I’m and Architect who bought land in Mexico in the middle of nowhere so I been working on sustainable architecture challenge for a year, the difference is you have better resources, people, artist, and money. Having your problem, I came up with a unique design of a self-sustainable house, the project picks up the surrounding to come to life. I propose a sustainable house which I call the Earth house because it has everything for living sustainable out of the grid, from roof to electricity, food and water. The material of the house is bamboo, wood and recycle automobile tires that are compacted and filled with earth, creating walls that are warm and cozy. It is a contemporary and organic design in the middle of the desert that has 32ft by 46ft and an area of 1,472ft2 on one floor. The house has two rooms, kitchen a living area, one bathroom an inside garden and the landscape garden with two garages with solar powers as the roof. It is a closed cycle house. That blends in harmony with the landscape because it is made of natural and recycle materials using the power of the sun and wind. It would need 30 solar panels to power the entire house, making 36 kwh each day, this means t.v, electric stove, refrigerator and lights all year.
The average U.S house uses 30kwh per day, so with 30 panels we are cover. The energy is store in batteries for the days with no sun or in the night.

You have water witch is a blessing, we will have a waterhole fountain in the garden like a geyser connected to a pump to feed the entire house with water. For the house we will need 750 gallons of water that will be store in 3 thanks of 250 gallons each, cover with earth. The average U.S house uses 260 gallons of water per day, so we will be more than cover. The Earth house has a sustainable use of water by recycling it; so first you use the water to wash, then for the indoor plants, then to flush the toilet and finishing in the landscape garden. To be able to do this, every time we wash something or flush the toilet we create wastewater. Wastewater from sinks, bath, shower, kitchen and washing machines is called grey water. Grey water is recycled in to an indoor robber botanic cell, that it is a build soil ecosystem that consist of varies soil layers. The first layer is composed of gravel that allows water to flow and provide good oxygenation preventing nasty smells, on top of the botanic cell we have indoor plants that will absorb the water with their roots, while the water on the bottom will flow to a filter house chemical, eliminating heavy metals. At the end of the botanic cell there is a water pump that will pump the water in to the toilets. When the toilet is flush water has now organic materials; this water is called black water. When it is flush, black water goes to a septic tank of 1,200 gallons where the water is separates solid from liquids using anaerobic digestion by bacteria to treat the black water. After the septic thank the treated water is channel to an exterior botanic cell, where the water will be absorbed by the landscape garden.
Each house will grow its own food to be self-sufficient, because there is water under earth we can actually make the desert green. So we are having two gardens an indoor garden that will grow food year around like lettuce, tomatoes, potatoes, spinach and strawberries. And the landscape garden that will be divided in fruits like lemons, bananas, oranges. Vegetables like garlic, zucchini, carrots and corn. Wood trees, flowers and animals like chickens for the eggs and some cows for the milk. A close sustainable cycle. The idea is to grow its own food and have an extra to sell. The outside garden and the inside garden will absorb the recycle water so every time you flush or wash something the plants will get irrigated automatic.

Plus, the kitchen will have a compost that will be use for the earth of the gardens, creating almost no waste only the trash will be your waste the idea is to separate them in plastic and trash so the house will have almost 0 waste.
Inside we will create a micro climate because hot air goes up, we will have windows on the roof; that can be open, letting the hot air out in summer or closed for the winter to keep the house warm and cozy all year with no air condition system. A micro climate.
The Earth house will need maintenance like a normal house, like cleaning pipes, cleaning the house, sometimes changing light bulbs or pumps, changing pipelines or fuses and the solar system will need maintenance of the batteries and the panels, the idea is to make the house automatic. The house will need to be filled each day of water, this will be cover by the waterhole in the garden that will look like a geyser, bring art to the garden and feeding the chickens and cows of clean water, the waterhole will have a pump that will fill up the 3 tanks of 750 gallons when water is needed. The idea is to make better the place where the house will be and the making the surrounding green and abundant.
To be able to build this house I would need to develop more blueprints and a scale model but if I win, I can gladly do them for free. By having a sustainable project build I win and the Earth wins. My honorariums are just my viatics to supervise the building of the Earth house and the problems that appear by building a house. The earth house is meant to stay forever in the landscape creating almost 0 waste and making the surrounding green and rich, the earth House is like an oasis in the middle of the desert, why? Because it is possible.
So there are two ways to make profit of this design, by renting the house or the rooms like a hotel, (you sell the experience of staying in the desert), selling houses and making profit (making a sustainable community that trades their food with the neighbors). Or you can sell the organic food, for the festivals. Who knows maybe in the future you can open a restaurant with organic food in the desert.

So the design of the earth house covers up shelter, food, water, electricity and money with one design, that is why is called the Earth House its comfortable and functional in an ecological way.
To be ecological we are using recycle materials in the building of the house and the materials that are not recycle must be from a close source so they have less footprints and be more friendly with the environment. The idea is to have a Leed House, by having comfort in one contemporary design in the desert. The cost of the house is around $150,000USD. It is an estimate because I need more blue prints to know for sure the real price of the house. To be able to do that I would need to win so I can invest more time on the blueprints and the scale model, then have a realistic budget. To have a realistic budget I need better blueprints to know how many pieces of each material the house will need and call different providers to see which one has better price and do some research to see who is closer to the site to buy from.

To build the house we will need wood, bamboo, nails, screws, car tires, 30 solar panels, pipelines, glue, insulating materials, doors, electric wires, an internet antenna, water furniture (like sink, toilets). Plants, 3 water tanks, glass, windows, cables, water pumps, a waterhole, a septic tank of 1200 gallons. To dig (for cementation and the botanic cells), concrete (cement, sand, gravel and water), a plumber, an electric technician, builders, tools, a gardener and an Architect to work as a team.
Cause a home is more than shelter, The Earth House.