SPANBEST | CABLE-NET BARREL-VAULT AIR DOMES

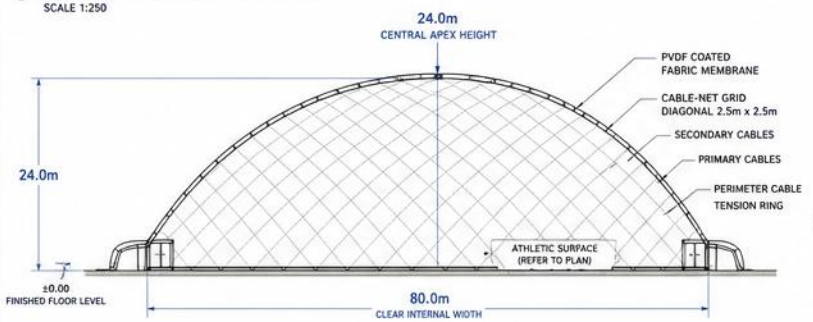
PRELIMINARY PRODUCT-SELECTION DRAWING | FINAL DIMENSIONS: TBD AFTER SITE LOAD & GEOTECHNICAL REVIEW

SB-ARD-40M-REV04

SHEET SERIES / ONLINE PREVIE

1 CROSS-SECTION (FRONT ELEVATION)

SCALE 1:250



2 LONGITUDINAL ELEVATION

SCALE 1:400

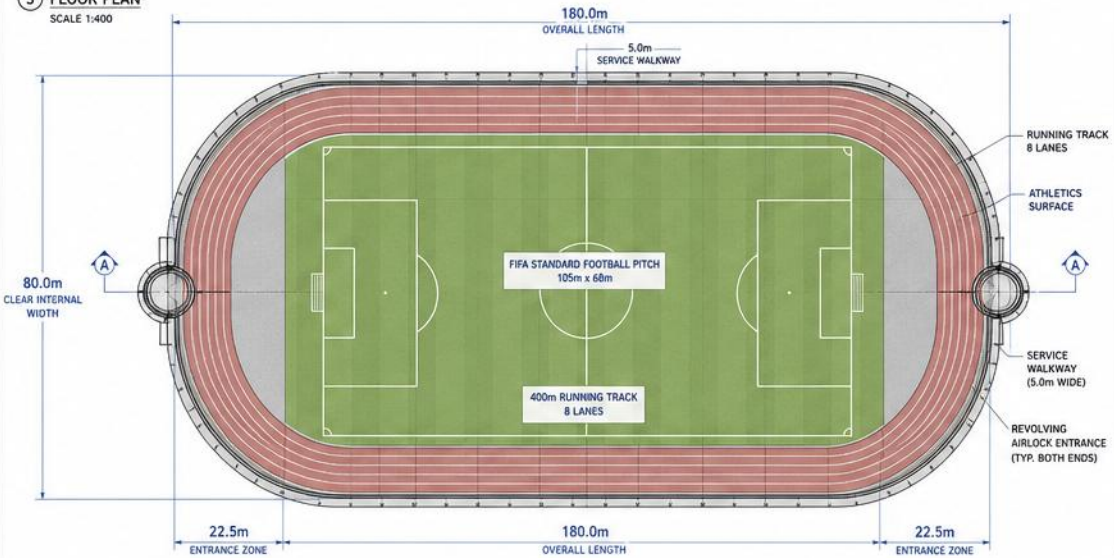
5 CABLE-NET GRID DETAIL

SCALE 1:50

CABLE-NET SPECIFICATIONS	
GRID TYPE:	DIAGONAL (DIAMOND) PATTERN
GRID SPACING:	2.5m x 2.5m
PRIMARY CABLES:	Ø16mm GALVANIZED STEEL WIRE ROPE
SECONDARY CABLES:	Ø12mm GALVANIZED STEEL WIRE ROPE
TENSIONING:	PERIMETER TENSION RING WITH TURNBUCKLES
CORROSION PROTECTION:	HOT-DIP GALVANIZED

