



# SOLARDOME<sup>®</sup> PRO

*architectural geodesic system*



*Maarnes, near Bodo,  
North Norway*



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## Solutions for your design aspirations

Solardome Industries has over 40 years' experience in the design, manufacture and installation of geodesic domes. Our new innovative PRO system enables us to produce bespoke geodesic domes up to 25m diameter, quickly and cost-effectively. It also provides greater flexibility in design and dome applications. We are worldwide experts in the geodesic dome field and have a proven track record of producing high quality domes for the commercial, domestic and education sectors.

### **Why choose a geodesic dome for your building project?**

The geodesic dome is critically acclaimed by the American Institute of Architects as "the strongest, lightest and most efficient means of enclosing space known to man." Here are some of the reasons why it's one of the most efficient and sustainable structures available:

#### **Efficiency**

- No excessive hot and cold temperatures due to less surface area exposed to the outside elements
- The concave interior allows hot or cool air to flow evenly throughout the dome and so creates a natural airflow and even temperature
- 40% cheaper to heat than traditional shaped buildings

#### **Strength**

- The geodesic design has the best strength-to-weight ratio of any structure built using similar materials
- Withstands high winds, extreme temperatures and heavy snow loadings, even in the Polar regions







### **Sustainability**

- The decreased surface area means the dome requires 30% less building materials than conventional structures enclosing the same space
- The majority of materials used in our geodesic domes can be recycled i.e. aluminium and glass
- No deep foundations required; minimising the impact on the environment

### **Flexibility**

- No internal supporting structures required; providing an open plan flexible design
- Can be designed to suit any application or building requirements.

A key advantage of the SOLARDOME® PRO system is its flexibility and versatility. It can be clad with any type of material, meaning that we can build to your specific requirements. The domes can incorporate single glazed, double glazed, opaque and insulated panels into the design.

Our new system is a 'modern method of construction' (MCC) and provides an impressive alternative design to traditional buildings. It is a unique, flexible, eco-friendly, durable, free-standing building with no internal structures or deep foundations. An innovative dome building solution with a multitude of potential applications.





## Full service – from concept to completion

**Design service** – we offer a bespoke architectural design service which allows us to design dome buildings and their internal fittings. All projects are designed to fit your individual requirements and to meet required building standards.

**Fast project turnaround** – as we have a fully tested and adaptable geodesic system we can design, manufacture and install your dome quickly and cost-effectively. Dome projects can be completed in as little as 12 weeks from order and site times are minimal. Faster completion and occupancy will help provide a quicker return on your investment.

**Fitting service** – we can provide a dome shell for you to furnish or provide fittings such as furniture and storage. In the UK, we can project manage additional services such as lighting, water, electricity and heating using an approved list of specialist sub-contractors.

**Project management** – we offer a complete project management service from concept to installation. We will work with you to ensure your finished dome project is on time, in budget and built to your requirements.



**All our domes are designed and manufactured in the UK with a 10 year guarantee**

**Prices** - Prices start from £80,000 (exc VAT – supply only)





## Technical information

SOLARDOME® PRO geodesic domes are precision designed and engineered to give excellent performance, quality and longevity. We always use the best quality non-corrosive materials which produce extremely robust structures. Our aluminium frames have a structural lifespan of over 100 years, require no regular maintenance and have been engineered to withstand Arctic wind and snow loadings.

Our PRO domes are designed to meet the relevant building control requirements and are structurally tested to euro code standards.

