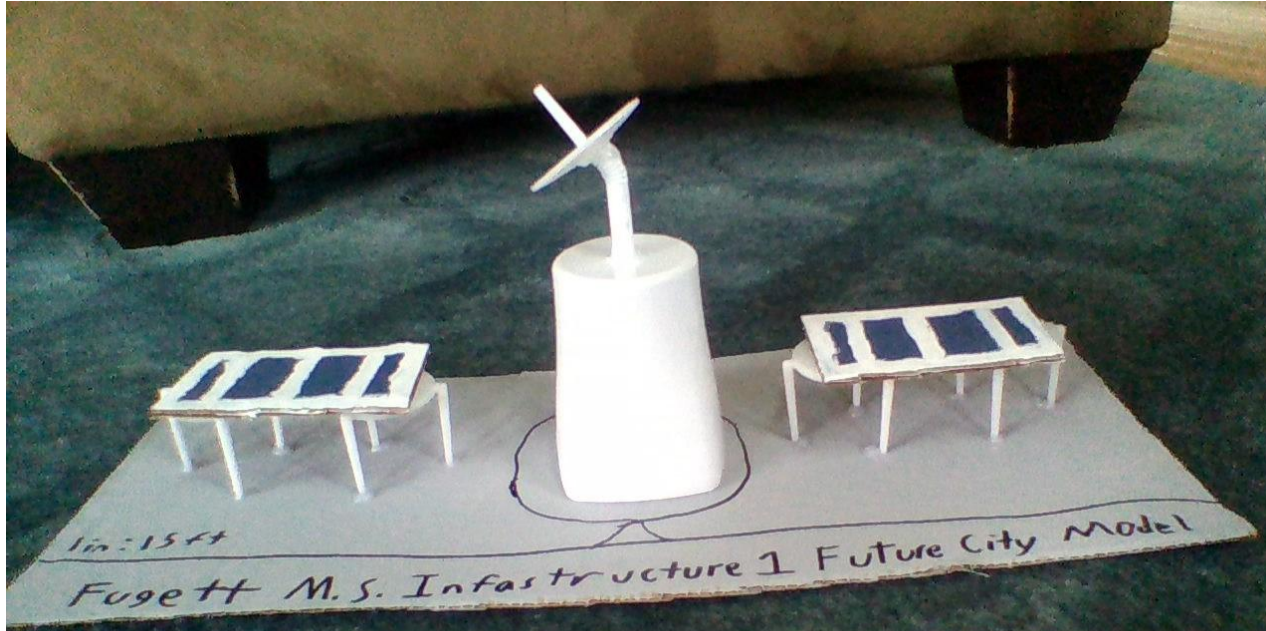
How are these related to the realities/challenges of living on the Moon?:

Terraluna obtains water via shipments from Earth and from reservoirs of ice located in craters near the city. With these limited options to obtain the essential resource, water is considered precious on Terraluna. All used water is recycled until it is potable using a four-phase purification process. It is then distributed to citizens via a system of pipes buried under the city in the regolith layer. The pipes are coated in a layer of lunarcrete (see lunar resources slides) to avoid abrasion.

This model shows a water tank used for storing purified water.

Scale: 1 in = 13 feet

Infrastructure Example 2



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

Power: solar panels

How are these related to the realities/challenges of living on the Moon?

A source of energy that is not abundant on Earth but is more ample on the moon is solar energy (solar panels depicted on left and right).

There is a satellite tower for communication powered by the solar panels depicted in the middle.

Scale: 1 in = 12 ft

City Services Example 1



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 healthcare system is designed to be simple for patients, efficient, and effective. With lunar conditions that human bodies are not accustomed to, there are special measures taken to ensure healthy and happy residents. For example, daily vitamin and mineral supplements are distributed to negate bone weakening and other side effects of low gravity.

