

Build an Easy 5 x 5 Home Greenhouse for under \$25

by [PondPlantGirl](#) on November 20, 2008

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Intro: Build an Easy 5 x 5 Home Greenhouse for under \$25

www.pondplantgirl.com/coldframe.htm Here is how you can build your own home greenhouse for under \$25.

The main pic is a larger version of the 5x5 Greenhouse. See the actual 5x5 image below. For more pics and info please see my website at: www.pondplantgirl.com/coldframe.htm

HAPPY PONDING!!!

See more videos at: www.pondplantgirl.com





step 1: Supplies Needed

- 1/2" PVC Pipe

4 sections, Total Cost about \$8.00

- 1/2" Corner Elbow Connectors

4 with 3 ports

- 1/2" Adapters

4, Connectors + Adapters total cost about \$4.00

- Primer and PVC Cement

Total cost about \$5.50, Borrowed cost = \$0

- Scissors

I had scissors - my cost \$0

- Long Zip Ties

My cost \$1 from the dollar store

- Hack Saw or Pipe Cutter

Borrowed - My cost \$0

- Visquene or Plastic Sheeting

6' x 6', 3.5 mil (6 mil is ideal)

Thin clear plastic will not withstand past one season.

Box of 10' x 25' is \$13.50, Cost per section roughly \$7.50

- Total Cost = \$20.50



step 2: PVC Pipe

Assemble the pipe on a dry surface in a well ventilated area, such as a patio or driveway, and cut 2 of the 10' sections of PVC pipe in half, making a total of 4 - 5' sections of pipe.



step 3: Assemble with PVC primer and cement

Swipe the inside of the elbow pieces and the ends of the PVC pipe with the purple primer. Do not swipe the inside of the threaded elbows.

After the primer dries, attach the elbows to the ends of the two 5' section of pipe with the PVC cement.

Attach the 10' section of pipe to the unthreaded end of an elbow with PVC cement and press down firmly.



step 4: Here's your basic shape!

After the cement will dries within a few minutes, carefully bend the 10' section of pipe and attached to the other unthreaded end of the 5' section of pipe with cement. Leverage might be needed to bend the pipe, such as leaning up against a wall to prevent slipping while bending the pipe.

Repeat instructions for framing the other side of your greenhouse.

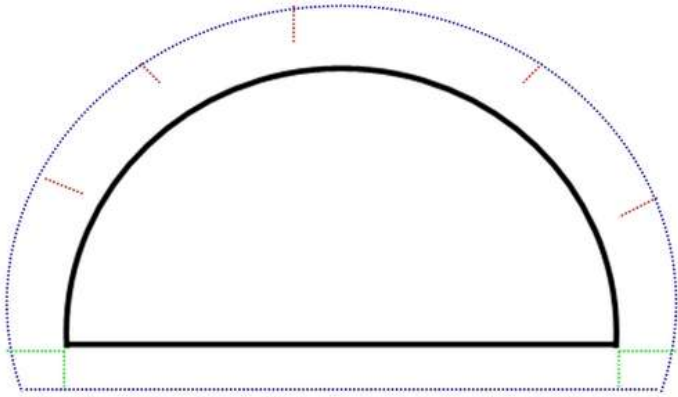


step 5: Cut out the pattern for the end hoops.

Lay down the cold frame end on the plastic sheeting and cut out the end piece to attach. Be sure to leave at least 6 inches overlap. Allow for corners to be cut out in an L and pleat curve side. Only cut pleats about half way into the sheeting. Do not cut all the way down to the pipe line.

See pattern below.

The black is the assembled pipe
The blue is the outline pattern for the plastic sheeting
The green is where to cut the L corners
The red is the pleating. More can be made if needed.



step 6: Attaching the plastic

Attach the plastic sheeting to the frame with zip ties starting with the straight edge. Be sure to tuck plastic around the pipe. Slice small holes through plastic close to the frame. I poked a few of my holes too far from the frame structure, but it still looks just fine. Pull ties tight and trim tails. Repeat all the way around the frame.



step 7: Connecting the PVC

Screw in threaded adapters to threaded elbow end. Attach the remaining 5 foot sections of pipe to the adapters to complete the frame. If you want a temporary structure, do not glue the bottom of your greenhouse pipe together. However, you will need duct tape or cement blocks to brace the base of your greenhouse. If you are using it out in the yard, you can also anchor it down with camping tent spikes.



step 8: Covering the frame

Cover frame with remaining plastic sheeting and cut to size.

