**INTRODUCTION : G-FLEX INSULATION YURT**

There are times in your life where you see or witness something and it becomes a part of your mind, your body & your soul.

Thus was the case at Burning Man in 2009 with my first interaction with a 6-sided, reflective-panel, single-chamber, pop-up shelter known as the hexayurt. Since that day, my imagination and mind have been obsessed with elevating the design, engineering & soul of a transportable, easy-to-assemble, climatized, re-usable, versatile shelter; the result is the G-Flex Insulation Yurt.

**TECHNOLOGY USED & NORTHERN NEVADA HISTORICAL CONTEXT**

In 1998 Burning Man moved to Black Rock City, Nevada; five years later the first Hexayurt was built on the playa. Now housing thousands of Burners each year, there is no structure more uniquely associated with Burning Man & its Northern Nevada roots than the hexayurt itself.

Like the traditional hexayurts, the G-Flex Insulation Yurts are manufactured with rigid insulation board, with UV protected bifilament tape on the seams. Unlike the traditional hexayurts, the G-Flex Insulation Yurts are durable, re-usable, expandable, modular and create zero onsite waste.

**PRIMARY MATERIALS & MAJOR DIMENSIONS**

The main materials used to ensure re-usability, zero onsite waste and a lasting structure are as follows :

* Rmax Thermasheath : 1 inch to 1.5 inch
* 26 Gauge Galvanized Steel Channels
* Aluminum Rivets
* Industrial Strength Adhesive Backed Loop tape (1.5 inch)
* 4 inch Hook Strips
* Bifiliment Tape
* Foil Tape
* ⅛ inch Wood Panels
* ⅛ in Wire Rope
* proprietary latch & lock systems on our windows and doors for safety & privacy
* a trenched, electrical system with a flip switch to carry electrical loads to lights & outlets

Major Dimensions are as follows:

* Shelter main-chamber dimensions are :
	+ Pentagonal or hexagonal footprint of 110 - 166 sf
	+ Wall Height of 5 feet to 6 feet with roof apex at 9ft - 12ft
* Bedding Add-on
	+ 40 sf per bedding add-on, attached to main chamber
* Travel Dimensions are :
	+ Rectangle at 5ft x 8ft x 1ft

**LIST OF ACTIVITIES, INPUTS & MAINTENANCE**

The G-Flex Insulation Yurt is a shelter that requires *zero* onsite inputs outside of man-power, a ladder & a long pole. Once a G-Flex yurt arrives on-site, a simple team of 2 people could assemble a shelter that can accommodate up to twenty people depending on the size and purpose of the shelter. A team of six people could assemble enough shelters to accommodate 100 overnight guests or 500 gathering people in less than 24 hours. All with *zero* onsite waste.

If air conditioning or heating is desired, our shelter would require an electricity source. In addition to our aforementioned construction materials, there are numerous opportunities to explore with other grantees for self-generated, off-grid electricity.

Depending on the desired use of the yurt, additional supplies might be needed (bedding for example if the yurt is to be used for overnight accommodations). These items are completely up to the user.

The maintenance of our shelters is dependent on the wear & tear from the inhabitants, and not dependent on the product itself. Just like a home, there will be things that come up that need repair from time to time, but there is not pre-planned maintenance on the units once they are in place. We have prototypes that have traveled to and withstood some extreme weather conditions for almost a decade, and not one unit has ever been retired.

**FLEXIBILITY & ADAPTABLE, PERMANENT & MOBILE**

One of the beauties of the G-Flex Insulation Yurt is that it can be permanently rooted in place, expandable or moved to any desired location. This allows for the maximum flexibility for various events and community needs of Fly Ranch.

* For permanent use, an elevated deck is recommended for the yurt to rest on, and a few additional steps are required for permanent weather-proofing.
* For expandable uses, the yurts come with an array of accessory panels that allow you to easily “add-on” a bedroom chamber, expand a main chamber or connect multiple yurts.
* For mobile purposes, the yurts are optimized to travel well and pop-up (we’ve clocked an on-site assembly in under 10m) anywhere there is some flat ground.

**OCCUPANCY OUTPUTS**

In addition to a basic, single-chamber structure, we have a number of accessory panels & hardwares that we can use to connect multiple yurts, or add sleeping chambers. The number of people that one yurt can provide sleeping accommodations for varies from 1 - 10 depending on the layout, structure and sleeping density. If the G-Flex is to be used for a common, hosting space, the yurts can accommodate 18 - 50 people.

**ORDER-OF-MAGNITUDE CONCEPTUAL COST ESTIMATE**

The cost of materials for a yurt is between $1,200 - $1,500 depending on the base structure.

Labor to manufacture the yurt depends on local labor rates, labor type (employee based, vs. contactor based) and skill. In California, for example, the labor estimate to manufacture the yurt is around $700 - $1,000 per yurt.

**STRATEGY FOR ON-SITE PROTOTYPE**

Much of the prototyping has been done over the course of almost a decade. The smartest strategy, based on a limited understanding of resources available onsite (covered space, electrical access, etc) would be to manufacture off-site, then deliver prototypes to the site for testing. We would test the following :

1. Time to assemble one yurt. Time to scale to 25 yurts
2. Climate performance (with and without air conditioners and heaters)
3. Durability (considering ground conditions & weather conditions)
4. General Enjoyment of habitat

In order to do so, we would recommend setting up off-site manufactured yurts & having a diverse range of inhabitants stay in them throughout one to two calendar years. Those inhabitants would be generating feedback on the above categories. Ideally the inhabitants would be diverse in gender, race, nationality, sexual orientation, marital/partnership status and family size.

**BEYOND FLY RANCH**

Climate migrants, disaster victims, restoration specialists, pandemic victims are all in need of dignified shelter. The opportunities to support a world in need of response-ready, soulful dwellings beyond Fly Ranch are endless.

**A CONSIDERATION FOR SELF RELIANCE & FOR GERLACH**

The G-Flex Insulation yurts can have an impact on Fly Ranch’s neighbor, Gerlach. Both manufacturing, on-site assembling & any repairs can be performed by Gerlach residents.

The G-Flex Insulation yurts also cater to one of Burning Man’s 10 principles : Radical Self Reliance. With the limited skill and physical strength required to set up a yurt on-site, the assembly can be performed by the inhabitants themselves.

**ENVIRONMENTAL IMPACT SUMMARY**

The G-Flex Insulation Yurt is designed to minimize its environmental impact. The yurts :

* create zero onsite waste for each assembly
* are re-usable
* are lightweight, for a more fuel-efficient travel