Optimized Photovoltaic Array
A solar panel array on one side of the vehicle will generate power for the workshop. By adjusting the angle (as degree tilt being the ideal angle for Nevada), and stationing the vehicle at the right position, the optimum conditions for maximizing solar gain can be easily achieved. As drawn, the panels can produce an estimated 10kw per hour. Additional solar panels can be added as power consumption requires.

Rainwater Harvesting
An on-board rainwater harvesting system collects water in a series of fabric funnels and stores it in collection barrels. This rainwater can be used for general washing and as needed in part of the thatch dying process. Gray water can be stored and later filtered at a dedicated site. As currently drawn, the system has the ability to store 60 gallons of water for every 1” of rainfall, and a 30 gallon storage capacity. Rainwater collection is optimized when the solar panels are in the stowed (vertical) position, and additional storage barrels can be added as required.

Battery Storage
Solar energy is efficiently stored in a battery pack for later use.

Mobile Workhorse
The hatchery is inspired by a Burning Man favorite: the art car. Drawing from this unique and contextual precedent, the flexibility afforded to a mobile workshop means that the hatchery can build locally at any project location in Fly Ranch. Additional carts afforded to a mobile workshop means that The Hatchery can build locally at any project location in Fly Ranch. Additional carts can be chained up as other needs arise. To maintain 100% carbon neutrality, the train of machines can be towed by a bio-fueled vehicle or another 100% sustainable fuel source.

Auxiliary Workshop
With storage for all required carpentry and construction tools, as well as a large adjustable work surface, the workshop becomes a center for skill-building and knowledge-sharing between makers and doers.

Waste Management
The on-board wood chipper turns waste offcuts from the CNC into sawdust that can be used for a wide variety of other useful purposes: such as insulation, mulch, animal bedding, heating, and fuel. Supporting The Hatchery’s environmental goals, the chipper is fully powered by bio-fuel.

Bioplastic Canopy
Made from materials that are natural and abundant, the canopy’s bioplastic skin is created without the use of petroleums typically found in commercialized plastics. The hardened skin is waterproof, while being biodegradable upon the end of its useful life.

Skin of Dyed Thatch
The distinctive exterior cladding is created using dyed thatch, forming a rain-screen roof made entirely from the abundant native grasses found at Fly Ranch. This technique draws inspiration from the indigenous technology of the region’s forefathers. The Paiute Tribe created “wickiup” shelters, built with thatched exteriors. The hatchery takes this technology one step further, with the aim of not attempting to copy or appropriate this cultural history; this project proposes to dye the grasses in sub-natural dyes and create a “skin” that draws from the colors, patterns, and texture of the landscape’s outstanding natural beauty.

Structural Modules
Using digital processes, the hatchery’s design-and-build system enables the on-site creation of unique modular buildings across Fly Ranch. The system can be adapted to create any shape and size structure imaginable facilitating construction initiatives across Fly Ranch.

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Sustainable Plywood
100% Certified FSC (Forest Stewardship Council) plywood is the primary material used in this proposal. Grown in sustainably managed forests, FSC plywood is sourced regionally and is free of hazardous and climate-changing chemicals.

Skinned Thatch
The distinctive exterior cladding is created using dyed thatch, forming a rain-screen roof made entirely from the grasses found at Fly Ranch. This technique draws inspiration from the indigenous technology of the region’s forefathers. The Paiute Tribe created “wickiup” shelters, built with thatched exteriors. The hatchery takes this technology one step further, with the aim of not attempting to copy or appropriate this cultural history; this project proposes to dye the grasses in sub-natural dyes and create a “skin” that draws from the colors, patterns, and texture of the landscape’s outstanding natural beauty.

Sustainable Plywood
Made from materials that are natural and abundant, the canopy’s bioplastic skin is created without the use of petroleums typically found in commercialized plastics. The hardened skin is waterproof, while being biodegradable upon the end of its useful life.

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