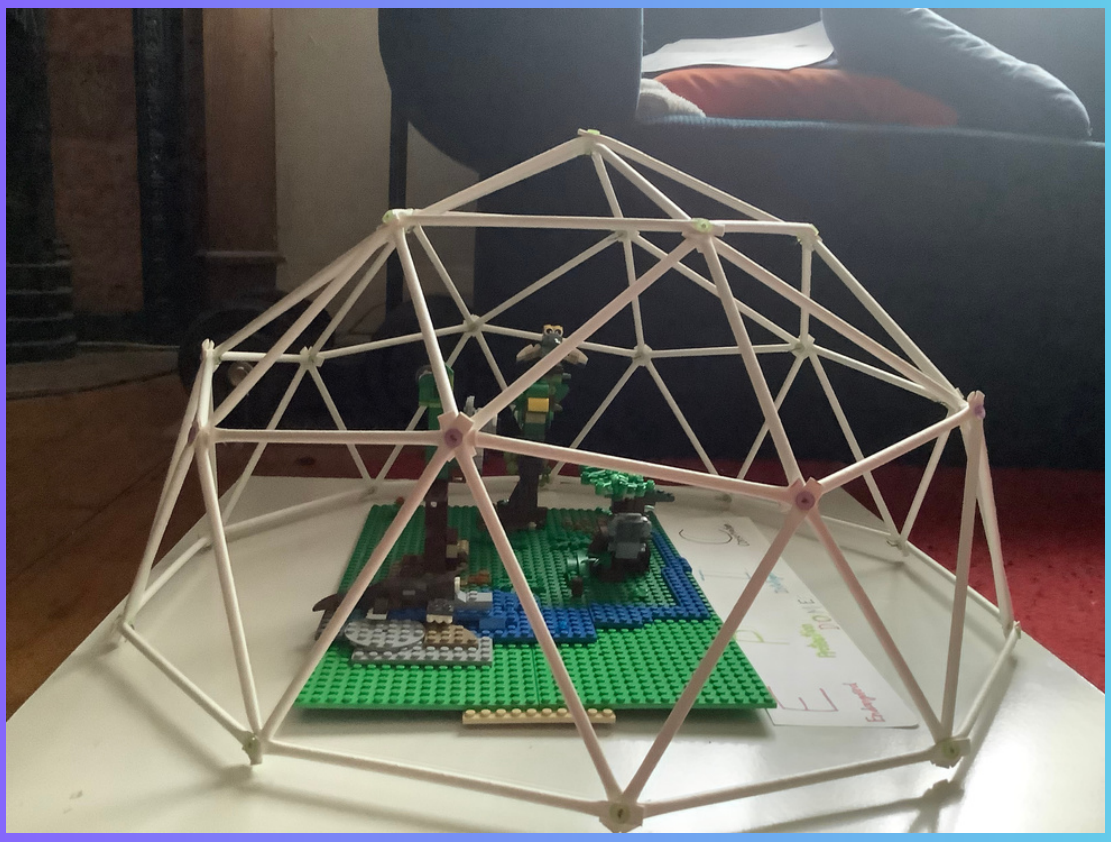
The EPIC Dome

Endangered

Protection

Intelligent

Conservation

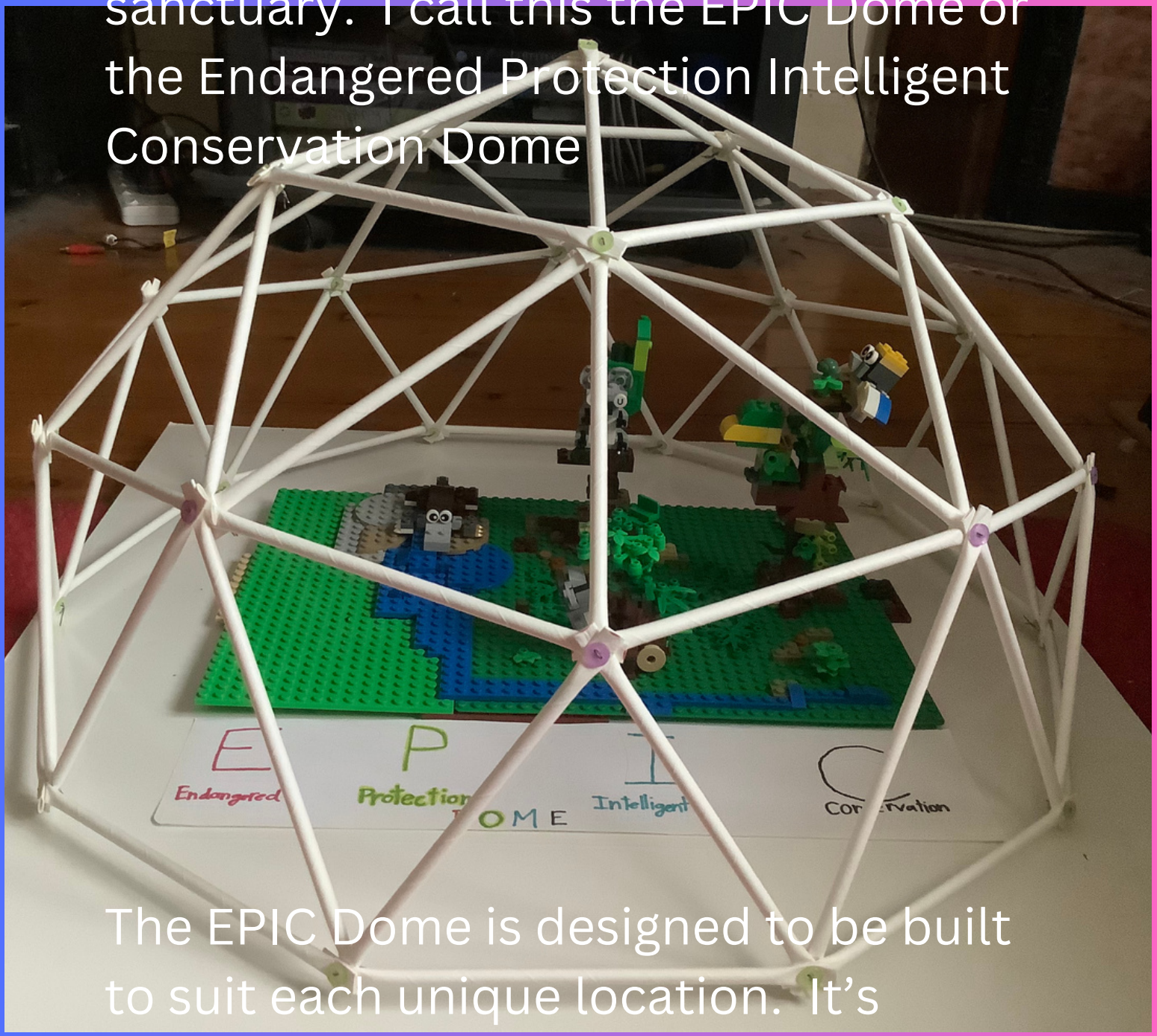


Problem

I have identified there is a need to protect wildlife in Australia Wildlife, including Koalas, Bilbies and Quokas are threatened by deforestation, climate