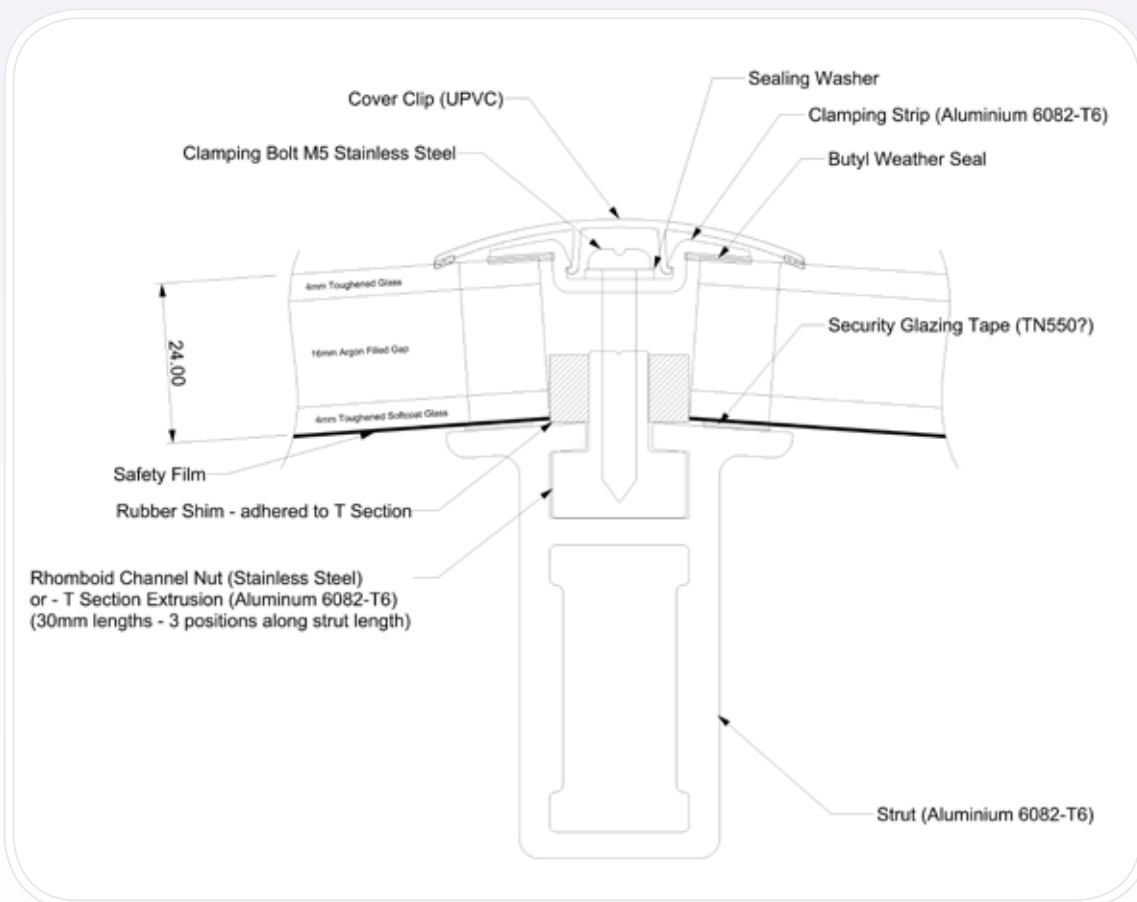
### General PRO dome specifications:

**Dome class:** 1 as standard

**Dome frequency:** 4 and higher

**Dome diameter:** 8m to 25m diameter

**Dome height:** approximately half the diameter of the dome as standard  
(however this is determined by your individual specifications)



*The new  
SOLARDOME®  
PRO construction  
diagram*

## Technical specifications

### Frame:

Purpose designed mill-finished aluminium profiles (alloy 6082 T6) for the strut and link arm section.

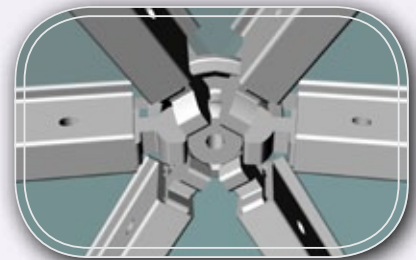
Image shows the aluminium struts in our glasshouse range (up to 10m diameter domes) and the much thicker PRO system struts (up to 25m domes).



### Nodal section:

Our unique Geo-Lok aluminium nodal clamping mechanism – (aluminum alloy 6082-T6 with stainless steel M12 centre bolt – patent pending) enables us to design and construct domes between 8-25m quickly and cost effectively.

Image shows the internal design of the new Geo-Lok nodal system.



### Powder coating:

All exterior metal components are powder coated white as standard. Exterior and interior metal components can be polyester powder coated in any colour – as an option.

Image shows an example of white powder coating RAL 9016.



### Cladding:

The domes can be clad with any type of material depending on your building specification and application.

#### Glass –

Single glazing – 6mm–12mm thick panels.

Double glazing – 4mm x 16mm gap x 4mm toughened.

Low E – argon filled (U value 1.2w/m<sup>2</sup>).

We can add safety film internally to create a laminated panel.

Glass is strong, scratch resistant and enables excellent light transmission.

#### Other materials –

Up to 100mm thick i.e. wood, metal composite or insulated panels (U values down to 0.35w/m<sup>2</sup>).

Insulation/acoustic materials can be fitted on the inside, if required.

