**THE WORLD ART STATION**

**The best saved carbon is the carbon not released!**

The World Art Station (WAS) is an international cultural stage, land-art renewable energy generator, entrainment hub and Fly Ranch landmark beacon.

In times of geo-political, economic, environmental and health crisis, humanity finds itself at the centre of an abstract war. Not long ago the Black Rock Desert participated in another such war - for high definition optical disc format. The desert was the shooting grounds for the ‘Space Chair’ advert - an artwork that later became part of the ‘Gravity Sucks’ show by Simon Faithfull. The premise of the work was to enter every household and redefine the viewer’s experience. Today this resonates more than ever with how reality is experienced from a social-distancing point of view and working from home context.

Drawing inspiration from the Space Chair project, we propose a new escape vehicle that will take event hosting into a higher dimension, using cross-boundary, intergalactic-like means of expression - 3D projection mapping. 3D mapping is sometimes described as ‘breathing life into the surrounding architecture’, and therefore we ask - can architecture breathe life into its surroundings? Just as the ‘Space Chair’ raced for digital recognition beyond the limits of this planet, the WAS aims to push the boundaries of what is possible by acting as a digital platform for transforming the land. If the Fly Ranch is considered as its ‘ground zero’, the WAS space will be located at the 1C site boundary by road 34 and will provide an entertainment hub that will livestream the first ever international 3D show generated entirely from renewable energy.

**Post-carbon storytelling**

3D projection has been explored for artistic purposes for decades now and it has shown us how we can deconstruct and reconstruct our built environment in imaginable ways. It satisfies our senses while we acknowledge that even solid matter could be liquidised through digital means. Taking 3D mapping as the main artistic component, the World Art Station reverses the concept of the tool on itself and forces it to project solid solutions to fragile material grounds, while ripping apart all rules of the building process.

WAS provides an experience of perceived three-dimensional structure. It aims to inspire international audience regardless of their physical locality. Through its virtual platform world-wide artist, architect and engineers can countlessly re-construct the landscape, while leaving every stone intact. The World Art Station becomes a steppingstone for the future generations to create more permanent solutions that achieve harmony with the natural world.

**Building beyond boundaries**

The Fly Ranch has the admirable aim to become the first build-in utopia. Throughout history many architects and designers have strived to recreate their vision of ‘The Ideal’, however it has always come with the burden of having one shot to get it right. We have seen many large-scale experiments, and many unfinished structures, which will forever scar the landscape.

Previous attempts to build the ultimate Shangri-la have always resulted in a new interpretation of a Western town grid system. To be able to escape the rigid boundaries of the grid, this proposal aims to bring the environmental and technological together, and create series of spectacles, aiming to transform the land towards that ideal without the need of physical boundaries.

We are conscious that any process of construction – physical or virtual, requires energy. Energy therefore becomes primal commodity for us to expand the potential of the site and open people's minds to the ability of living sustainably. Currently the energy demand of the Fly Ranch is during the spring to autumn habitable months, until infrastructure is permanently in place. We have calculated that our Station can generate approx. 177 MWh/year of electricity. This could make the Station a primary energy hub, gathering space and a landmark during the day.

At night the land is transformed – new structures, landscapes and cosmic ideas are projected and experienced by the spectators. A ritual that distorts our understanding of physical space, making it obsolete. Broadcasting every night event would wide means the virtual is extended further and brought back to its origin – nature. The landscape becomes the canvas for human creativity.

**Call for artists**

Тhere are 3 focal points to the proposal:

* the Land Art Generator on site acting as the physical body of the World Art Station, generating power and providing a ‘stage’ and a shelter;
* the 3D projection mapping platform on site (can it be on the land? How hard is to ‘map’ a bush – is that just projecting on the bush?)
* a virtual stream platform for future artists that will broadcast back artwork to private and public screenings worldwide.

The virtual function of the World Art Station is to provoke artists, makers, and architects around the globe to expand their realm, accounting for the context of their projects and accommodate the vibrations, acoustics, and topology of the site like never before. WAS aims to elevate the Fly Ranch within the world art scene by becoming an international hotspot for sustainable architecture and art proposals before the physicality of all these structures materialise on site.