change and bushfires. Some species of birds are also threatened by poaching

Solution

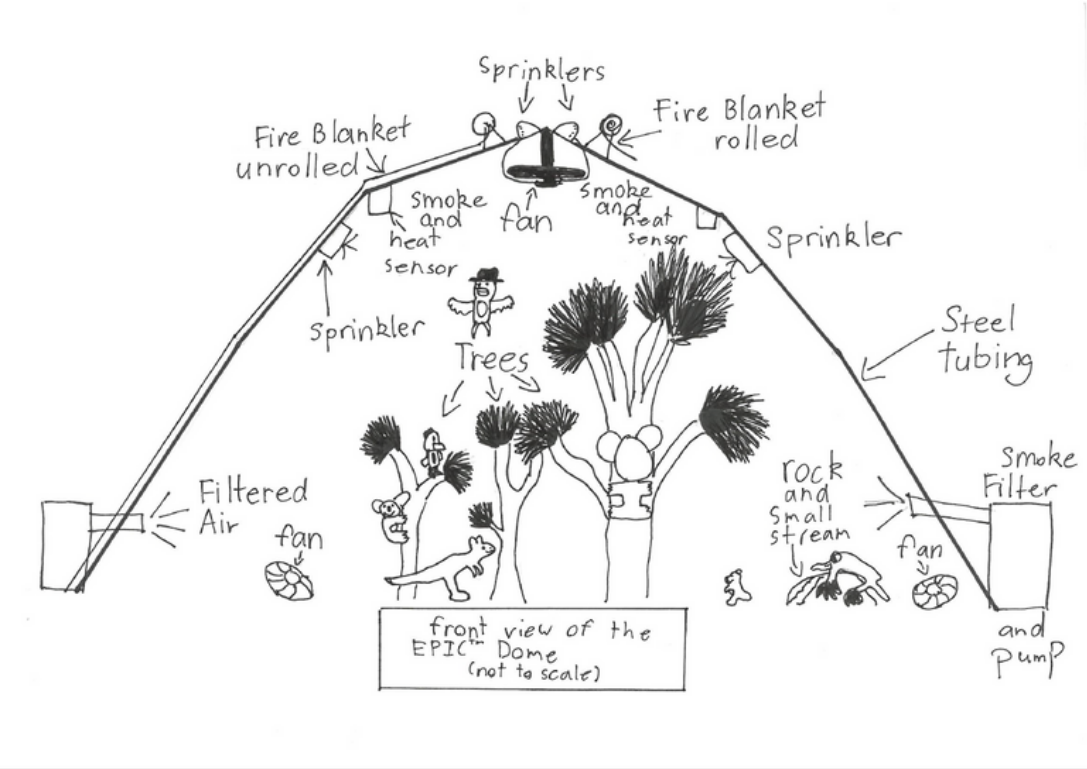
My solution is to protect endangered wildlife with an enclosed dome shaped sanctuary. I call this the EPIC Dome or the Endangered Protection Intelligent Conservation Dome