Attach sheeting to frame ends with zip ties from top of frame to half way down. This will allow for access to the inside of your cold frame and will allow for airflow on windy days.

Edges of plastic sheeting can be weighed down with metal washers or clamped to frame.

Slice small holes in top of cold frame plastic to prevent rain water from puddling.



step 9: Wow! That was easy!

A small cold frame greenhouse can be assembled in 1-2 hours. Cover your garden or pond to keep plants warm on cold winter days and nights!



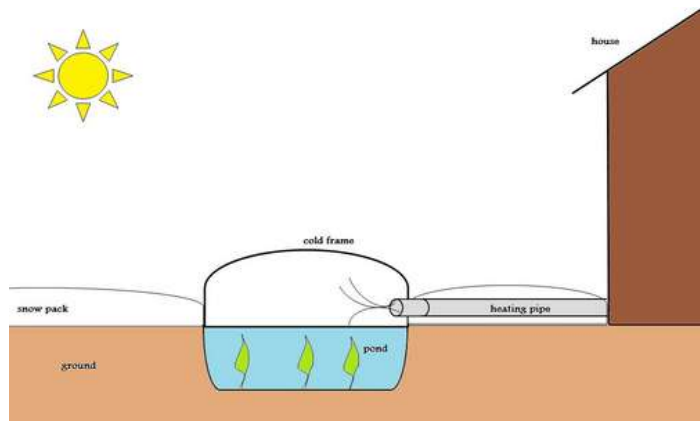
step 10: My Next Instructable

My next Instructable will be about how to build a snow country greenhouse and how to efficiently heat it with either solar or wind power. This picture shows heating with a dryer vent, which should only be used if put on a timer system.

If you have any questions or great ideas, please email me at gail@pondplantgirl.com!

HAPPY PONDING & HAPPY INVENTING!

:-) GAIL



Related Instructables



Build a Simple Greenhouse by PondPlantGirl



Greenhouse From Old Windows by cheft



Build an Aztec Water Garden by PondPlantGirl



5 x 4 m greenhouse by BobS



Unheated movable seed starting greenhouse by Green_Anarchist



Home Gardening (guide) by Instructables Guides



Greenhouse by anthonywin




How to build a Cold Frame by Dominique

Comments


50 comments [Add Comment](#)


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 **jrwygant** says: Nov 28, 2008. 5:21 PM [REPLY](#)
Instead of zip ties I've been using very short lengths of the PVC pipe, maybe 1/2 to 1-inch, that are then sliced open. They slip over the other PVC and plastic tarp to make great removable clamps. They were the idea of wife Sandy after I complained of not having a good way to fasten on the tarp. The one in the photo has been stretched open from use, but it was just cut straight across. I've had one of these hot houses for several years and always get 30-60 days head start on my vegetables.




 **Kelly2006** says: Sep 16, 2009. 10:39 PM [REPLY](#)
How do you cut the PVC pipe?


 **jrwygant** says: Sep 17, 2009. 5:30 PM [REPLY](#)
I used a cheap replaceable-blade hand saw, the kind that has a U-shaped frame with a thin blade stretched between the ends. I sawed off a short length of pipe first, maybe about a 1/2-inch, producing a ring. Then I sawed a small gap across the ring to permit it to open. The PVC pipe saws very easily.


 **Kelly2006** says: Sep 17, 2009. 8:59 PM [REPLY](#)
Thanks for responding. I am assuming you are talking about a hack saw - see the picture on this link.
<http://en.wikipedia.org/wiki/Hacksaw>
If so, how did you hold the pvc pipe so that you didn't cut your fingers. Sorry for the silly question.

