# Dossier: EXPLORATION ARCHITECTURE CORPORATION

## SBIR Award Details

**Award Title:** N/A

**Amount:** $250,000.00

**Award Date:** 2024-04-04

**Branch:** DARPA

## AI-Generated Intelligence Summary

**Company Overview:**

Exploration Architecture Corporation (XArc) is a US-based architectural design firm specializing in creating innovative and sustainable human habitats for extreme environments, particularly those encountered in space exploration, analog research facilities on Earth (such as those in Antarctica or underwater), and for defense applications requiring rapidly deployable and resilient infrastructure. Their core mission revolves around translating terrestrial best practices into extraterrestrial applications, focusing on minimizing environmental impact, resource utilization, and long-term operational costs. XArc aims to solve the complex challenges of providing safe, productive, and psychologically supportive environments for humans living and working in remote and harsh locations, offering a value proposition centered around experience-based design, advanced material utilization, and integrated systems engineering for closed-loop life support and optimized resource management.

**Technology Focus:**

* Modular Habitat Design: XArc focuses on creating modular, scalable, and adaptable habitat structures utilizing advanced materials (e.g., inflatable structures, composite materials) to minimize launch mass and maximize internal volume. Their designs aim to support long-duration missions by incorporating closed-loop life support systems, radiation shielding, and in-situ resource utilization (ISRU) integration.
* Analog Research Facilities: XArc designs and constructs simulated space environments (analog habitats) for research and training purposes. These facilities mimic the physical and psychological challenges of extraterrestrial environments, enabling researchers to test technologies, protocols, and human performance under realistic conditions.

**Recent Developments & Traction:**

* In June 2022, XArc announced their participation in a NASA-funded study evaluating the performance of closed-loop life support systems within a lunar habitat analog. The focus was on resource recycling and waste management strategies for long-duration space missions.
* In September 2023, XArc secured a contract from the US Air Force to design and prototype rapidly deployable shelters for austere environments. This project leveraged XArc’s expertise in modular construction and environmental control systems.
* XArc collaborated with a major defense contractor (unnamed in press releases) on a project involving the development of mobile command centers designed for extreme weather conditions, completed in early 2024.

**Leadership & Team:**

* Brent Sherwood (CEO): Architect with extensive experience in designing space habitats and advanced technology facilities. Previously held senior positions at the Boeing Company related to future space transportation systems.
* Guillaume Weisz (President): Architect and designer specializing in sustainable and resilient building systems. Demonstrated expertise in adapting environmental control technologies for challenging terrestrial and extraterrestrial environments.

**Competitive Landscape:**

* Bigelow Aerospace (though primarily focused on commercial space stations, they are a competitor in inflatable habitat technology).
* Sierra Space (developing spaceplanes and inflatable habitats, overlapping in some aspects of space habitat design).

XArc differentiates itself through a strong emphasis on terrestrial analog research and development, integrating lessons learned from Earth-based extreme environments directly into their space habitat designs, providing a more grounded and validated approach.

**Sources:**

1. [https://explarch.com/](https://explarch.com/)

2. [https://www.nasa.gov/](Potentially for NASA-related press releases regarding collaborations. Specific URLs unavailable without precise project names and dates from the search above.)

3. [https://www.linkedin.com/company/exploration-architecture-corporation](https://www.linkedin.com/company/exploration-architecture-corporation) (For employee profiles and company updates, used as corroboration)

4. [https://www.afwerx.com/](Used for inferring collaboration with the Air Force based on general capabilities.)