The EPIC Dome is designed to be built to suit each unique location. It's components are designed to be small enough to be transported to most places.

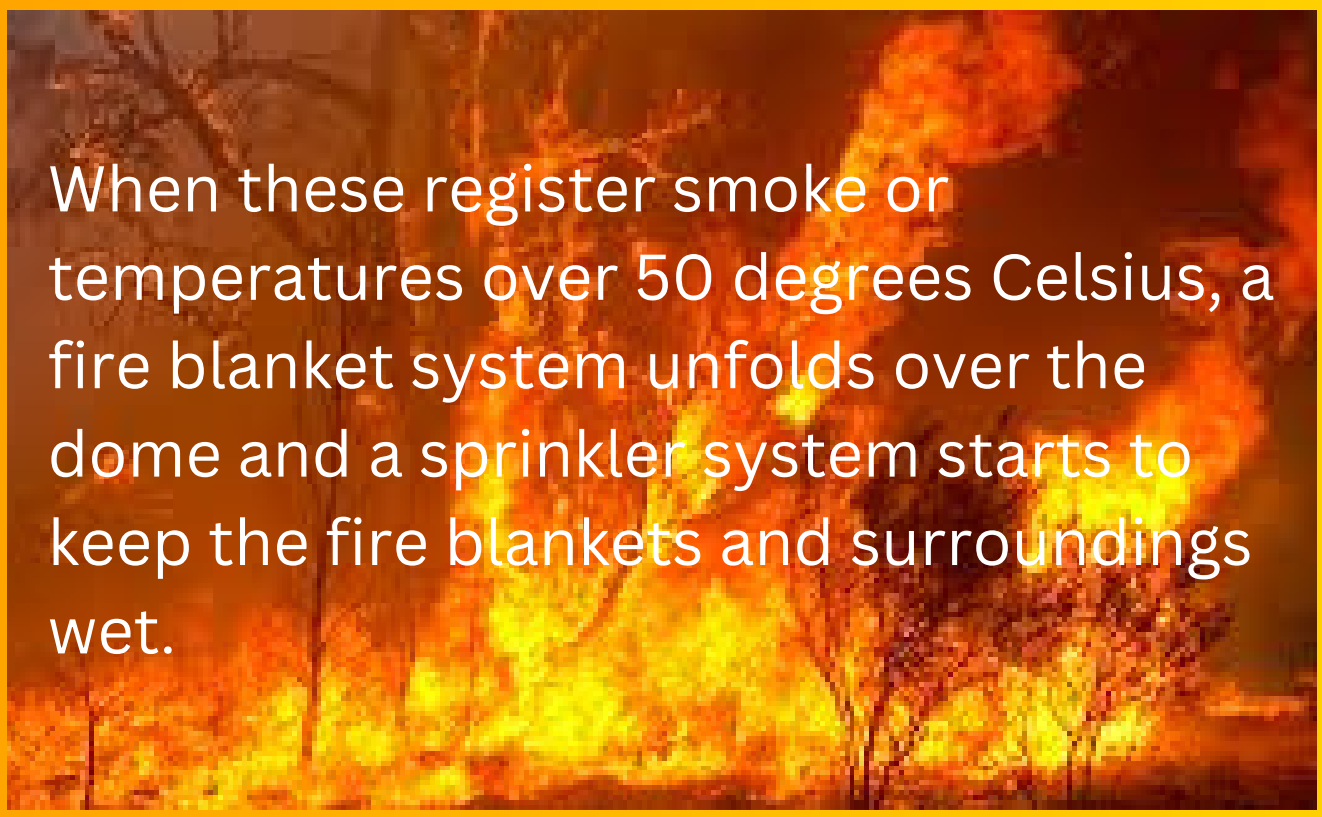
Description

The EPIC Dome is a Geodesic Dome made from steel tubing. The steel tubing is cut to the size needed for the location, however if the size is too long for transportation, the components can be made from smaller sections joined on site.



