



ADVANCED BUILDING SYSTEMS

FIRST-OF-ITS-KIND NECB 2025 COMPLIANT DOME

60%+ TARGETED ENERGY REDUCTION
COMPARED WITH CONVENTIONAL
AIR-SUPPORTED SYSTEMS

R20+ ENGINEERING TARGET
FOR EFFECTIVE INSULATED BUILDING ENVELOPE

**NECB 2025
COMPLIANT**



MUNICIPAL RECREATION

SCHOOL ATHLETICS

COMMUNITY SPORTS

MULTI-PURPOSE FACILITIES

PATENT PENDING



Engineered by **Canadians** for **Canadians**



A BETTER DOME FOR YEAR-ROUND USE

Integrated Permanent Air-Supported Building Platform

ALDO DOMES integrates the structural membrane, modular cable network, insulated thermal envelope, HVAC, pressurization, automation and monitoring systems into a unified building architecture engineered for permanent, year-round occupancy.

Unlike conventional air-supported structures that primarily rely on membrane tension and internal pressure, the ALDO platform introduces a distributed structural system capable of supporting a substantially heavier permanent insulation system while providing modular serviceability and expansion.

01 STRONGER

A network of cables spreads the forces. Wind and snow loads can be shared across many cables instead of being concentrated in one location.

02 WARMER

The structure is designed to support a permanent high-performance insulated envelope and **comply with NEBC-2025**.

03 SMARTER

The building can respond before weather arrives.

04 DESIGN TO GROW

Designed for future expansion and increased capacity, allowing new space to be added without requiring a complete structural rebuild.

05 TURNKEY

Single-source delivery from engineering and manufacturing through construction and commissioning.

FOUR ENGINEERING PILLARS

STRUCTURAL

Modular diamond-lattice cable network with distributed load paths.

THERMAL

High-mass insulated envelope with an engineering target of R20+.

RESILIENCE & GROWTH

Field-serviceable structural modules and modular expansion interfaces.

AUTOMATION

Digital-twin-based predictive pressure and HVAC management.

A STRONGER STRUCTURE STARTS WITH THE CABLE NETWORK

Distributed Structural Load-Transfer Architecture

The ALDO structural system represents a continuous three-dimensional diamond-lattice modular cable network covering the building envelope.

Cable modules are interconnected through standardized structural nodes. The architecture is designed to distribute localized environmental and operational loading through multiple independent structural pathways rather than concentrating the load on a single cable or limited cable group.

LOADS CONSIDERED WITHIN THE STRUCTURAL ARCHITECTURE

WIND

Localized gust and pressure loading.

SNOW

Snow accumulation and drift loading.

INSULATION

Permanent dead load from the high-mass thermal envelope.

MEMBRANE TENSION

Digital-twin-based predictive pressure and HVAC management.

DYNAMIC LOADS

Localized, cyclic and operational loading.

This distributed load-transfer philosophy is central to the ALDO structural architecture.



ALDO's cable harness system

evenly distributes pressure and force loads.

ALDO has done extensive research showing that domes reinforced with our cable harness system can handle much more force than those without it.

One of the simplest illustrations of this is our balloon test.

BALLOON WITHOUT REINFORCEMENT



The balloon alone pops when the pressure reads **2.84 PSI**.

BALLOON WITHOUT REINFORCEMENT



Balloon bursts at **2.84 PSI**.

BALLOON WITH ALDO REINFORCEMENT

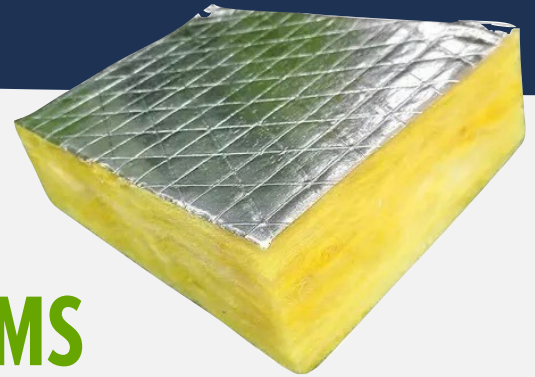


Reinforced balloon continues beyond **6.70 PSI**.

KEEP THE HEAT INSIDE AND SNOW AWAY

THERMAL & ENVIRONMENTAL

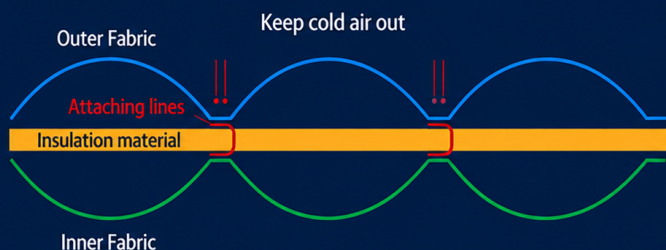
The ALDO envelope is designed as a structural and thermal system rather than simply a membrane enclosure. The cable network are proportioned to support a permanently installed high-mass insulation layer, with an engineering target of approximately R20+.



