

## ***Solar Innovations, Inc. Unveils Pit Greenhouses***

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Pine Grove, PA, January 12, 2012- Solar Innovations, Inc., a custom manufacturer of residential and commercial greenhouses; conservatories; sunrooms; skylights; and more, unveils Pit Greenhouses.

[Pit greenhouses](#) are extremely energy efficient, as they are essentially a hole dug into the ground with an attached glass structure. At a depth of four feet, the Earth retains a temperature of roughly fifty degrees year round; almost ten degrees warmer than that of an above ground greenhouse. If your greenhouse requires a temperature of seventy degrees, the temperature will only need to be raised twenty degrees. A traditional above ground greenhouse can easily drop below freezing during winter months; most plants require constant sixty degree temperatures. Stabilizing the temperature by using a pit greenhouse will reduce energy costs and allow you to nurture plants year round.

[Pit greenhouses](#) generally feature four solid walls, with a sloping glass roof that can consist of several different configurations. The most common configurations are a lean-to or double pitch and are generally attached to a preexisting structure. Heat from the building will transfer into the greenhouse and act as additional insulation. True pit greenhouses have compacted dirt walls but Solar Innovations, Inc. recommends concrete walls to prevent cave-ins.

The glass roof will be constructed out of an aluminum frame which will not rust, rot, warp, or require constant maintenance. Several finish options are available including standard paint, custom paint, or anodized selections. Insulated glass, meaning it consists of two panes with an airspace in-between, greatly improves the pit greenhouse's energy efficiency. [Pit greenhouses](#) have the possibility of overheating during the summer months, so ventilation should be incorporated. Ridge vents can be placed into the roofline to allow hot air to escape and fresh air to enter. An access door can be added at one of the gable ends to provide an entrance and can also be propped open to provide additional ventilation.

The plants you choose to cultivate will need to be taken into account when determining which heating method will be used in the greenhouse. However, allowing a greenhouse's temperature to fall below 50 degrees is not advised. When growing cold weather crops such as kale and broccoli, lower temperatures are acceptable; but warm weather plants like peppers and tomatoes require higher temperatures. A back-up heating source should be considered to prevent damage to the plants if the temperatures drop.



The north wall of a [pit greenhouse](#) acts as a thermal mass, consisting of a solid material and capturing heat during the day, such as stone or brick. At night, this heat will be released back into the greenhouse. Light colors like white and tan reflect light and reduce the amount of heat gained; the darker the material, the more heat it will retain.

Plants are often grown directly in the soil in pit greenhouses. Extra depth needs to be added for drainage purposes, an additional 1-2'0" should be excavated and filled with gravel. The floor in the greenhouse is sloped to encourage water run-off and drainage is diverted out of the greenhouse to prevent stagnant water.

Pit greenhouses present unique growing opportunities, for more information please contact one of Solar Innovations, Inc.'s greenhouse specialists at 800-618-0669 or [skylight@solarinnovations.com](mailto:skylight@solarinnovations.com).