Ambulances (red cans in picture shown) come to patients via IITP lines. Ambulances have artificial gravity inside.
Scale: 1 inch = 4 feet

City Services Example 2



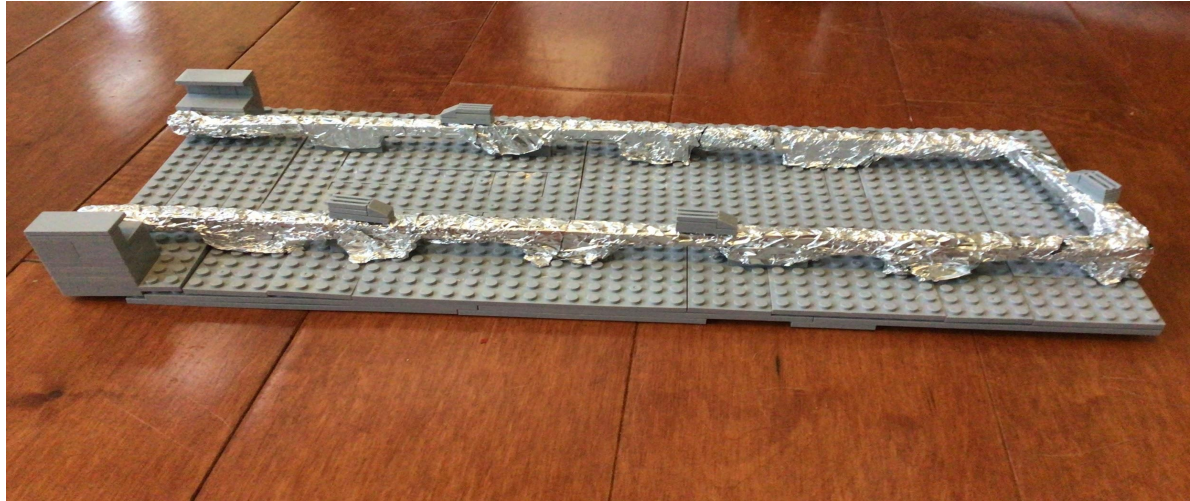
What type(s) of city services are shown here (health, education, etc.)?:

Schooling

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

Terraluna's education is designed to be accessible for all residents, and to increase literacy, numbercy, and graduation rates. To accomplish this, meals are provided at school for free, and the curriculum is constantly evolving to meet the modern world's needs. This model depicts one of Terraluna's universities.
Scale: 1 inch = 20 feet

Transportation Example 1



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

IITPs (Individualized Intelligent Transit Pods) and tracks

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

IITPs are the main system of transportation within Terraluna that utilizes lunar features to maximize their efficiency. Inside IITP lines, gravity and atmosphere is not fabricated, so the reduced resistance from air and gravity allows the pods to travel for quite a while on their own momentum without slowing down. IITP pods do not require constant acceleration. Instead, they are periodically given a speed boost, which saves a significant amount of energy.

Scale: 1 inch = 20 feet

Transportation Example 2

IITP Moving Part



What type(s) of transportation systems are shown here?:
IITP Individualized Intelligent Transit Pod

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

IITPs are used to transport people and goods between buildings, similar to a cross between today's cars and trains. This model depicts a small section of an IITP line and how a pod would move through one.
Scale: 1 in = 6 ft.

Living on the Moon (Resource #1)

Example 1



Identify the Moon resource shown here:

Lunarcrete / Regolith Extraction Site

What is important for the judges to know about this resource within your city?:

The top layer of the moon's surface is made of a fine lunar dust. Known as regolith, it is originally quite abrasive, but our chemical engineers have found a way to turn it into a useful resource. We use regolith to create lunarcrete, the moon's version of concrete.

The model shown is the complex where the regolith is mined and the dust is changed to lunarcrete, the most used building material on Terraluna.
Scale: 1 inch = 1760 feet

Living on the Moon (Resource #1)

Example 2



What is important for the judges to know about this element of your model?:

Regolith can be transformed into a durable material known as lunarcrete, easily used as bricks; the lunar dust is the aggregate, and when oxygen is added, it combines with the hydrogen already present in the regolith to create water, the solvent for the lunarcrete. The model shown is a building made of lunarcrete. Lunarcrete is also a great insulator and it shields well from harmful substances.

Scale: 1 inch = 60 feet

Living on the Moon (Resource #2)

Example 1



Identify the Moon resource shown here:

Lunarcrete examples throughout the city and shows a large regolith mining site on the lunar surface.