 **jrwygant** says: Sep 18, 2009. 10:04 AM [REPLY](#)
A hacksaw is used mostly for cutting metal, although pretty much any kind of saw will work. I was actually referring to a coping saw, which is cheaper and smaller: http://en.wikipedia.org/wiki/Coping_saw
The coping saw also has less risk of cutting fingers, since it's smaller and lighter. PVC comes in long lengths, so you can hold it well back from where you're cutting. A vise works best to hold it but is not necessary.

 **Kelly2006** says: Sep 18, 2009. 12:05 PM [REPLY](#)
Ahhhh, never heard of a coping saw. Thanks for the link and info.

 **PondPlantGirl** says: Nov 29, 2008. 1:49 PM [REPLY](#)
That is a fantastic idea! I will be sure to pass the information on.

 **jrwygant** says: Nov 30, 2008. 8:29 PM [REPLY](#)
Thanks. My wife gets credit. I forgot to mention that I built my hot house over a 4x8' raised bed, with embedded PVC in the corners (slightly larger diameter than the tarp supports), into which I slip the bowed verticals that support the tarp. It makes take up/down quick and easy.

 **Darth_Reese** says: Nov 20, 2008. 6:07 PM [REPLY](#)
Where am I to get "Visquene or Plastic Sheeting?"

Also, is there a way to seal it air tight?
I want to make a carbon-dioxide hyperberic chamber, as is it was in the pre-flood era (Yeah, I'm a Christian, and proud of it!)

<http://www.genesispark.com/genpark/exper/exper.htm>

If any one reads this, you'll know why I want to build one. Think about it! A tomato tree, that can produce over 13,000 tomatoes in it life-span!

To bad I can't have a warehouse sized one. *sigh*

(I hope I did the URL link rightATMOSPHERIC EXPERIMENTS)

http://www.instructables.com/id/Build_an_Easy_5_x_5_Home_Greenhouse_for_under_25/



Saint_Awesome says:

Nov 20, 2008. 7:39 PM [REPLY](#)

Better be careful, the Lord may not take kindly to you manipulating His creations in such a scientific manner. Recall that even in Sodom there existed a high level of technology and material comfort abounded, only to allow morality to be corrupted by sin. Remember, the Lord drowned the inhabitants of earth for a REASON! If He meant for this technology to be saved, he'd have told Noah to take it with him.



Innie says:

Sep 11, 2009. 4:00 PM [REPLY](#)

Hi,
The Lord gave us our brain with which to survive and has nothing against having a greenhouse, no matter how technologically advanced it may be. There is nothing sinful in it. It is only when man uses technology to go against God's will that he sins. I am Christian and know that much!



radiochemist says:

Apr 4, 2009. 11:12 PM [REPLY](#)

ok person if you think the bible says that growing plants in green houses is sinful then I would hate to think of what else you think is sinful that you're missing out on. go enjoy life, stop living in fear and start living!



DARTH_Reese says:

Nov 21, 2008. 3:00 PM [REPLY](#)

The Lord sent the flood to destroy the people because they did not repent. And it wasn't technology, well... you could call it that if you want to, but that's beside the point. Didn't God give Adam dominion over the plants and animal's leaving us (their descendants) to care for them? Besides, plants are not "alive" in the usual sense. Animals were given souls (simpler from Human souls, but souls non-the-less). Plants weren't, which reduces them to complicated, self-growing "machines", for lack of a better word.

What, why not give a plant a soul? Well, that leads to a major problem.
Suppose plants had souls:

- 1.Plants die when you eat them.
- 2.There was no death until sin came into the world.
("By death sin came" or somesuch wording)
- 3.God gave Adam & Eve plants to eat as food.

4.If Adam & Eve ate plants whilst in the Garden of Eden (before sinning), then we have death of soul possessing plants before sin. That turns the "By death sin came" verse into a lie.

You don't want to worship a fib-telling God, now do you?



