

Evolution of pPod™ Development

Note: all prototyping and testing was done in New York City.

Following 3 years of experimenting with boxy cold frame designs, the first pPod with a curved PVC frame and twin-wall polycarbonate panels was built in January 2013.



1st photo of pPod prototype #1 (Feb 2013)

Reasons for designing the curved front:

- Holding the cold frame lid open was really annoying, particularly in the wind. After years of considering wind in greenroof module design, we knew that this would be an important factor in any rooftop enclosure.
- Using front doors on the cold frame was a little better, but on a crowded balcony it was still restricting.
- We like the way it looked.

The curved frame for this first version was formed by heating and bending a 1" PVC pipe and then cutting a slot in the side, which was difficult and crude.

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Prototypes #1 (right) and #2 (left) – 2 weeks before Ponix dba was founded on Earth Day 2013



Prototype #2 (May 2013, July 2013)

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The next prototype version was constructed using square PVC pipe and fittings and the curved frame was formed in layers cut from expanded PVC sheet. Solexx twin-wall polypropylene sheet was used for the front panels but it was not rigid enough in the transverse direction.



Prototype #3 with Solexx front panels (April 2015)

Prototype #4 was slightly different than #3 as it had all 6mm twin-wall polycarbonate panels and the back was modified to allow the back panel to slide open.



Prototype #4 with sliding back panel (June 2015)

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Prototype #5 was an expanded version of the pPod.

The wall and frame construction were the same as #3. The panels were 6mm 2-wall polycarbonate.

The interstitial frame section was very stable and actually increased the overall stiffness of the pPod.



Prototype #5 – expanded pPod (Aug 2015)



Prototype #5 assembly

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(April 2017) The plants that wintered in Prototype #5 – sage, thyme, oregano (hidden), mint, chives (hidden), garlic chives, parsley. Most were heavily harvested throughout the winter.



(April 2017) Seedlings started in Prototype #5 in late February.

Note: Winter night-time temperatures inside the #5 pPod were approximately 12 degrees warmer than in #1 even with a lower temperature heater in #5 (constant 78F water vs. 85F water in #1):

Outdoor temperature @ 30 F: pPod #1 ~48 F , pPod #6 ~60 F

Outdoor temperature @ 10 F: pPod #1 ~35 F , pPod #6 ~46 F

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Prototype #6 is the first of the most recent general design version of the pPod enclosure.

The frame pieces are slightly narrower and the overall height 2.5" taller than in the previous version. The curved frame panel channels and flex panel retainers were improved. The square PVC pipe used previously was no longer available, so the straight sections had to be made by hand from PVC sheet.

This version had a new circulation/heater unit design and LED grow light strips were installed. This prototype was used for a few different tray baffle and lid iterations.



Prototype #6 (Aug 2016)



Prototype #6 with grow lights installed (Nov 2016)

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Prototype #6 was moved from NYC to Alpharetta, GA in Jan 2017.

It survived the onslaught of hurricane Irma with no problem.



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Prototype #7 is nearly the same as #6 except for a few detail improvements, particularly in the tray design and LED grow lights were not installed in this prototype. This tray is a rough functional representation of the final tray design.

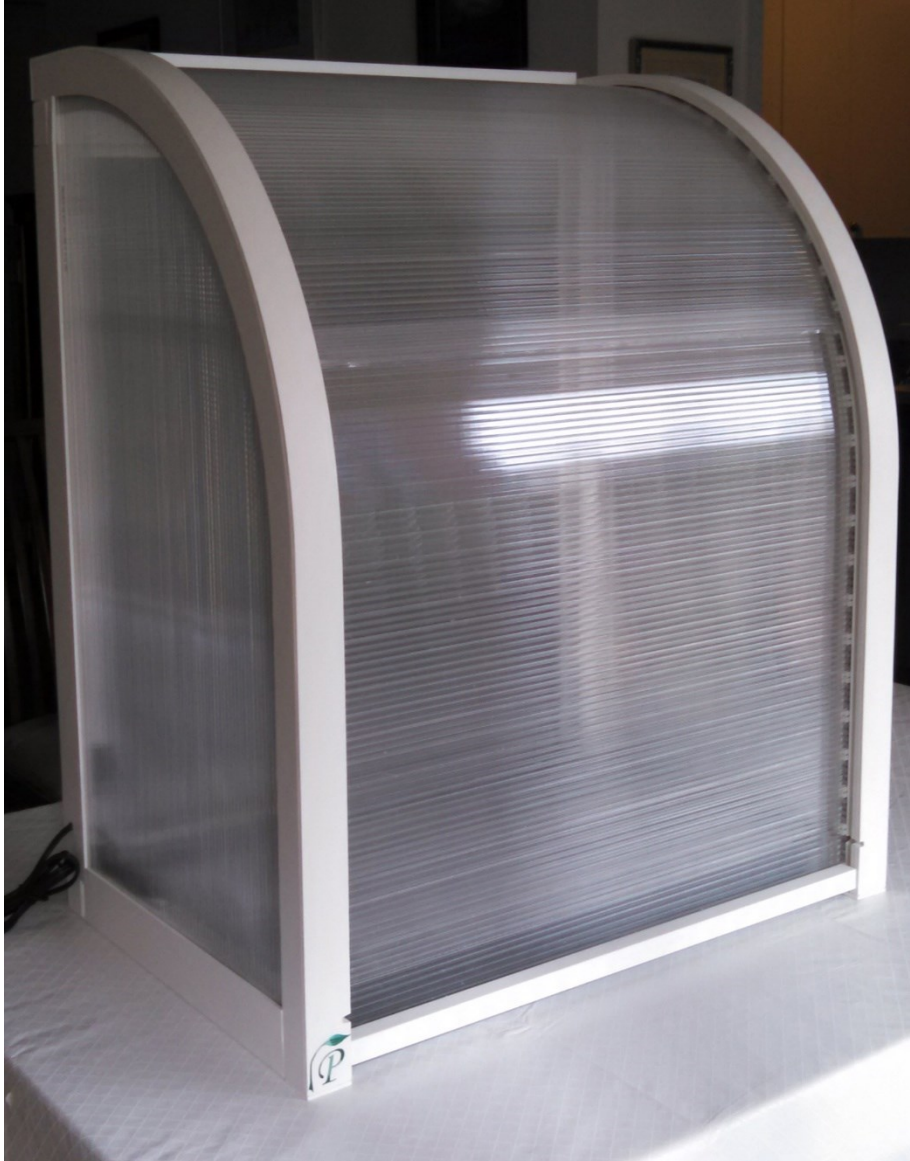
The overall dimensions for this pPod prototype are: **25" wide x 18" deep x 30" tall**

This pPod was in use in Atlanta, GA until July 2018.



Prototype #7 (April 2017)

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Prototype #7 (April 2017)

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Prototype #8 is a double-wide iteration of Prototype #7. It is 48" wide x 18" deep x 30" tall and each half has its own circulating heater/irrigator and LED grow lights on a timer. One power cord is utilized for all electrical components of this 2x Expanded pPod.

This pPod was set up on the 7th floor terrace of the WeWork/WeLive building at 110 Wall Street in Lower Manhattan in Nov 2017.



Prototype #8 before the grow lights were installed



Prototype #8 with grow lights installed, Dec 2017.