

DIY Passive Solar Greenhouse

"Designed for Year-Round Use"



After living in Afton, Wyoming for ten years, Trevor Merritt decided it was finally time to build his own greenhouse. The winters are very cold and really long in Star Valley. Snow falls from November to May — ideal for snowmobiling, cross-country skiing, sledding, and ice skating. But for someone like Trevor who enjoys gardening, the arrival of summer can never come soon enough.

"The greenhouse has given me an opportunity to extend the season by several months," Trevor said. "I can actually keep plants alive all year long. I even have an Owari Satsuma

orange tree with several oranges on it!"

A passive solar greenhouse (also known as a PSG) is an ideal choice for cold climate gardeners looking to extend their growing season. For this type of greenhouse to stay warm, it must maximize solar heat gain and minimize heat loss. A PSG basically collects 'heat' from the sun, harnessing its energy.



"I really wanted a way to store the heat from the sun to avoid the higher costs of heating. A lot of the heat for the greenhouse can be stored in the ground where it is protected and insulated from the outside elements. This helps keep the greenhouse cooler in the summer and warmer in the winter." Trevor went on to say that the passive system he built does well except for the coldest times of the year. To help during those frigid months, he uses a small 1500-watt electric heater to provide heat when the sun isn't shining.

After a lot of researching online and watching YouTube videos, Trevor sketched out a plan for how he was going to build his greenhouse. "A passive greenhouse needs a lot of insulation on the north side of the building and should be partially buried in the ground," Trevor explained. "My greenhouse is made out of a fox block foundation with 8-inch cement walls on the bottom 4-foot. The north wall, as well as part of the east and west walls, are made out of this same material."



Trevor chose 10mm multiwall polycarbonate as the glazing material for his greenhouse. Translucent polycarbonate panels cover part of the roof, half of the east and west walls, and the entire south-facing wall of the building. The clear multiwall panels allow for maximum light transmission to enter the PSG while the hollow structure offers excellent thermal properties.

"I chose clear panels because I wanted to enjoy the feeling of being outside while in my greenhouse. I also wanted some additional insulation value out of having a double wall sheet. The



benefit of using polycarbonate over other materials is its durability. I was concerned about glass breaking as well as the expense of fixing it.”

To connect the multiwall panels, Trevor used aluminum base and cap profiles. An easy-to-use system for installing polycarbonate sheets on a structure like a hobby greenhouse, providing a finished, professional look. “Polycarbonate sheets are

lightweight and easy to move around which makes them great for installation. I like the base and cap system as it gives a nice seal on the polycarbonate, and it is simple to use.”



When asked if he had any tips for someone who might be contemplating building their own greenhouse, Trevor had this advice. “When cutting the sheets, some of the debris from the cut will get in the panel. Make sure to use a vacuum or air hose to get the debris out.” Trevor also mentioned ventilation is extremely important. “Having too much heat is a common problem so spend as much time as necessary figuring out the proper ventilation.”

If you would like to learn more about the benefits of using polycarbonate panels for your next project, please visit our [website](#) or call 888-602-4441 to speak to a knowledgeable member of the A-Team today.

Featured Product

CoverLite® Multiwall Polycarbonate Sheet

CoverLite® multiwall polycarbonate provides a high degree of light transmittance, outstanding impact strength, and excellent thermal insulation.

These high-performance sheets are available in a wide range of sizes and gauges and are stocked in clear, hammered, opal, white, and bronze.

Sheets are available with UV protection on one side or both sides thus retaining their weathering performance characteristics for many years.

Economical yet light in weight, CoverLite® multiwall polycarbonate sheets are a versatile option for a variety of indoor and outdoor glazing projects.



CoverLite® multiwall polycarbonate sheets are reliable, durable & easy to install.

[Visit Product Page](#)

DIY Tip of the Month

Dividing Spaces with Polycarbonate

Easy to handle, fabricate and install, solid polycarbonate sheets are ideal for a wide variety of interior applications and are a great shatter-resistant option to glass



Installing Profiles



Q: How can I get my U- or H-channel

panels.

Polycarbonate hanging wall dividers can be used to partition off a large space such as a commercial office, residential basement, or an upstairs attic, creating separate areas without the feeling of being 'boxed' in.

Offering good ink adhesion, solid colors or custom graphics can be printed on the front or back surface of the polycarbonate sheet to meet a broad range of design needs.

Create visual interest and add color to any room with polycarbonate solid sheet products.

*Need help with your next decorating project?
Call 888.602.4441 to talk to a friendly and knowledgeable A-Team member.*

to slide onto the multiwall polycarbonate sheet?