Innie says:

Sep 11, 2009. 4:06 PM [REPLY](#)

Hi,
Why are you dragging your foolish views into this discussion. People like you make religion look bad because you say things that are ridiculous. I am a Christian too, and growing plants in a greenhouse is obviously not sinful. Anyway, Adam and Eve sinned because they disobeyed God, and for no other reason.



nave says:

Nov 21, 2008. 9:14 PM [REPLY](#)

how do you know plants don't have souls?



hcold says:

Nov 21, 2008. 9:10 PM [REPLY](#)

The Bible, sir, has no basis in reality. Please leave these people to their science.



shmacky26 says:

Nov 21, 2008. 12:44 PM [REPLY](#)

And just exactly how do you know this?



Saint_Awesome says:

Nov 21, 2008. 2:45 PM [REPLY](#)

Same way OP knew HIS 'pre-flood' information.



shmacky26 says:

Nov 24, 2008. 7:29 AM [REPLY](#)

You're just silly. Technology 10,000 years ago? I don't think so. You're just getting caught up in middle eastern fables. Haven't you noticed that most religions have come out of the middle east? And what about dinosaurs? What was their sin? Do we have to put religion as the cause of every natural disaster?



lukethedog says:

Nov 22, 2008. 12:59 PM [REPLY](#)

This is a great instructable. I liked the YouTube video. But, please tell me how the religious wacko's found their way into this thread?



Darth_Reese says:
Hmmm. Good question.

Nov 22, 2008. 5:34 PM [REPLY](#)



PondPlantGirl says:

Nov 22, 2008. 3:01 PM [REPLY](#)

Luke - I haven't a clue! I would much rather talk about plants and better NATURAL ways to grow them. I lives are SO filled with chemicals which produce tons of health problems. I have a friend who lives across the street from an orchard. Her name is Robin. She decided to no longer breed koi, because when the orchard was sprayed with insecticide all of her fish would go belly up.



phoenixjen says:

Apr 6, 2009. 12:22 PM [REPLY](#)

If people don't respond to them they usually stop posting. So it really is the posters that perpetuate the problem by replying to their posts.



lukethedog says:

Apr 7, 2009. 5:29 AM [REPLY](#)

Hello - Gee thanks for your fantastic insight ! Five months later and you come up with such sage advice.



PondPlantGirl says:

Nov 20, 2008. 8:51 PM [REPLY](#)

The best place to purchase visqueine is at Lowes. They seem to have the best price. You can purchase it in small amounts to very large amounts. It all depends on your needs. The plastic can also be purchased at Home Depot and even online at eBay.

The easiest way to make it more air-tight would be to caulk the holes and attach the sheeting to the base of the structure. I choose not to make mine air-tight so that a strong wind will not blow the structure down.

Hope this helps! Please remember to tell your friends about me!

HAPPY GARDENING

GAiL

www.thepondplantgirlshow.com



kittscarmen says:

Nov 22, 2008. 4:48 AM [REPLY](#)

Tis looks like a terrific idea. It is pretty cold in the northeast today, but I will be thinking about this as a way to start my veggies early next spring.

Thanks



PondPlantGirl says:

Nov 22, 2008. 11:11 AM [REPLY](#)

Hey! You are welcome. Cold frames (mini greenhouses) are great for getting that jump start to the spring garden. However, I am working on a design to have a veggie garden year round.

Thanks for the nice comment! You can check out more of my videos at www.pondplantgirl.com and at www.youtube.com/user/pondplantgirl

:~)



Darth_Reese says:

Nov 22, 2008. 12:14 PM [REPLY](#)

Can't watch the video, dial-up



PondPlantGirl says:

Nov 22, 2008. 3:02 PM [REPLY](#)

That's sad, Darth. E-mail me and I will see about sending you a DVD. ;-) gail@pondplantgirl.com



linda4444 says:

Jul 9, 2009. 3:29 PM [REPLY](#)

We doign this over 2 x 8 framed raised beds. Drilling holes in the 4x4 supports and bending the pvc into the holes will create the frame for the plastic, and can be easily removed when the plants get to tall.



Seth Black says:

May 28, 2009. 3:09 PM [REPLY](#)

...very nice Instructable.

Just a suggestion: Instead of cutting small holes, and using zip ties, cut some PVC clips from surplus pipe, and snap them over the top of the plastic, and onto the framework.

They'll hold the plastic tightly to the frame, and there won't be any holes to keep an eye on...