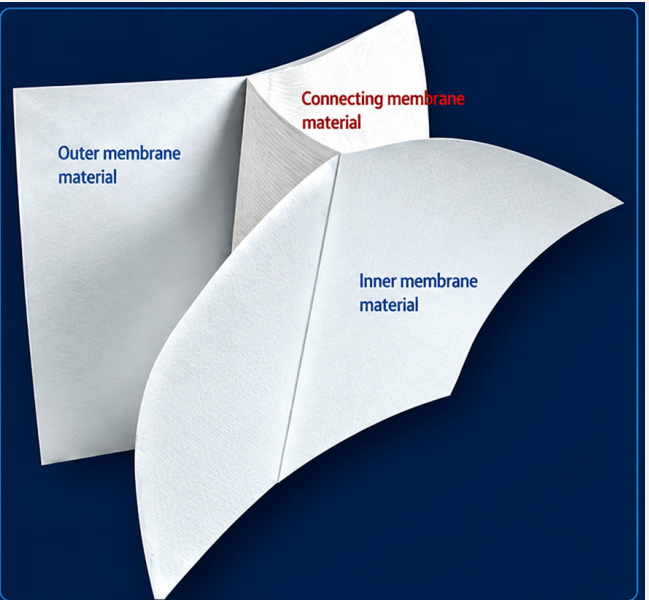
THERMALLY ISOLATED SEAMS

ALDO treats the membrane seam as a multi-function building-envelope component.

ALDO Innovative technology to prevent “cold bridge” phenomenon



Innovative welding processing technology
Result in: no cold bridge, no condensate water, excellent insulation performance



STRUCTURAL CONTINUITY

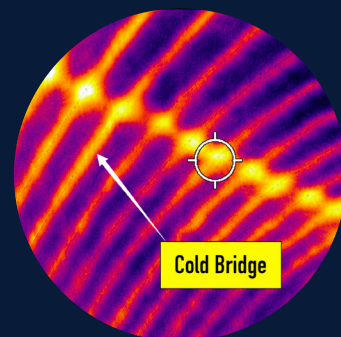
Maintains membrane load transfer.

THERMAL CONTINUITY

Reduces localized conductive heat transfer (cold bridging).

VAPOR CONTINUITY

Supports moisture-control performance.



OTHER DOMES



SNOW-MANAGEMENT GEOMETRY

The ALDO geometry is configured to promote snow shedding and reduce accumulation in critical roof regions.

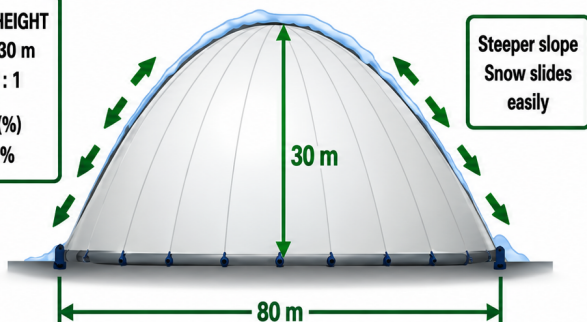
DESIGN OBJECTIVE

RIDGE-ZONE SNOW LOAD $\leq$ APPLICABLE REGIONAL DESIGN SNOW LOAD

ALDO DOME (HIGHER RISE)

Better Snow Shedding

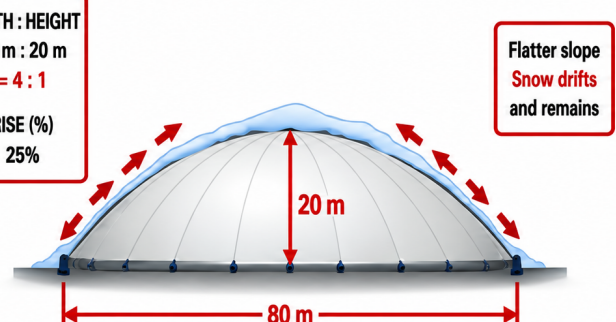
WIDTH : HEIGHT
80 m : 30 m
= 2.7 : 1
RISE (%)
37.5%



OTHERS (LOWER PROFILE DOME)

Poorer Snow Shedding

WIDTH : HEIGHT
80 m : 20 m
= 4 : 1
RISE (%)
25%





A DOME THAT CAN THINK AHEAD

From Reactive Pressure Control to Predictive Building Management

ALDO integrates the mechanical and control systems into a coordinated architecture to prepare the dome for changing conditions

Predictive pressure control is one of ALDO DOMES' most advanced innovation. It uses software to turn the dome into an actively monitored and controlled building.