On the inside the EPIC Dome is covered in chain wire mesh to enclose the animals. Birds are free to fly in and out of the EPIC Dome through the top and other sections with no mesh.

Any bush structure in Australia has to be able to withstand bushfires. Here's how the EPIC Dome does just that : The dome has heat and smoke sensors around the perimeter.

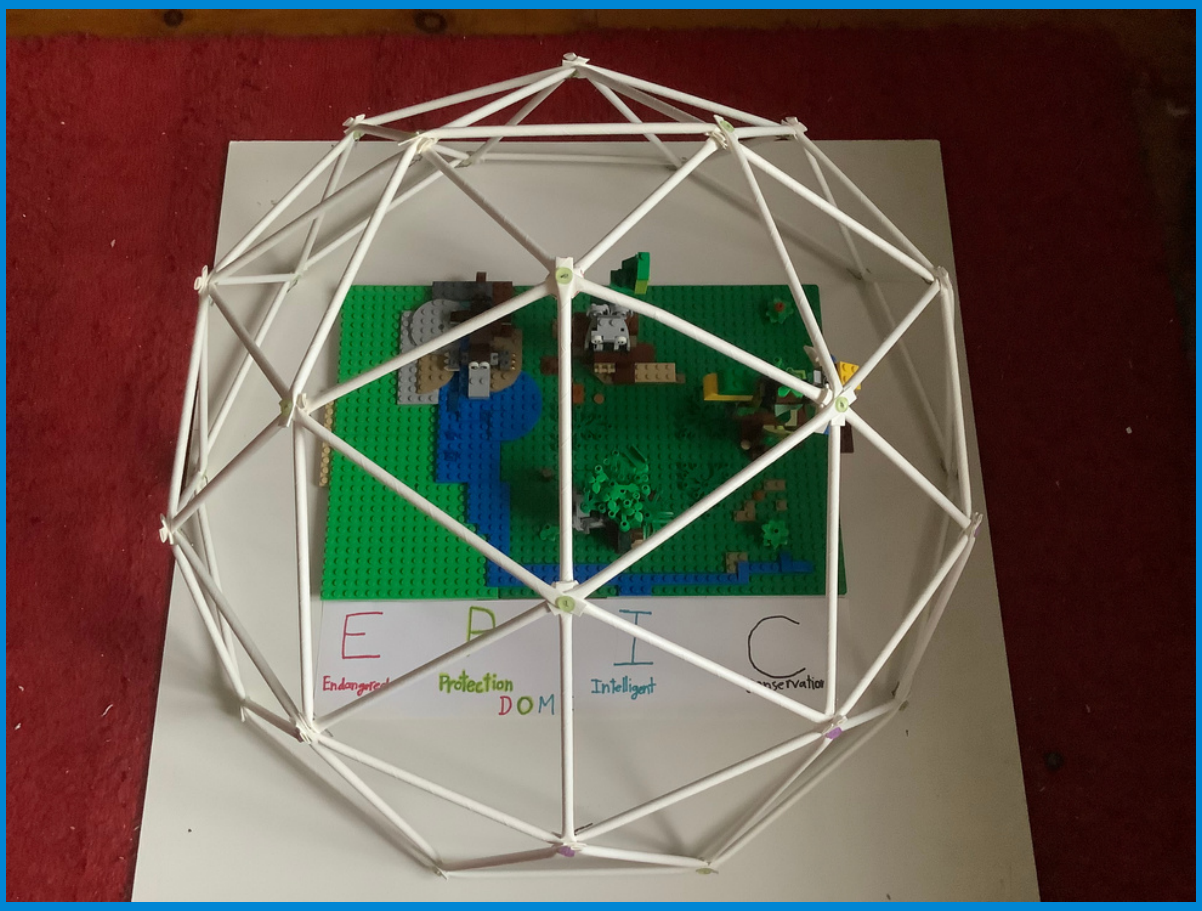


The smoke sensors trigger a ventilation system which filters smoke from the outside, acting as a giant gas mask. Any smoke inside the dome is drawn out with a fan system.

