Black Rock Diamond

**Design Concept**

The Diamond of the Black Rock Desert will serve as a multi-purpose shelter and solar power generator. Constructed from crystalline silicon photovoltaic panels, it will produce all the energy required for its own operation, including but not limited to lighting and temperature control. Dipped on a south-facing angle, it will provide ample shade through the day and a comfortable space to gather for events, education, healing, or other activities serving the local community and visitors.

When a diamond in the rough winds up in human hands, the possibility of symbiotic creation arises. Harsh and unforgiving natural forces like heat and pressure exerted over millennia created the hardest known natural material – which we refine and put to use both practically and decoratively.

As a long-time participant of Burning Man, I wanted to offer a design that would support the principles and culture. The Black Rock Diamond would serve as a kind of “Center Camp” for Fly Ranch, offering a large canopy providing a shaded space for gathering, sharing, community, and events.

Based on a hexagonal prism with the bottom half seemingly disappearing into the earth, this gem will beckon all arrivals with a gleam. The hexagon is the strongest shape known. The overall structure is a sort of umbrella-roof approximately 4,280 square meters in size and standing up to 20 meters high. This creates an oasis that is self-contained, net-zero energy use, and an auditorium serving approximately 700 people. This shady space offers a place for grounding of body and mind, and a symbol of the merging of design and earth to bring beauty and meaning to the world.

The structure can serve a variety of uses in addition to its function as a solar power generator, depending on the needs of users. With a span of approximately 70 meters, it can accommodate stage-based presentations to an audience, formal or informal gatherings, temporary or permanent living quarters, artist studios, as well as other types of work space, storage, and more.

Hexagonal modular structures inside allow significant flexibility and privacy. These can be one-, two-, or three-story high buildings for living space, studios, storage, utilities, housing lithium batteries for electricity storage, etc. as needed. They might range from 200 to 1500 square meters. Natural soft light surrounds all structures and there are also skylights for direct light.

The proposed location is the middle of Fly Ranch but other options are possible, too.

Summary of benefits:

* Multi-purpose event center: auditorium, studios, dwellings, storage, etc.
* Solar power generation and net zero energy approach: 100% of surface area of the canopy are solar panels
* Distinctive building form
* Integration with open space to celebrate community engagement and humanity
* Small building footprint minimizes environmental impacts

**Technology & Supporting Systems**

Monocrystalline photovoltaic panels will offer the best option for efficient energy generation. A rough calculation of output follows:

Average annual solar radiation at Black Rock Desert: 1,825 kWh/m2

Solar panel area: 4,280 m2

Annual input energy: 7,811 Mwh

Solar panel energy conversion rate: 25%

Expected annual solar energy: 1,953 Mwh

A ballpark cost estimate is approximately $20 million for the canopy, PV panels, and interior modular structures.

**Environmental Impact Statement**

The design is intended to produce minimal environmental impact while generating enough electrical power to achieve net-zero energy use. Solar power generation produces no greenhouse gas emissions, air pollution, or water contamination. The modular design of the interior structures allows for maximum flexibility in configuration and usage. The materials used are all recyclable and/or renewable.