Image shows size of panels used in a 15m dome.





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**Glazing and cladding strips:**

We use a combination of structural metal retention bars and PVC top clips. The metal retention bars secure the glass in place along with sealant strips. The PVC clips provide additional protection for the sealant strips and an aesthetic cover.

Image shows white top glazing strips.



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**Base connectors:**

The base connectors are thick aluminium plates as standard, but are designed based on individual locations and dome applications.

Image shows base plates for a 10m double glazed dome.



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**Ventilation:**

Lower level windows are designed for manual operating. Roof windows are motor controlled and can incorporate wind and rain sensors. The windows can be single or double glazed.

Image shows a double glazed window vent.

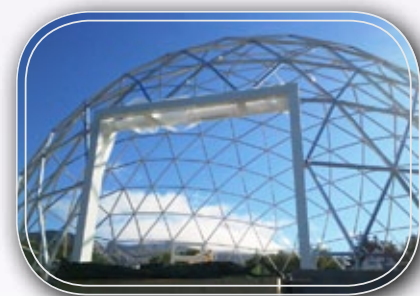


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**Doors:**

The doors are double glazed toughened glass with either PVC or metal frames. Doors are designed to your requirements i.e. single, double or large arched apertures.

Image shows a bespoke aperture in a 15m frame.



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**Additional features:**

Chimney flue panels, ventilation panels, merging domes, linking domes and second floors.

Image shows an aluminium chimney flue for a wood burner.



**All dome designs and components are subject to on-going design improvements.**

## Possible applications

Our SOLARDOME® PRO domes can be glazed or clad with a variety of building materials to create a free-standing dome structure or skylight – the list of possible uses is endless.

**PRO skylights** – we can provide double glazed skylights for use on all sorts of buildings. They are ideal for museums, art galleries, spas and well-being centres, offices, hotels and domestic homes.

**Case Study: Diana Hollacher's Crystal Salt World building - Lake Attersee, Austria**

A low profile 9.3m diameter, 2.7m tall double glazed skylight (U value 1.2 w/m<sup>2</sup>) – designed to cover a central meeting/café area within a well-being centre.

*External photo  
of the 9.3m  
PRO skylight*



**Dome floor area:** 68m<sup>2</sup>

**Low profile dome volume:**  
102m<sup>3</sup>

**Dome guide price:** £90,000  
(supply only)



*Internal photo  
of the 9.3m PRO  
skylight: Photo of  
the skylight on -  
Crystal Salt World  
Building (during  
construction)*

**Diana Hollacher says** "I am thrilled with the skylight - it looks stunning! It will help create such a wonderful central space for the Crystal salt World building; somewhere light, airy and tranquil."

*"I can't believe how quickly solardome finished the project. The team were polite, professional, diligent and very efficient. I can't wait to see the completed dome home"*



**PRO glass domes** - our dome glasshouses are the most efficient shape for capturing the sun's rays. This unique micro-climate creates the perfect environment for projects such as a tropical biome, an art studio, sensory and therapy gardens, a butterfly house or a protective house cover. Our glass domes can be single or double glazed.

**Case study: The Hjertefolger's 'Nature House' – near Bodo, North Norway**

A 15m diameter, 7.5m tall single glazed dome - designed to cover a 200m<sup>2</sup> three-storey self-build COB house (and an 80m<sup>2</sup> garden and 100m<sup>2</sup> rooftop gardens).

*A photo of the completed 15m PRO dome which will house the Hjertefolgers' 'Nature House'*



**Dome floor area:** 177m<sup>2</sup>

**Dome volume:** 919m<sup>3</sup>  
(two of the floors and the garden areas will be inside the dome)

**Dome guide price:** £130,000  
(supply only)



*Photos of the construction of the self-build COB house inside the dome*

**Benjamin and Ingrid Hjertefolger say** *"This amazing project was inspired by the 'Nature House' in Sweden, a totally self-contained ecological system, and since then we have dreamt of our very own self-contained environment. This dream was realised with the help of Solardome Industries; whose dome glasshouse will provide a shelter over our self build house and garden. It will provide benefits such as protection from the rain, snow and wind and drastically minimize building maintenance and heating bills.*

**Benjamin continues** *"Now the glasshouse is up we have been utterly blown away by the magnificence of the dome and can't wait to get our house finished so we can start life in our own little bubble. It is somewhere that supports our eco values and will allow our family to grow up in a beautiful, ecological and healthy environment."*