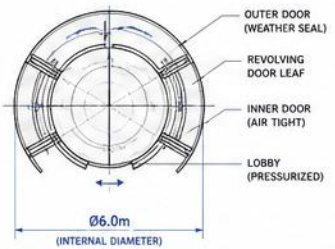
3 FLOOR PLAN

SCALE 1:400



4 REVOLVING AIRLOCK ENTRANCE DETAIL

SCALE 1:100

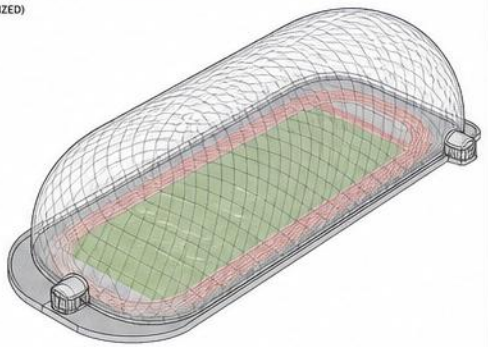


SECTION A-A

SCALE 1:100

6 3D AXONOMETRIC VIEW

SCALE N.T.S.



DESIGN PARAMETERS	
STRUCTURE TYPE:	AIR-SUPPORTED PNEUMATIC DOME
PLAN DIMENSIONS:	80.0m (W) x 180.0m (L)
APEX HEIGHT:	24.0m
BUILDING AREA:	14,400 m²
VOLUME (EST.):	~192,000 m³
DESIGN PRESSURE:	+/- 600 Pa
WIND SPEED (BASIC):	40.0 m/s (144 km/h)
SNOW LOAD:	0.75 kN/m²
SEISMIC ZONE:	NOT APPLICABLE (AIR SUPPORTED STRUCTURE)
OCCUPANCY:	SPORTS & ATHLETIC USE
DESIGN LIFE:	20+ YEARS

STRUCTURAL SYSTEM

- PVDF COATED FABRIC MEMBRANE
- DIAGONAL CABLE-NET (2.5m x 2.5m)
- PERIMETER TENSION RING SYSTEM
- INTERNAL PRESSURIZATION
- CABLES: GALVANIZED STEEL
- ANCHORAGE: CONCRETE FOUNDATION RING

AIR SYSTEM

- AIR SUPPLY UNITS: 4 (N+1 STANDBY)
- AIR PRESSURE: 550 – 650 Pa
- AIR CHANGE RATE: 1.0 – 1.5 ACH
- FILTRATION: G4 PRE-FILTER
- HEATING (OPTIONAL): HOT AIR RECIRCULATION UNITS
- CONTROL SYSTEM: AUTOMATIC PRESSURE & TEMPERATURE CONTROL

NOTES

1. ALL DIMENSIONS ARE IN METERS.
2. DO NOT SCALE FROM DRAWINGS.
3. ALL STRUCTURAL CABLES SHALL BE TENSIONED AS PER MANUFACTURER'S RECOMMENDATIONS.
4. MEMBRANE FABRIC: PVDF COATED POLYESTER, 100% OPAQUE.
5. FOUNDATION AND ANCHORAGE DESIGN BY OTHERS.

80m x 180m PNEUMATIC AIR DOME
SPORTS & ATHLETIC COMPLEX

PROJECT NO.:	AD-80180	DRAWING NO.:	AD-80180-A1	REV.: A
DATE:	MAY 2025	SCALE:	AS SHOWN	
DRAWN BY:	ENG. CAD	CHECKED BY:	STRUCT. ENG.	SHEET:
SHEET SIZE:	A1 (841 x 594)			1 OF 1

CONCEPT DRAWING ONLY — NOT FOR CONSTRUCTION. FINAL PE-STAMPED DRAWINGS REQUIRE CONFIRMED LOCATION, WIND/SNOW LOADS, SOIL REPORT AND PROJECT OPTIONS.

The drawing content above remains unobstructed; title metadata is placed in reserved margins outside the drawing viewport.