Design

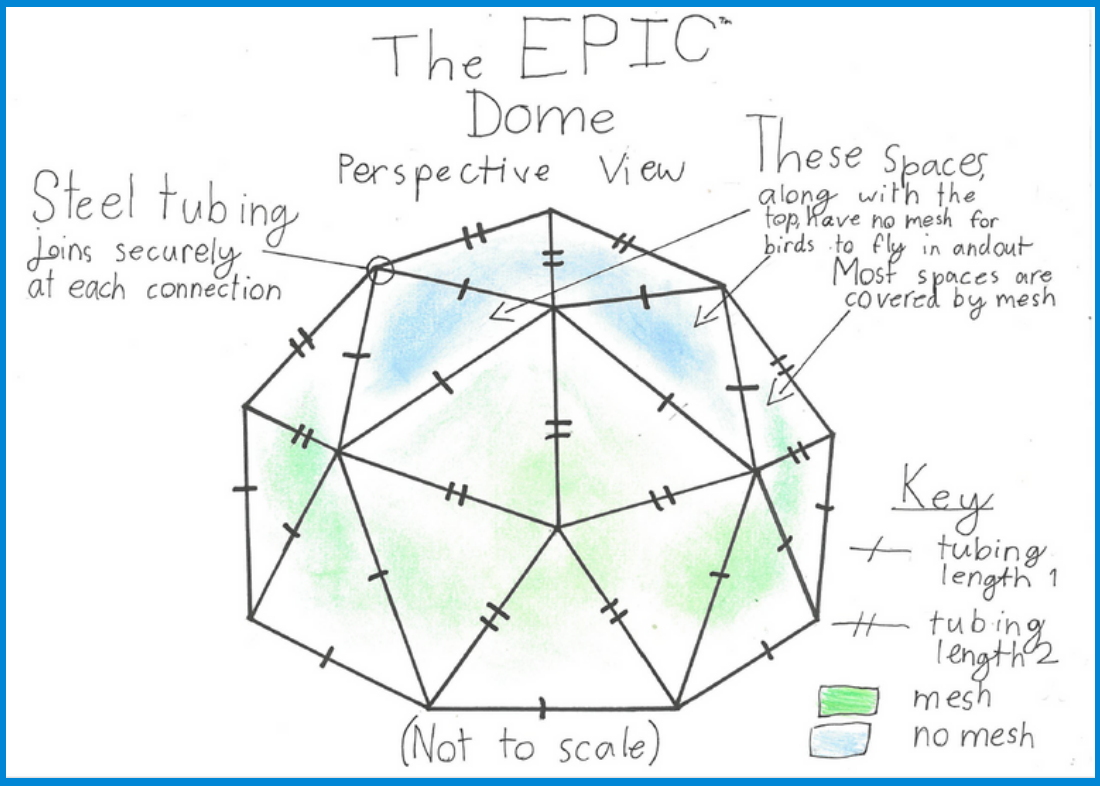
The design of the EPIC Dome was heavily inspired by Geodesic dome houses I saw on youtube.

It is made from isosceles and equilateral triangles formed into pentagons and hexagons.

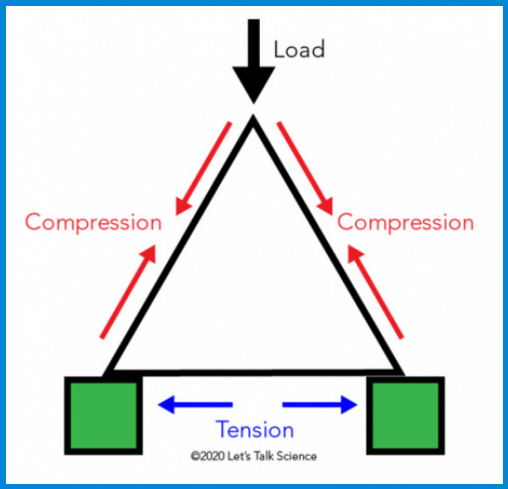


The sides are made from only two lengths - determined for the size of dome required for the location.