*"It is truly wonderful to work 'inside' on our house," Ingrid told Inhabitat (an online design magazine). "We have quite a lot of wind and rain here, so coming into the glass dome is such a pleasure! You still feel like you are outside, but the air is still, and we are dry even when it rains. It is fascinating to see the rain flow in a large curve around us. Every time the weather is bad I know why we did this."*



### Case study: Diana Hollacher's dome home - near Lake Attersee, Austria

A large geodesic dome structure, likely a greenhouse or a small-scale industrial facility, is shown under construction. The dome is made of a complex network of white metal or plastic struts forming a spherical shape. The base of the dome is covered with a white tarp. The structure is situated in a rural area with a small building and trees in the background. The sky is clear and blue. The image is framed with a white border and rounded corners.

**Dome volume:**  $326\text{m}^3$   
(there will be a mezzanine level inside the dome)

for Calc

Observations are in radians  
 Height 1.5 (parameter not visible to users)  
 This is a simplified modelling and does not account for thickness of materials  
 Frame Aluminium 6060 T6 (parameter not visible to users)  
 Cladding metal Aluminium, low E glass, single glazed,  $U_{\text{frame}} = 1.2 \text{ W/m}^2\text{K}$   
 (parameter Cladding  $U = 0.8 \text{ W/m}^2\text{K}$  is a derived depending on chosen cladding product)

Cladding Panels

Structure Steel

Cladding Panels

0.05

0.05

0.05

Possible steel positions marked in red

**Diana Hollacher** says "I'm extremely excited to be working with Solardome Industries; they are such an innovative, professional and environmentally conscious company. However I'm even more excited to be the first person to live in a dome home! I chose Solardome as they had the best system and the highest standards for residential housing and public buildings in dome structures. They could also design exactly what I'd dreamt of for Crystal Salt World and my new home, plus the natural properties of the dome are simply outstanding and of course perfect for healthy living."

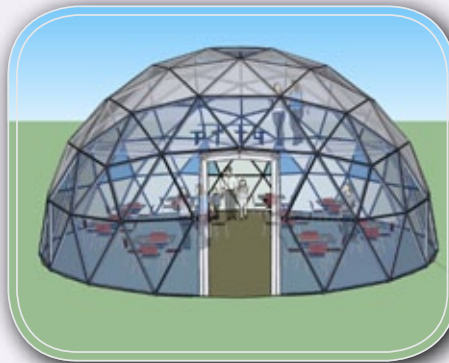


## Creative concepts

There are so many possibilities available with this unique modular system, you can create just about anything. Domes can be joined to other buildings or several domes can be merged or linked together to create a larger dome space. Extra floors and mezzanine levels can be added to create additional floor space.

### Possible ideas:

**A 10m freestanding classroom** – part double glazed/part opaque panels. Designed to include a mezzanine level, seating for 30-35 students and storage areas.

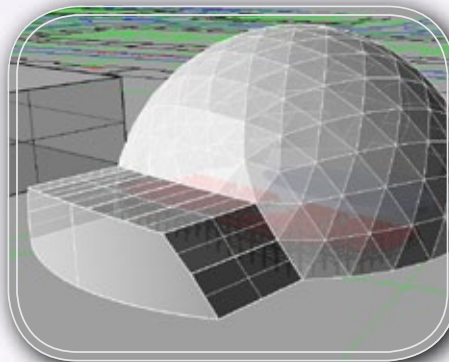


**Dome floor area:** 80m<sup>2</sup>

**Dome volume:** 271m<sup>3</sup>

**Dome guide price:**  
£150,000  
(supply only)

**A 20m performance studio** – part double glazed/part building panels. Designed to include seating for an audience of 300, a stage and changing rooms with toilets/showers. Height available for second and third floors to be incorporated into the design.



**Dome floor area:** 314m<sup>2</sup>

**Dome volume:** 2120m<sup>3</sup>

**Dome guide price:**  
£400,000-£500,000  
(supply only)

**A 25m linked mini 'Eden Project'** – six 25m diameter double glazed or ETFE panelled tropical biomes.



**Dome floor area:** 2946m<sup>2</sup>

**Dome volume:** 24,726m<sup>3</sup>

**Dome guide price:** £5mil  
(supply only)

**These are guide prices only as the total cost of each project is subject to design specifications.**



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## To find out more...

Request a quote

Book a site visit

Visit our showdomes

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*Lake Attersee,  
Austria*

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