What is important for the judges to know about this resource within your city?:

Terraluna implements automated-mining-technology to mine regolith on a large scale. Regolith is the most abundant resource on the moon, and it contains approximately 1.1 million metric tons of the isotope helium-3. Because the moon has no atmosphere, helium-3 from the sun's radiation has accumulated on the lunar soil for millions of years, and it can be used to amass an extreme amount of energy.

Scale: 1 inch = 200 feet

Living on the Moon (Resource #2)

Example 2



What is important for the judges to know about this element of your model?:

Mined regolith is gathered, and through heat processing, pure Helium-3 is extracted. The isotope is then chemically bound with another Helium-3 atom, and with that, an electric current is created, eliminating the need for a traditional steam-powered generator. This process allows Terraluna to utilize almost 70% of the available energy for electricity, therefore increasing energy efficiency. Scale: 1 inch = 200 feet

Section II

BUILD IT: QUALITY, SCALE, AND MATERIALS

Innovative Material & Use Example 1

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

We used recyclable plastic containers that look like buildings to create factories for Terraluna's industrial zone. We also utilized plastic straws to act as model pipes.



Innovative Material & Use Example 2



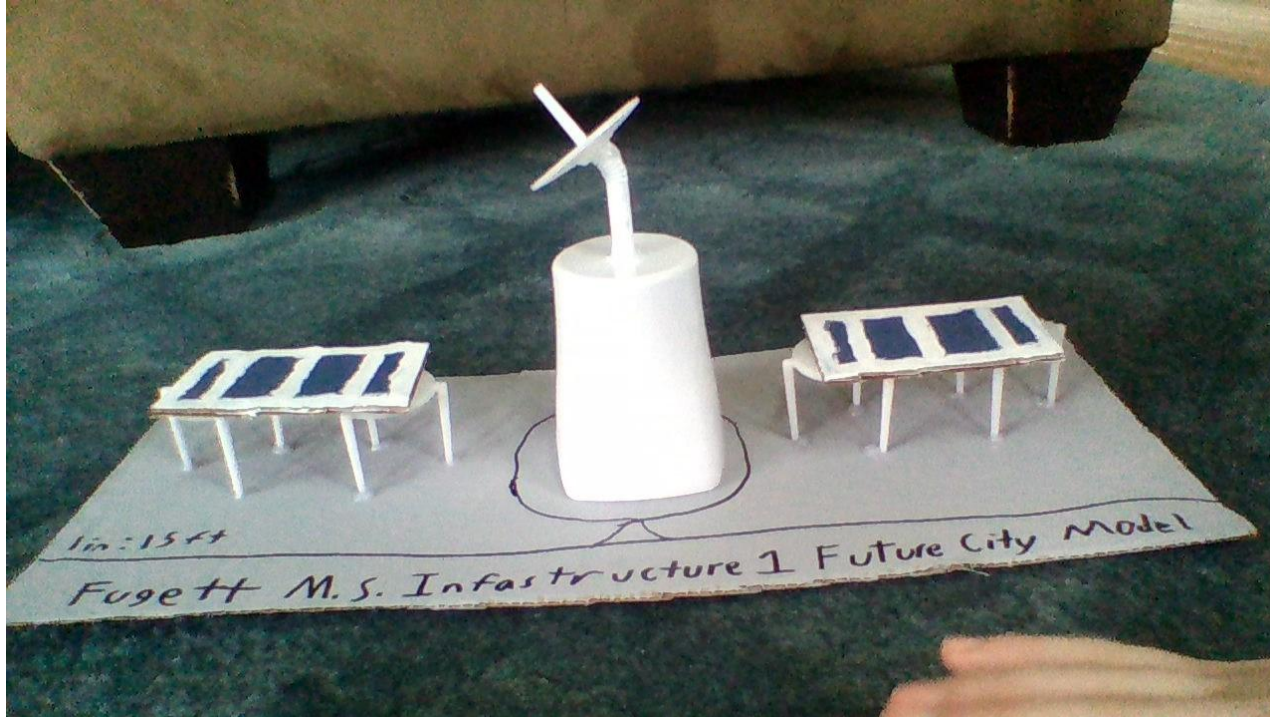
Choose another recycled or reused item and describe how you used it creatively in your model:

We used printer paper innovatively to make an origami school building. This allowed us to create the building shape that we were looking to achieve in an original and creative way.