All you need to construct the dome are the steel tubes and connectors so it is very portable.



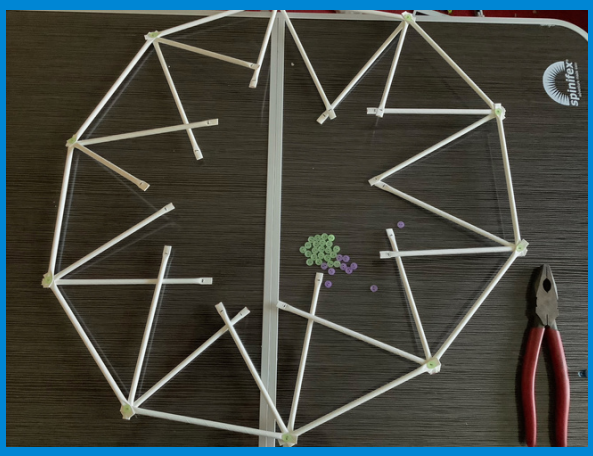
Steel tubing is light, however geodesic domes are strong as they use triangles.

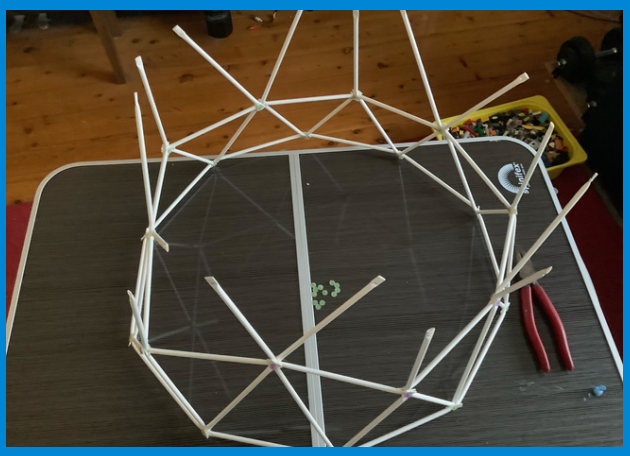


When a load is applied to a triangle, the sides go into compression (pushing) and the base into tension (pulling) which keeps it rigid.

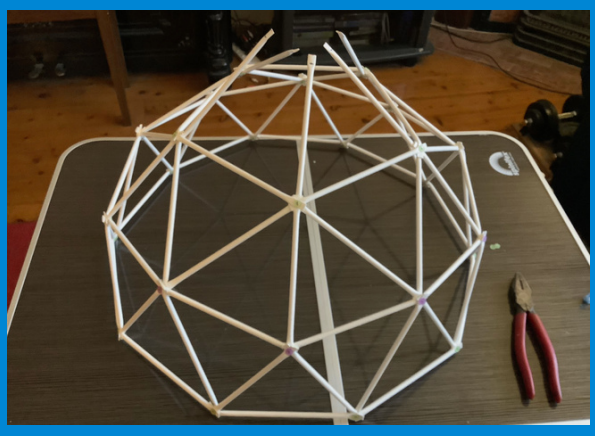
Construction

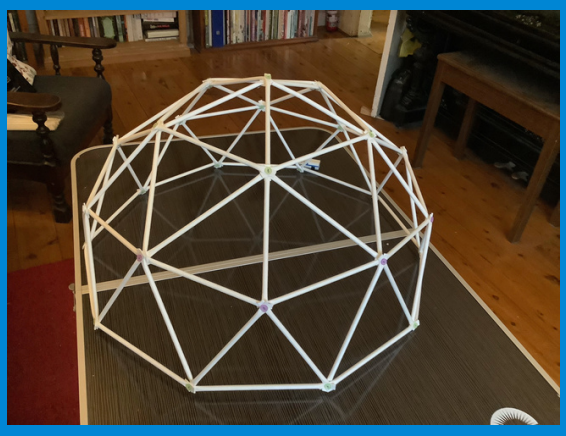
The construction is pretty simple. Once the materials are delivered to site, two small cranes are required. These lift the sides into position from the bottom up.





The construction of my Dome





Once the dome is finished, the mesh is attached, leaving some triangles without mesh for birds. After this, the fire blanket and fans are attached. Finally, the sensors, sprinkler systems and ventilation systems are installed and the EPIC Dome is ready to go !