Seth Black says:

http://www.instructables.com/id/PVC_Clip/

May 28, 2009. 3:21 PM [REPLY](#)



twizedreams says:

oooo nice idea! I have had problems in the past with cut holes through plastic and zip ties so I was worried about that!

Jul 1, 2009. 9:46 AM [REPLY](#)



crazypoop says:

This is coolio

May 27, 2009. 6:41 PM [REPLY](#)



christ321 says:

(removed by author or community request)

May 27, 2009. 11:24 AM



skcactus says:

Hi,

I have a question how to bend PVC pipe to join? and the Plastic cover is strong not to blow away in wind? I live in North East (Philadelphia, PA) and grow cactus.

Please let me know. Thanks in advance.

May 19, 2009. 8:17 AM [REPLY](#)



LuminousObject says:

I just finished mine yesterday. So far, I've planted lettuce and some other mixed greens thingy. Here it is.

Apr 25, 2009. 5:02 PM [REPLY](#)



hellow123 says:

Have you got any buds yet.

Where did you put yours, I can't find where mine can go.

May 1, 2009. 8:55 PM [REPLY](#)



LuminousObject says:

You know where I put it genius. For all the other people, it's about 15 feet in the air on top of a wooden play set.

May 3, 2009. 9:16 AM [REPLY](#)



swlindy says:

One way to add heat under row cover or plastic cover is to string C-9 Christmas lights among the plants. I string 2 boxes of the C-9s per 12 x 6 foot plant bed and find that they keep the bed 10-15 degrees warmer than the cover alone even when the temperatures go down to the low teens. My row cover is rated to protect plants down to 22 degrees, so the lights keep my plants producing all winter.

Dec 17, 2008. 6:22 PM [REPLY](#)



etymological says:

That's brilliant! I'll have to try something similar to extend my growing season - our winters get far below 22, but I bet I could keep growing past early October (our frost date) and into November.

Apr 24, 2009. 1:06 PM [REPLY](#)



PondPlantGirl says:

Wow! That is awesome! I will certainly pass this valuable information on to all my viewers and friends.

Dec 19, 2008. 11:43 PM [REPLY](#)



LuminousObject says:

I'm thinking of making one of these, but I have a question. What plants should I try to grow in this that are edible? Any help would be greatly appreciated. Thanks!

Apr 21, 2009. 2:20 PM [REPLY](#)



magnoliasouth says:

I have a question, that is probably on the dumb side but I'm completely new to any of this. When I see plastic greenhouses such as these, they're always dome shaped. Is there a reason for this? Is square or rectangular a bad idea? Does it have to do with air circulation or is it a better hold for construction or something else entirely?

Apr 13, 2009. 5:41 PM [REPLY](#)



kiefmom says:

Trassin, I live in the U.P. (Michigan) and thought this might be good but I think I am going to go for a smaller version of the "old windows" greenhouse instead.... did you try this one, if so how did it work for you?

Apr 13, 2009. 1:18 PM [REPLY](#)



kiefmom says:

about how far are they spaced apart?

Apr 13, 2009. 1:12 PM [REPLY](#)



radiochemist says:

you would probably want to have some air exchange system with fans and what not because mold and mildew can set in very easily if you don't have any enough air circulation. Also, roots need oxygen so putting them in a c02 hyperbaric system would cause root rot, and the high pressure means there is no air exchange in a humid environment which is a ideal for mold. you could do an aeroponic system in a c02 enriched environment, but plants can only take in so much c02 before it becomes toxic to them too.

Apr 4, 2009. 11:31 PM [REPLY](#)



PALandscaper says:

I built a simple watering system for my vegetable garden out of 1/2 inch pvc. With the right placement of T's and 90's you could probably run water through your frame, and have a greenhouse that could mist your plants as well!

Feb 3, 2009. 11:22 AM [REPLY](#)



felipriscilla says:

My first thought.

Mar 9, 2009. 12:41 PM [REPLY](#)



mattnbrenda says:

A nice easy build, but to keep the pipe neater looking you can use clear primer.

Feb 8, 2009. 2:49 AM [REPLY](#)

[view all 104 comments](#)