Innovative Material & Use Example 3

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

We used pizza tables as a creative way to build the solar panel bases. The tables provided support for the panels and made the model look more realistic.



Example of Scale



Scale used in model (e.g., 1"= 10', or 1"=22')

1in = 4ft

Structure 1

What type of structure is this?:

Ambulance docking station (white box)

What size is the structure on the model?: 15 in (length) by 5.125 in (width) by 4.875 in (height)

What size would this structure be in real life?: 60 ft by 20.5 ft by 19.5 ft

Structure 2

What type of structure is this?:

Ambulance IITPs (red cans)

What size is the structure on the model?: 4.5 in (length) by 2.5 in (width) by 2.5 in (height)

What size would this structure be in real life?: 18 ft by 10 ft by 10 ft

Moving Part

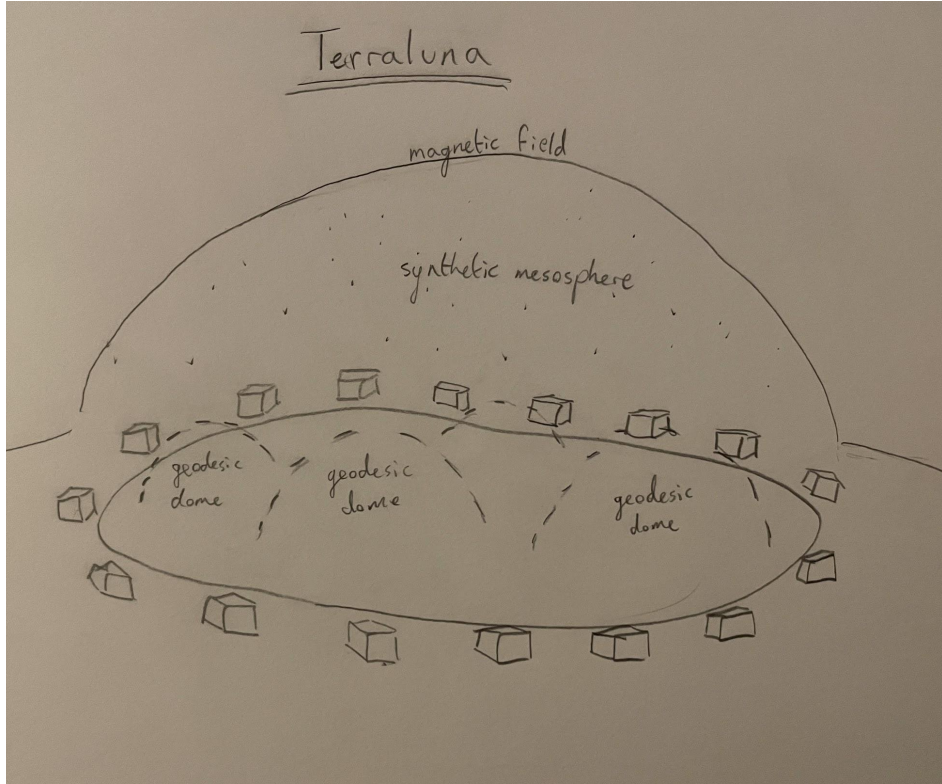
URL link to team's moving part video (needs to be downloaded):

<https://youtu.be/aqmiGzEZJRg>

Section III

JUDGE ASSESSMENT OF MODEL

Futuristic Technology Example 1



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

We implemented the use of a multi-phase defense system to protect Terraluna. The outermost layer is a magnetic forcefield mimicking Earth's that protects the city from the Sun's heat and radiation; this field is created by several devices lining the city that generate strong electric currents. The forcefield also holds in a synthetic version of Earth's mesosphere. The meteors that hit the moon pass through this layer they will either completely burn up or be reduced in size and speed. When larger meteors pass through, and do not disintegrate completely, they are reduced in size and speed before they hit a geodesic dome, reinforced with layers of kevlar, titanium, and aluminum. The domes, combined with the defence system, protect the city completely from all external forces.

Futuristic Technology Example 2



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

This model represents the automated regolith mining facility that Terraluna implements to collect and process lunar regolith. Through heat processing, helium-3 is extracted to be used as the main energy source of our city. The remaining regolith is gathered for the manufacturing of lunarcrete, the main resource used for construction in our city.