The physical function of WAS address the renewable energy needs of the site during the day and transform the land during the night.

**This WAS structure**

The concept of the World Art Station could be multiplied throughout many corners of the site. This World Art Station structure is within the 1C boundary of the site. It is 40 meters high, made primarily from rammed earth reinforced columns.

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| --- | --- | --- | --- | --- |
| item | quantity | unit | cost rate (£/unit) | Total per item (£) |
| Concentrated photovoltaic panels | 200 | nr | 303 | 60600 |
| Battery/storage system for photovoltaics | 200 | nr | Included in PV (see above | 0 |
| Steel | 253 | t | Approx £750 per tonne (or less for waste steel) | 189750 |
| Fly ash/GGBS | 600 | t | Around £40 per tonne of fly ash | 2400 |
| Rammed earth | 2907 | m3 | Cost is associated with the transportation of the earth to site | - |
| External Lighting | 5 | nr | 73.3 | 366.5 |
| Electrical wiring | Varies | - | - | - |
| Christie DHD850-GS 6,900 lumen, HD, 1DLP laser projector | 5 | nr | 13 000 | 65000 |
| Wireless adapter | 5 | nr | Approx. £100 | 500 |
| Camera | 1 | nr | Approx. for HD £1900 | 1900 |
| Ceiling mounts | 5 | nr | Approx. £70 | 350 |
| TOTAL cost | | | | **£320866.5** |

**Environmental Impact Assessment**

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| --- | --- | --- | --- |
| Category |  | Impact | Period |
| Embodied carbon | Structure | The primary structure is rammed earth with fly ash binder and recycled steel frame. On the ground floor it is proposed a ring beam with reinforcement. The proposed materials are low-carbon, since:   * Rammed earth is mainly unfertile soils (clay, sand and gravel) from nearby sites – it does not require a carbon intensive processes of extraction; * Fly ash is the residue collected from the waste gases of coal power generating plants and is used instead of cement; * Steel is collected and recycled from the railway tracks waste;   We can therefore assume that the embodied carbon of the structure is equal to the emissions associated with the transportation of materials and people, energy used for nighttime lighting of the site, or any other energy associated with the wellbeing of the builders (food cooked on site for example). It is also important to acknowledge that the structure can fully disassemble and be recycled without associated emissions. For the purpose of this project, values of the total global warming potential (GWP) for a square meter of rammed earth are taken from the German ÖKOBAUDAT database, or equal to 0.93 kg CO2e / m2 (density of approx. 1700 to 2200 kg/m3).  The embodied carbon assumptions for the structure are at least 60 years. | 60+ y. |
| Mechanical and Electrical Systems | The highest embodied carbon is associated with the projection equipment, wiring and photovoltaics. This is partly due to the materials they are made of (steel, plastic, glass, copper), and partly due to their life-span (assumed 25 years). This means the equipment is likely to be replaced at least once during the life of the Station.  We therefore assume:  Electricity distribution cabling and controls (based on the UK Ecoinvent database) have GWP of 20.22 kg CO2e / m2. (This does not account for the projector equipment as this data is not available from the manufacturers at this point).  Photovoltaics (based on the French INIES, EPD No. INIES\_DPAR20180829\_143232, 8583), have GWP of 185.19 kg CO2e / m2 | 25y |
| Ecology | There is no negative ecological impact associated with the construction of the project.  The Station could potentially contribute to nighttime light pollution during projection mapping events, however it will be associated with the immediate boundary of the site. | | n/a |
| Circular Economy | All elements of the structure are fully dismountable and recyclable. The Interior is open plan allowing for full flexibility and adaptability of use. | | After 60 years |
| Local economy | Gerlach’s economy is run primarily within the service industry. This makes it an ideal place for the World Art Station’s headquarters to manage international art events through an online platform. This requires local IT management, website maintenance, equipment on site maintenance, and communications and branding teams. | | n/a |

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