ENGINEERING PRINCIPLES

1) WEATHER

Weather information shows an approaching storm.

2) PREDICT

The system estimates what the weather could mean for the building.

3) ADJUST

Pressure and HVAC systems can respond before conditions arrive.

4) MONITOR

The system continues monitoring and adjusting.



BENEFITS

COMFORT

Automatic temperature and ventilation control.

EFFICIENCY

Use energy where it is needed.

RELIABILITY

Multiple mechanical systems provide redundancy.

MONITORING

Operators can monitor building conditions.

THE STRUCTURE THAT CAN GROW

The ALDO architecture is designed for future expansion and increased capacity, allowing new space to be added without requiring a complete structural rebuild.

MODULAR EXPANSION

Standardized structural interfaces are incorporated into the building envelope during initial design and construction. This permits future expansion:

ADDITIONAL MODULE

Couple a new structural section to the existing system.



LONGITUDINAL

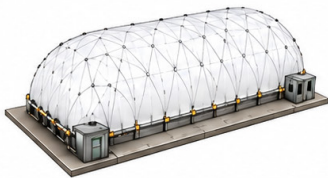
Extend the facility length.

TRANSVERSE

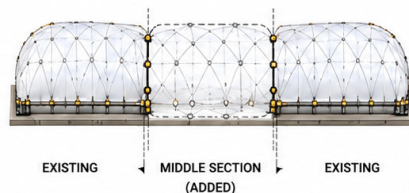
Perpendicular expansion.

1. LONGITUDINAL EXPANSION (ADDING MIDDLE SECTION)

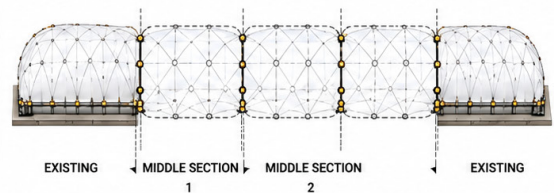
1A. EXISTING STRUCTURE



1B. ADDING ONE MIDDLE SECTION

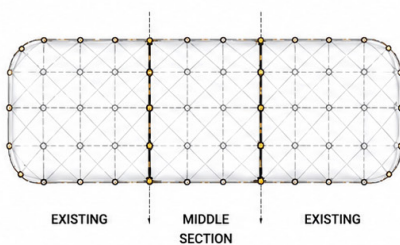


1C. ADDING MULTIPLE MIDDLE SECTIONS

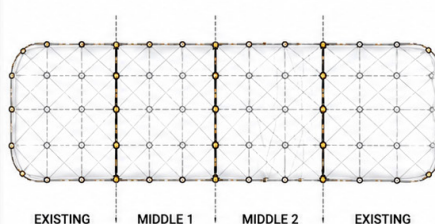


3. PLAN VIEW – EXPANSION LAYOUTS

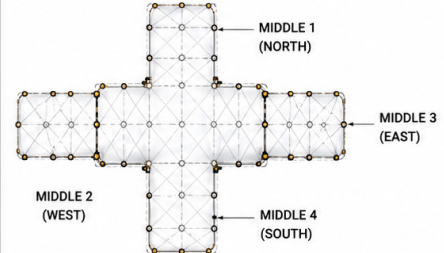
3A. LONGITUDINAL EXPANSION (ONE MIDDLE SECTION)



3B. LONGITUDINAL EXPANSION (MULTIPLE MIDDLE SECTIONS)



3C. PERPENDICULAR EXPANSION (MULTIPLE MIDDLE SECTIONS)





READY TO BRING A DOME TO YOUR COMMUNITY?

ALDO DOMES provides complete design-build including: delivery, HVAC integration, automation, construction management, and custom sports facility development for sports infrastructure projects.

APPLICATIONS



SPORTS FACILITIES

Tennis, pickleball, soccer, field sports and multi-sport facilities. School athletics and training environments.



MUNICIPAL RECREATION

Community recreation and year-round public facilities.



MULTI-PURPOSE FACILITIES

Large-span spaces supporting commercial and Industrial needs.

CUSTOMIZATION OPTIONS

- Custom lighting systems
- Integrated spectator seating
- Sports-specific & multi-sport configurations
- Sponsor or community branding
- Custom team colours & branded graphics

CONTACT US

EMAIL
info@aldodomes.com

WEBSITE
aldodomes.com

REGION
Canada



Engineered by **Canadians** for **Canadians**