A. Try rubbing a bar of hand soap or squirt mild liquid dish detergent on the edge of the sheet. A putty knife may also be used to gently pry open the profile. After the profile has been installed, use a soft, wet cloth to remove any excess soap.

Note: Once installed, a bead of 100% silicone may be used along the exterior edges of the channels. This helps to seal the ends and secure the U-channel to the bottom of the polycarbonate sheet.

[More FAQs](#)

Multiwall Polycarbonate: A Good Thermal Insulator



Thermal Insulation of Multiwall Polycarbonate



Multiwall polycarbonate is characterized by its rectangular hollow structure "flutes" that run the length of the sheet. The flutes trap air between the sheet's layers, providing excellent insulation properties.

Thermal insulation can help keep a building warm in the winter and cool in the summer. The amount of thermal insulation a multiwall sheet provides is indicated by the sheet's R-value. The more layers the polycarbonate sheet has, the better thermal insulation or R-value it provides.

Multiwall polycarbonate sheets work well for indoor and outdoor glazing applications where thermal properties are important. Popular applications include sunrooms, interior walls, pool enclosures, greenhouses, bus shelters, carwashes, and more.



Benefits of Thermal Insulation

- Reduces heating and cooling costs
- Promotes energy efficiency
- Environmentally friendly
- Increased thermal resistance
- Helps reduce moisture condensation
- Provides noise insulation

Links of Interest

- [Transforming the building's public space, the enlarged entrance of the Biodome Science Museum in Montreal features huge skylights that flood the open space with plenty of daylight.](#)
- [Located in the heart of London's Design District, the Canteen is glazed with clear building materials including polycarbonate panels, turning the plant-filled food hall into a 'big lamp' at night.](#)
- [The Modus Operandi Brewery in Merewether, Australia, is a reimagined post-war portal frame shed that blends interior and exterior environments with transparent sliding polycarbonate partitions.](#)

Company Highlights

3rd Annual AmeriLux Golf Outing

On August 4th, AmeriLux held its third annual golf outing at the Hilly Haven Golf Course. A beautiful 18-

hole golf course nestled into the Niagara Escarpment just south of De Pere, Wisconsin.

This 4-person team event included 18-holes of 'scramble format' golf, golf carts, and rental clubs for those who needed them. After a competitive yet fun-spirited afternoon of golfing, everyone gathered for dinner, drinks, and prizes at the Hilly Haven clubhouse.

This year's winners were the team consisting of Saige Diedrich, Nate Schadrie, Evan Grelecki, and Molly Motylinski. Congratulations!



Meet the A-Team

Employee Spotlight | Jacob Ferry

Shortly after graduating college, Jacob joined the A-Team in the spring of 2022 as an Account Manager for AmeriLux International. "I heard about AmeriLux from a friend of mine that I had gone to school with. We decided to set up an interview and I ended up starting a week later."

Because Jacob oversees a very unique business segment for AmeriLux International, his time and focus is split between customer relations and operations. "The aspect of my job that I enjoy the most is working with my team every day. We are a tight-knit group that is capable of high outputs while having fun."

When asked about the importance of first impressions in customer service, Jacob has this to say. "The first impression is ultimately what will set the tone for the entire relationship. With a good first impression, you can really set yourself up for success."



"I would describe the culture at AmeriLux as 'forward thinking.'"

"Make a Play"



"The only people that have never made a mistake are people that have never done anything." We are predisposed to take action because failure to make a decision gives all control away to outside forces. We take control of our individual and collective future by engaging in meaningful action, accepting that we will make some mistakes along the way. We believe the only true failure is a failure to learn from mistakes and improve.

August's Brand Ambassador:

Jamie Hurley, Project Analyst - AmeriLux International

[How We Succeed at AmeriLux](#)

Come Visit Our Booth at these Upcoming Events!

Construction Rollforming Show

From raw materials to automation software, the 2023 Construction Rollforming Show is dedicated to roll forming and metal forming light gauge metal in building and construction. The show is returning to its original location and will feature more than 50 exhibitors from all facets of the industry.

- **When:** September 27th – 28th
- **Where:** Duke Energy Center, Cincinnati, Ohio
- **Booth Number:** 320

Shed Builder Expo

Ideal for suppliers and manufacturers, the 2023 Shed Builder Expo includes twelve educational sessions over the course of two days and many networking opportunities with peers. This show brings together a wide range of exhibitors in the building and construction industry. Don't miss out!

- **When:** September 27th – 28th
- **Where:** Knoxville Convention Center, Knoxville, Tennessee
- **Booth Number:** 110

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