



**Rough
Brothers,
Inc.**

**Design,
Manufacturing,
Systems,
Construction**

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The Poly Arch

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1. Introduction

The Poly Arch by Rough Brothers has been designed and field-tested to meet your demanding environmental needs. Whether utilized for production or retail, the energy efficient roof-vented Poly Arch will provide the environment you desire while providing you with the most economical gutter connected structure. Suitable for natural or fan ventilation, the Rough Brothers Poly Arch has a unique roof vent design which allows for maximum cooling: the bottom rail of the vent opens above the ridge, eliminating trapped hot air. An additional benefit of the raised bottom rail is the ability to easily vent regardless of outdoor conditions.

2. Project Photo Gallery

3. Photo Gallery

4. Why Rough Brothers?

Rough Brothers is proud of our reputation for superior quality. By working closely with you, we can help you select, construct and maintain the optimal structures and systems to meet your needs. Whether you are expanding your growing range, giving your garden center a fresh look or just starting out, Rough Brothers' experience is second to none. Our people are a diverse group; backgrounds include engineers, educators, garden center managers, and growers, all working together to help you reach your dreams. From thermostats to computer-driven environmental controls or hand-watering to Ebb and Flo, we can help you determine your needs.

5. Features

Suitable for natural or fan ventilation, the Rough Brothers Poly Arch has a unique roof vent design which allows for maximum cooling: the bottom rail of the vent opens above the ridge, eliminating trapped hot air. An additional benefit of the raised bottom rail is the ability to easily vent regardless of outdoor conditions.

Designed to readily accept hanging baskets, lights, booms, echo systems, and other needed equipment, the Rough Brothers Poly Arch truss system can be designed to support each piece of supplementary equipment without additional structural members. This truss has also been designed for use with heat retention and shading

systems, minimizing summer heat gain and winter heat loss.

With the exclusive Rough Brothers bowed sidewall, you will benefit from added growing space immediately, while having the necessary components to expand later. Since the optional bowed sidewall utilizes standard Poly Arch components, expansion is easy with the addition of posts and gutter.

The Rough Brothers Poly Arch is available in standard and custom widths to suit your needs. Standard sizes include 20'6", 36', and 41' wide. The 20'6" is available in two designs: the standard Poly Arch and the Poly Arch with truss. The 36' and 41' wide Poly Arch structures are designed with clear span trusses. Available in various heights to accommodate your needs; complete design specifications and structural details are available.

6. Uses & Application

- Growers & Nursery Management
- Retail Garden Centers

7. Specifications

7.1. Gutter Extensions

There are many options in the gutter extensions depending on the situation:

1. Open ended to let the water run off the greenhouse
2. Welded end with no downspout
3. Welded end with downspout

7.2. Crosstie

At each interior post there will be a crosstie joist which shall span across the structure at 12'-0" centers.

7.3. Bar Joists

At each interior post is a bar joist spanning the width of the structure at 12'-0" centers. This not only substantially strengthens the structure, it also provides simplified installation of additional equipment such as:

- Hot Water Heating Systems
- Shade and Energy Curtains

- Watering Booms
- Hanging Basket Systems
- Monorails

7.4. Roof Bars

The Roof Bows are made of galvanized structural steel tubing.

7.5. Ridge

Ridge and crosstie are also galvanized steel tubing.

7.6. Roof Glazing Options

- 6 mil double poly inflated film
- 8mm polycarbonate house - aluminum extruded glazing bars with aluminum extruded cap

7.7. Ventilation

With optional roof vents our Poly Arch house provides superior ventilation.

7.8. Vent Location

Bottom rail of roof vent to be located approximately 3' up from the gutter and when fully open will be higher than the ridge, allowing warmest air to escape. This will also allow for ventilation when raining or when snow has accumulated in the gutter.

7.9. Vent Closure

Roof vent sash to be continuous aluminum bottom rail with weather stripping gasket and single snaplock attachment for roof covering.

7.10. Rack & Pinion

A positive drive system shall be used with an easily understood and maintained rack and pinion drive system.

7.11. Drive Motor

Each roof vent can be driven with a single drive motor or many vents can be driven

off one motor.

7.12. Control Box

Each motor will have a reversing motor control box to wire the motor.

7.13. Computer Control

The PolyArch house can be controlled with an environmental control computer system.

8. Equipment

- Benching
- Shade & Curtain Systems
- Environmental Controls
- Heating
- Irrigation
- Cooling
- Plant Growth Lighting
- Material Handling

9. Our Services Include

- Design & Build
- Systems Integration
- Project Management
- Installations
- Maintenance