TECHNICAL STRUCTURAL REPORT ARTÈ PARK

THE CATHEDRAL OF ART AND CONSCIOUSNESS

Location: Wiltshire, United Kingdom
Client: JTV FOUNDATION | Fondazione Artè Etra
Project Manager & Financial Advisor: JT TRADECAPITAL LTD
Lead Designer: Arch. Roberto Sindoni
Date: May 2025
Revision: Preliminary Draft 1.0

---

1. INTRODUCTION

Artè Park is a multidisciplinary architectural complex that fuses art, science, nature, and spirituality. The structural vision is centered around a monumental toroidal dome, surrounded by satellite pavilions and green infrastructure. The purpose of this report is to define the structural approach, construction strategy, and cost estimation necessary for the development of the Artè Park project.

---

2. STRUCTURAL CONCEPT

The primary structural feature is a **geodesic glass dome** of approximately 60 meters in diameter, designed as a symbolic and functional core. It houses the central exhibition and museum spaces. A **40-meter cylindrical tower** serves vertical functions, including laboratories, hotel floors, and a planetarium. These elements are connected by walkways and surrounded by a botanical greenhouse, amphitheater, retail, and hospitality units.

The architecture follows **sacred geometry** and cosmic symbolism, using natural curves and advanced materials. Construction solutions are based on modular assembly, sustainability, and high resilience.

---

3. STRUCTURAL SYSTEMS & MATERIALS

- **Primary Load-bearing Elements:** Steel space frame for dome and tower, reinforced concrete cores, and radial foundations
- **Envelope:** Photovoltaic laminated glass, ETFE membranes (where required)
- **Internal Structures:** Cross-laminated timber (CLT) panels and floors
- **Landscaping & Exterior Elements:** Natural stone and prefabricated stone seating for outdoor amphitheater
- **Foundation:** Micropile system suitable for heritage zone proximity

---

4. TECHNICAL PARAMETERS (Indicative)

- **Live Load (public areas):** 5.0 kN/m²

- **Dead Load (roof/glass):** 1.8–2.5 kN/m²
- **Wind Load:** up to 1.3 kN/m² lateral pressure
- **Snow Load (Wiltshire):** 0.6 kN/m²
- **Seismic Load:** minor; structure designed to dissipate horizontal energy

---

5. INSTALLATION SYSTEMS

- Geothermal HVAC and radiant heating
- Smart electrical grid with solar-fed generation
- IoT-enabled lighting, climate, and security
- Closed-loop water recovery and irrigation
- Fire safety via high-pressure mist and central reservoir

---

6. PHASING STRATEGY

Phase 1: Groundwork and foundation system (6 months)
Phase 2: Dome and tower steel frames (8 months)
Phase 3: Installation of enclosures, interiors, and MEP systems (12 months)
Phase 4: Landscaping, public areas, and auxiliary structures (6 months)
Total Estimated Duration: 32 months

---

7. COST ESTIMATE (GBP)

Component	Estimated Cost (£)
Excavation and Foundation	2,000,000
Geodesic Glass Dome (60m Ø)	6,500,000
Cylindrical Tower (40m H)	4,000,000
Steel Framework and Connectors	2,200,000
Glass and Photovoltaic Facades	3,800,000
CLT Interior Structures and Floors	1,600,000
Amphitheater and Outdoor Stonework	1,200,000
Botanical Pavilion (Greenhouse)	900,000
Retail and Dining Pavilions	1,100,000
HVAC and Geothermal Systems	1,500,000
Electrical and Smart Grid Integration	1,200,000
Water Recovery and Irrigation	650,000
Fire Safety Systems (High-Pressure Mist)	450,000
Lighting, Multimedia and IoT Systems	950,000
Landscape Architecture and Furnishing	1,300,000
Permits, Engineering, and Consultants	1,000,000
Contingency (10%)	2,135,000

TOTAL	**£32,485,000**

---

8. COMPLIANCE

The project will comply with:

- UK Building Regulations
- Eurocodes (EN 1990–1999)
- Environmental and planning laws (Wiltshire Council)
- Heritage protection criteria (due to proximity to Stonehenge)

---

9. CONCLUSION

This technical proposal outlines the structural framework and financial basis for the realization of Artè Park. Designed as a timeless center of cultural gravity, the structure blends technological precision with poetic vision, and positions itself as a benchmark for sustainable, meaningful architecture in the third millennium.