

# Building a Riding Arena



## What is a MegaDome?

A MegaDome is a pre-engineered tensioned fabric structure that combines the integrity of structural steel arch trusses, with a tensioned woven polyethylene Powershield® fabric covering that has very high tensile strength and superb tear resistance. Standard warranty on the fabric is 15 years, and the life expectancy many years beyond that.



MegaDomes are available in many different widths, from 30 up to 125 feet, and in any desired length.

The Gothic arch design of a MegaDome is aesthetically very pleasing and blends well into any landscape. Inside, the MegaDome offers wide-open voluminous space for better air quality, and diffused natural lighting.

A MegaDome, supplied and installed, will cost in the range of \$10 to \$15 per square foot, depending on specific features, and the design options that are selected. Site preparation and foundation work is separate from that, and will vary depending on site conditions and the type of foundation selected.

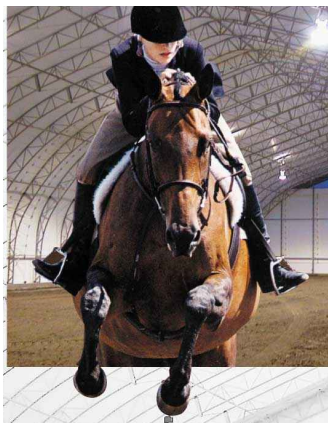


As a pre-engineered building system – it is more efficient and a cost effective alternative to conventional wood frame, pole buildings, or pre-engineered steel buildings.

**Efficient construction:** A typical MegaDome fabric structure can be constructed in 2 weeks where a wood frame building may take several months.

**Cost savings:** Generally costs are at least 30% to 50% less than any other building systems. (A study by Kemptville College, 2002, determined a saving of as much as 50% in both capital and annual cost).

**Clear span widths** – no post and beams, or a spider web of wood trusses, to block the light and view. A MegaDome will clear span across the full width of the building without the clutter of posts and beams.



**Bright interiors** – the white fabric (the most popular choice) is translucent, allowing natural diffused daylight to enter the building. While electric lighting may be installed for nighttime use, it is not necessary for daytime use. The result is a very pleasant and natural environment, and energy savings.

**Cooler in summertime** – The white fabric reflects the summer heat, and is very effective in providing a cool interior. While one might 'cook an egg' on the galvanized metal roof of a conventional pole building, the fabric roof remains relatively cool.

**Durability** – A MegaDome engineered fabric structure offers superior performance, when compared to other alternatives – while being an economical solution it is not to be considered a cheap building solution but rather an economically viable building alternative with long term value.

- The structural steel arch frames are constructed either of pre-galvanized tubing, with non-corroding silicon-bronze welding; or even better – hot-dipped steel for 25+ year protection.

- The Powershield® fabric is extremely tough and durable and carries an excellent manufacturer's warranty. On-site repairs to the fabric can also easily be done if needed, by our trained and properly equipped personnel.

## Steps to Building a Riding Arena . . .

### 1. SELECT AN EXPERIENCED BUILDER

While a MegaDome building, like all pre-engineered structures, is factory engineered and essentially quite simple, there are still many design, construction and permitting issues to be considered, for which reason it is highly recommended to work with a dealer who's also a builder who has experience with all facets of construction; who is able to handle the building erection efficiently and safely; and who can deliver a quality project that will yield an excellent riding facility for you many years to come. An established builder will also be there to provide warranty work and after-sales service.



BuildWorks is a BC Lower Mainland based dealer-builder

of MegaDome structures, with over three decades of building experience, and with in-house design service and experienced building crews. The BuildWorks team can advise you on building code issues; local permitting requirements; foundation options; and will prepare the necessary building permit applications and building drawings

### 2. DETERMINE YOUR BUILDING SIZE?

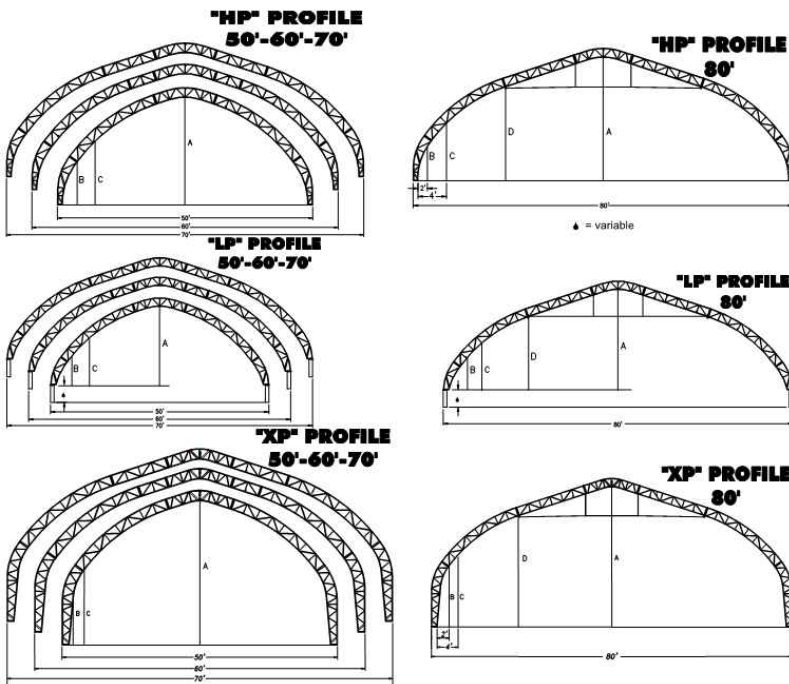
The right size of building is a factor of budget, space and personal needs. Your builder will be able to assist you with guiding you on those factors, and (particularly important) provide preliminary budget pricing to allow your to determine the financial viability of the proposed project, before engaging in too much planning and design work, Once a budget has been set you will want to consider the required width of the riding arena first, then it's length.

