LuminaDome: Immersive Digital Art Pavilions

Deep Innovation Report

Executive Summary

A proposal to activate BCP's coastlines year-round through portable, solar-powered digital art domes.

Connecting local academic talent from Arts University Bournemouth and Bournemouth University with a high-profile public canvas.

The Better Everyday

What if an ordinary coastal walk could open an unexpected, immersive gateway into digital art and generative design?

- The participant's concept, LuminaDome, is a portable, solar-powered geodesic pop-up pavilion designed to host immersive 360-degree digital art exhibitions in outdoor settings. Inspired by the sketch showing a dome gallery alongside seaside palm trees and stick figures, this concept blends cutting-edge technology like spatial audio and projection mapping with natural public environments.
- In 2030, imagine walking along the Boscombe seafront on a blustery November evening and stepping into a glowing, climate-controlled dome nestled on the sand. Inside, the sound of the wind is replaced by spatial ambient audio, and the walls ripple with generative ocean patterns designed by local digital creatives. Visitors stand together in the warm interior, watching digital art react to their movements before they head back onto the promenade.
- Humans possess an enduring need for awe, shared cultural moments, and restorative spaces, especially during cold or dark seasons when outdoor social options shrink. Currently, people are forced to view art in quiet, formal indoor galleries or consume digital content individually on small mobile screens. These traditional workarounds feel isolated, static, and often require traveling away from the beautiful natural assets of the coast.
- By integrating digital culture directly into outdoor recreation, this concept could create an expectation that public infrastructure should be dynamic and sensory. If people learn to expect high-quality art in a coastal dome, they will soon demand similar immersive experiences in other everyday settings. High streets, transit hubs, and corporate plazas could transition from cold, functional transit zones into warm, interactive community canvases.

Who It Could Matter To

A portable digital sanctuary offers new ways for artists, families, and isolated residents to connect through shared sensory experiences.

The Time-Pressed Local Parent

- They balance part-time work with raising young children in Boscombe and struggle to find affordable, local cultural activities.
- They spot the glowing dome on the beach during an afternoon walk and decide to step inside to seek shelter from a sudden drizzle.
- Their children are instantly captivated by the interactive floor projections, allowing the parent to sit, relax, and enjoy high-quality art in an accessible, stress-free environment.

The Emerging Digital Artist

- They are a recent graduate from Arts University Bournemouth specializing in generative coding and spatial projection mapping.
- They seek a public showcase for their major project but find traditional gallery spaces in BCP are fully booked or poorly suited for interactive tech.
- They gain a paid opportunity to curate a weekend installation inside the dome, building their professional portfolio and proving their skills to visiting creative directors.

The Winter Walker

- They are a retired resident living alone in Westbourne who walks along the coast daily to maintain physical health and combat isolation.
- They encounter the dome during a quiet, grey Tuesday morning walk when the beach is empty and cold winds make outdoor resting uncomfortable.
- They find a warm, welcoming space filled with soothing ambient soundscapes, providing an inviting place to rest and chat with fellow visitors.

What This Could Change for BCP

Activating the coastline with cutting-edge digital exhibitions can turn seasonal natural assets into year-round cultural destinations.

- The idea directly leverages the exceptional creative talent coming out of Arts University Bournemouth (AUB) and Bournemouth University (BU), which are indicated in the participant's sketch. This academic pipeline provides a continuous flow of fresh digital design, software engineering, and spatial audio expertise to keep the dome's content dynamic and locally distinct.
- This pop-up could directly counter the seasonal tourism dip by creating a compelling, weather-resistant winter attraction that draws residents to the coast during quiet months. Local cafes and independent shops near the installation would benefit from a steady stream of winter visitors, supporting year-round economic activity in the coastal economy.
- As a ripple effect, the success of a portable digital dome could inspire local hospitality brands and property developers to commission similar installations. This could spark a wider network of micro-venues across Poole Quay, Christchurch, and Lansdowne, establishing BCP's reputation as a pioneer in public digital art.
- The primary trade-off involves balancing the ecological impact and visual peace of the natural coastline with the high-tech, illuminated nature of the dome. To address potential public objections regarding light pollution or noise near marine habitats, organizers would need to establish strict operating hours and use highly directional audio.

Who Must Connect

Bringing a high-tech dome to life requires bridging the gap between digital creators, structural specialists, and public space custodians.

- A local digital creative agency, supported by the Silicon South network to find technical partners, could lead the operation by collaborating with a specialist geodesic dome manufacturer. This partnership ensures the structure is safely engineered for high coastal winds while the agency focuses on managing the projection hardware and software.
- Creative students and faculty from Arts University Bournemouth (AUB) and Bournemouth University (BU) would design and curate the digital exhibitions. This active participation ensures the content is cutting-edge and gives students direct industry experience in setting up large-scale interactive installations.
- BCP Council would act as a vital enabler by granting temporary land-use permits for seaside sites and coordinating with public safety teams. They would also provide access to baseline grid connections to supplement the solar arrays during prolonged periods of heavy winter cloud cover.
- A consortium of local finance and insurance employers could act as the primary sponsors, funding the initial hardware costs as part of their corporate social responsibility programs. In return, their employees receive exclusive access to evening networking events inside the dome, while daytime public access remains entirely free.
- The missing link is a structured relationship between the university creative departments and the seafront business associations, who currently operate in separate spheres. To make the first move, a dedicated creative producer must bring both groups together to design a mutually beneficial exhibition calendar.

Why This Fails

Without robust technical resilience and clear commercial alignment, a high-tech pavilion can quickly become an expensive, dark shell.

- **Battery and power drain** occurs when prolonged winter grey skies exhaust the solar power system, forcing the dome to shut down during peak weekend hours. The early warning sign would be the projection systems automatically dropping into low-power, dim display modes on consecutive overcast afternoons.
- **Disconnected curator networks** cause a breakdown when university creative departments and commercial sponsors disagree on the artistic direction or safety of the content. The early warning sign would be a sudden drop in fresh content submissions, leaving the dome playing repetitive, outdated loops that fail to attract return visitors.
- **Sand and moisture ingress** ruins the delicate laser projectors and high-end sensors due to the harsh, salty coastal winds sweeping through the entrance. The early warning sign would be persistent equipment calibration errors and flickering projection zones within the first week of deployment.

One Experiment to Start

Testing the technical viability of coastal projection on a small scale can prove the concept before investing in a full-size dome.

- The single most important uncertainty to resolve is whether sensitive projection and sensor equipment can run reliably off a temporary solar-battery setup in a damp, windy coastal environment. If the technical components fail or require constant, expensive manual intervention, the entire business model of a portable, low-impact art dome collapses.
- The proposed experiment is to install a single, weather-sealed projection unit inside a compact, semi-open beach shelter on Boscombe beach for two weekends in November. This unit will project a simple, interactive motion-art piece designed by an AUB student onto the shelter's rear wall, powered by a mobile solar battery pack.
- Keep going if the projection system runs continuously for six hours each day without overheating or experiencing battery drainage, and beach walkers stop to engage with the art. Stop or rethink if coastal dampness causes lens condensation that distorts the image, or if the solar array fails to recharge sufficiently during daylight hours.
- **Next step:** A creative producer from Silicon South can invite digital design leads from AUB and BU to a half-day scoping workshop to define the technical requirements for a weekend projection test.