

**Steel Appeal - How might we apply circular economy principles to increase and encourage the reuse of steel from decommissioned oil platforms to reduce carbon footprint, retain material value and stimulate the local economy?**



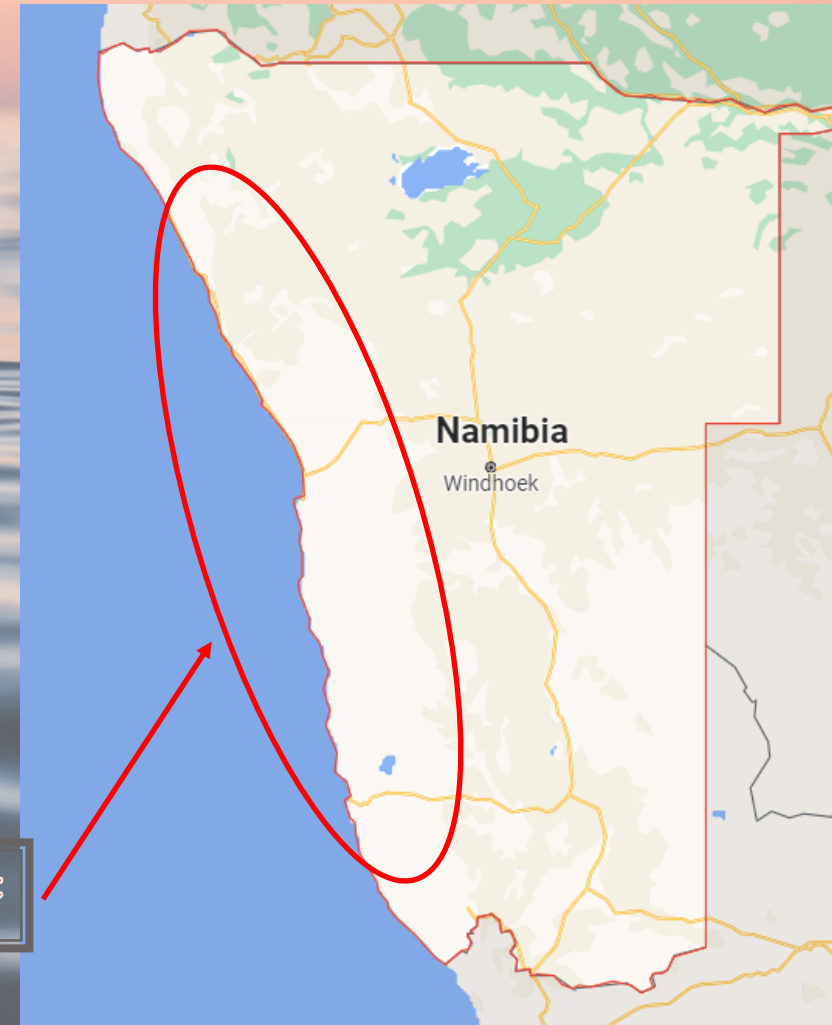
# My Solution

**I have created a small sustainable food and water source by harnessing energy from natural sources and sea water. The buildings required will be built in areas of poverty and food insecurity.**

**This system can be implemented anywhere that is costal and requires either livestock, crops or fresh water.**

**My chosen region is the Namib desert in Namibia. It has access to the Atlantic ocean on the western coast whilst also being in need of both food and water due to lack of rainfall and poverty within the region.**

**Chosen area for development**

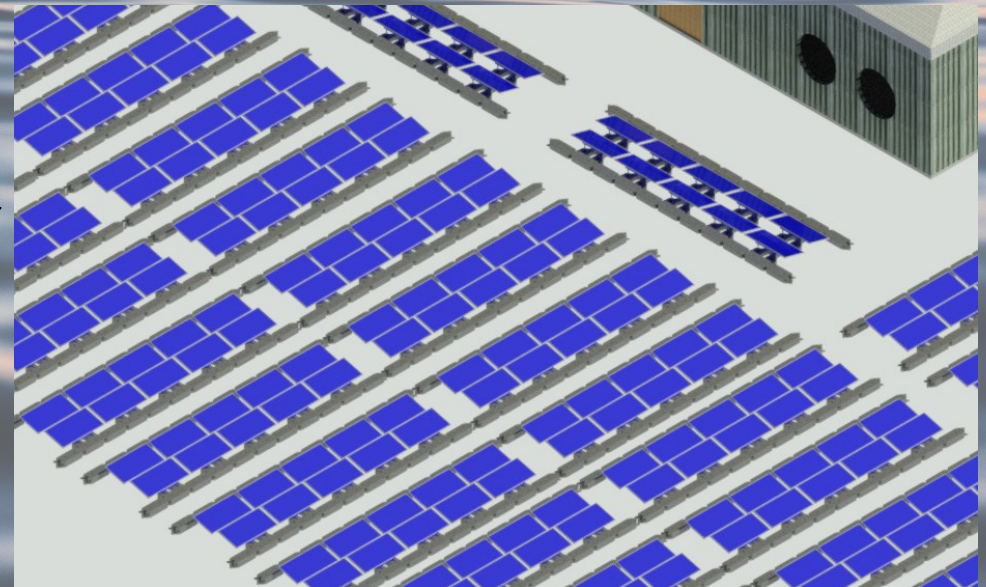


# Reducing Carbon Footprint

**A carbon footprint is the term given to how much carbon dioxide is released into the atmosphere by a given area or person. The larger the carbon footprint the more CO<sub>2</sub> is being released into the atmosphere and therefor the more damage is being done to the environment.**

**To minimise the carbon footprint of this project I plan to create a large area of solar panels within the compound. These solar panels will power all aspects of the site. Lighting, water heating and fan cooling will cause no damage to environment.**

**There is an average of 300 sunny days per year in Namibia making it one of the sunniest places on earth. This will allow a secure form of energy production via solar power.**



# Economy Stimulation

**This project would improve both quality of life within the area its built whilst also boosting the local economy by allowing food and water to be sold at a lower price.**

**By removing the supply issues for food and water the demand will become less urgent allowing for prices to decrease. This in turn ensures that people who previously did not have access to basic requirement of either food or water now have the possibility to eat and drink.**

**There are also employment opportunities created for people in the region. Farmers will be required to cultivate and grow crops that are required. Livestock farmers will also be required to tend to animals on the site.**

## Circular Economy



# **Temperature Control and Desalination**

**The process of turning salt water to fresh water via a heating and cooling process is called desalination.**

**As salt water is heated and begins to evaporate it leaves behind the salt that it contained.**

**My system works b salt water being heated causing it to evaporate. This vapour then rises and is collected in a pipe at the top of the water heating tanks. This water is then sent along the pipe to cool, condense and be stored as fresh water that can be used to irrigate the crops or be drank by livestock and people.**

**The temperature control system is called “a fan and a pad”.**

**A fan built into the walls of the units forces air our of the buildings. This creates a negative pressure within the building. On the opposite wall a damp corrugated cardboard wall allows some warm external air to be pulled through its wet layers. As the warm air passes through the cardboard it is cooled drastically and therefore creates a cheap sustainable air-conditioning alternative.**

**This cooling system will allow crops that do not like warmer temperatures to be grown.**

# Revit Model

**Using Revit I was able to model the whole site including cattle sheds, crop enclosures, pipe work, solar panels and water storage facilities.**

