

22<sup>th</sup> of May, 2023

Ref No. 20230522-001

**DAVID SOO** FOUNDER & PHILOSOPHER ADVENT GROUP SYDNEY, AUSTRALIA

# STRUCTURAL COMPLIANCE CERTIFICATE FOR GEODESIC DOME GREENHOUSE

Omega Project Services, being Consulting Engineers and Chartered Members of the Institution of Engineers Australia has studied the adequacy of structural system and load rating for the Geodesic Dome installed at 122 Allinga Road, Woongarrah, NSW 2259. The structural system is subjected to the dead and wind loadings as described below. The structural assessment is completely based on the provided set of drawings (12 Nos. Sheets).

Omega project services has thoroughly analysed the structural system for the below loadings acting on the system. Consequently, after the structural study and calculations, Omega Project Services has concluded the structural adequacy as below;

### 1. APPLICABLE DESIGN STANDARDS

- AS/NZS 1170.0:2002 (R2016) **General Principles**
- AS/NZS 1170.1:2002 (R2016)
- AS/NZS 1170.2:2002 (R2021)
- > AS 4100:1998 (R2016)
- > AS/NZS 4680:2006
- 2. APPLIED LOADINGS
  - Dead Loading = Self-weight of Components
  - Wind Loading
    - Wind Region = A3
    - Terrain Category = 1.0
    - Basic Wind Speed = 37 m/s
  - Base Reactions
    - Maximum Vertical Force at One Anchor = 140 kg
    - Maximum Shear Force at One Anchor = 90 kg

### 3. MATERIAL SPECIFICATIONS

- Steel Grade for Tube Sections = C250
- Bolt Grade. Gr 8.8

# 4. MEMBER SECTIONS AND DIMENIONS

- Door Frame Section SHS 65x65x5
- Connecting Angle EA 90x90x6
- Strut Tube Circular Tube 25.4x1.2
- Hilti Anchor HST M12x115 L
- Dome Dimension Ø11m x 5.48m (Diameter x Height)

- Imposed loadings
- Wind loadings
- Steel Structures
- Hot-Dip Galvanized (Zinc) Coatings on Fabricated **Ferrous Articles**

### 5. LIMITATIONS, ASSUMPTIONS AND COMMENTS

> The supporting structure is well-capable of bearing the loading from the super-structure.

## 6. CONCLUSIONS AND RECOMMENDATIONS

The Dome Structural System is adequate to carry the maximum loadings as stated in Section-2 with the limitations/assumptions as stated in Section-5.

This certificate shall not be misconstrued as relieving the contractors of their contractual responsibilities for the safety and erection of the whole system.

Should you need anything further, or require any matters elaborated on, please contact the undersigned.

Yours faithfully,

For Omega Project Services



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