- **Width:** Though MegaDomes® are available in widths as small as 30 ft., the minimum practical width for a riding arena is 60 ft. with 70 ft. or 80 ft. being more desirable. For special requirements the Series-100 MegaDomes offers widths of 100 and 125 feet.
- **Length:** Buildings may be constructed to any length, provided that it is at least as long as it is wide. A riding arena is generally not less than 100 ft. long, and more commonly is between 120 and 240 ft long. The arch truss spacing determines the incremental length of the building which is uniquely calculated for each project based on the specific design requirements, and the applicable snow and wind loads for the building location.
- **Height Options:** MegaDomes are offered in 3 different models, all of them gothic in design, but with varying leg heights, which offer more or less sidewall height, as may be desired. The '**LP**' (Low profile) may be mounted on top of a wood, concrete or block wall; the '**HP**' (High Profile) may be constructed on a lower concrete or wood wall; while the '**XP**' (Extended Profile) is sufficiently high at the sidewall, to allow it to be constructed directly onto a low profile concrete footing/wall; concrete piers, or on Lock-Blocks. The XP MegaDome is very practical, cost effective, and makes for a very attractive appearance





## DOUBLE TRUSS ARCH MODELS



### 4. WHAT FEATURES & FINISHES?

A very basic MegaDome riding arena might just be a roof—open at each end— while a more complete building might include:

- closed gable ends
- gable, ridge and/or side ventilation
- man doors, or riding doors
- overhead roll-up, or sliding doors



The exterior may be finished with matching or color coordinated fabric; or the lower portions of the building

might be clad with metal or wood siding to suit your personal taste, or to coordinate architecturally with other structures.

The interior lower walls, if desired, may be clad with sidewall protection board, wood planking, or rails. Light fixtures, horse stalls, feed storage areas, etc., can all be added as required.

### 5. HOW ABOUT A BUILDING PERMIT

Most building projects, including farm buildings, require a Building Permit, which is issued by the local 'Authority having Jurisdiction' (generally represented by the Building Inspector) of the municipality in which the property is situated. While building code and bylaw compliance is an owner responsibility, it is a daunting experience for most. The BuildWorks team is familiar with the Canadian Building Code, and has experience in dealing with building officials. We can investigate all of the requirements, and assist you in supplying the required documentation for a Building Permit application.

MegaDomes are designed to meet or exceed most building codes and climatic conditions in Canada. The permitting requirements for the each project should be

verified as early as possible. The Building Inspector in your area may have different requirements to be met, or may apply the building code more or less stringently. Also, the type of submittals required – Soil Investigation Reports; Foundation Drawings; Building Drawings; Site Plans; B.C. Professional Engineer inspections, etc. – all vary from one jurisdiction to another.

The **National Building Code of Canada (NBCC)** governs all building construction in Canada. Most provinces have their own building codes, which are derivatives of the NBCC with various adaptations to suit local conditions or requirements. In British Columbia the **BC Building Code** is applicable. If riding arenas are located on farmland, and used for farm, i.e. non-commercial use, then the **Farm Building Code** applies, which in turn will reduce the Design Snow and Wind load factors for the structure, and hence reduces your direct cost of construction.

### 5. BUILDING FOUNDATIONS

The location and siting of the MegaDome affects the design and cost of construction. BuildWorks can assist you in determining the best method for a particular project. A proper foundation constructed of concrete, or preservative treated timbers, is required to support and to anchor the structure. The soil bearing capacity should be

also be verified, as it will affect the type and size of foundation to be constructed.

Foundation choices include:

- Pre-cast concrete Lock-Blocks
- Poured concrete strip footings and walls
- Concrete grade-beams
- Drilled and poured concrete piers
- Wood (preservative treated) posts



Depth of frost is also a factor to be considered – typically poured foundations extend some distance down below the frost line. As little as 18” footing depth is required in the Lower Mainland of B.C., and 4 ft or more in Northern BC, and Alberta.



## 6 BUILDING ERECTION

Proper installation is essential to the safety of the completed facility and its long-term performance. BuildWorks’ experienced crews install the MegaDome® structures and can do all of the required foundation work, to ensure safety during erection and structural integrity of the finished project. The manufacturer’s warranty is valid only if the building is installed in accordance with the engineered drawings & building specifications, and following good construction practices. BuildWorks is registered with WorkSafe BC for the protection of its workers and customers.

Where required by the Building Department, BuildWorks will coordinate all engineering inspections during construction, and final inspections and submission of (Schedule C-B).

## 6. Where do I start?

To plan your project; to discuss your plans; to assist you in setting a realistic budget; to determine the building permit requirements; and to help achieve your objectives with ease and peace of mind—contact BuildWorks any time. We’re just a telephone call away! Consultation and estimates are supplied on a no-charge, no-obligation basis.

### Contact information:

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Email: [info@buildworks.com](mailto:info@buildworks.com)

### Find out more at:

[www.buildworks.com](http://www.buildworks.com)

[www.megadomestructures.com](http://www.megadomestructures.com)