

# Parts List

Quantities listed on the following pages are the materials to build 1 WindowFarm column.

If building more than one column, not all parts are necessary to multiply. These parts are considered 'scalable' and denoted with **S**. Do not multiply these quantities. Multiply all other quantities by the number of columns you want to make. We recommend up to 4 columns to start.

Quantities listed on the following pages for consumable items (e.g. nutrient solutions) are for a 6 month supply for 1 column.

Check valve type and inclusion of lights will influence your final parts list.

**Important Footnotes follow the parts list.**

## Basic Tools **S**

Hutzpah and some brains!

Step ladder

Wire snips

Measuring tape

Hacksaw

Fine grit sand paper

Needle nose pliers

Scissors

Razor blade/X-acto knife with sharp blades

Permanent marker

Power drill

Safety glasses

Wall anchors (optional)

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## Aquatic Supplies

Item #	Part	Quantity	Source
1	Air Pump (preferably with control dial)	1 (different configs available)	Aquarium store or Petco.com #9901, #9902, or #9904
2	Check Valve (included with PetCo pump)	1	Aquarium store or Petco.com
3	Air line Tubing (included with PetCo pump)	(1) 2.5' length	Aquarium store or Petco.com

## Recycled Supplies

Item #	Part	Quantity	Source
4	1.5 liter Deer Park, Ice Mountain, Ozarka, Poland Spring, Zephyrhills, Arrowhead, or Callistoga drinking water bottles	5	Recycling bin or trash can
5	Sports drinking cap from one of the same brand of bottles (For use in Bottom Bottle Cap Assembly <b>METHOD A</b> )	1	Recycling bin or trash can
6	Presta Threaded Long Stem Bicycle Inner Tube (with the nut!) (For use in Bottom Bottle Cap Assembly <b>METHOD B</b> )	1	Bike shop

## Hydroponics Supplies

Item #	Part	Quantity	Source
7	Hydroton clay pellets	1 liter	Hydroponics store or HomeHarvest.com #HYD5LT
8	3-inch diameter net cups	4	Hydroponics store or HomeHarvest.com #NET3IN
9	Plant tape	3 feet	Hardware store or Hydroponics store
10	Maxsea All Purpose 16-16-16	5 tablespoons	Hydroponics store
11	Maxsea Bloom 3-20-20	5 tablespoons	Hydroponics store
12	Grow cubes (if growing plants from seeds)	> 1 dozen	Hydroponics store

## Hardware Supplies

Item #	Part	Quantity	Source
13	Printout of bottle templates found in this document	1 each	Your printer or a copy shop
14	2" wide masking tape	1 roll	Hardware store
15	1" wide electrical tape or masking tape	far less than 1 roll	Hardware store
16	White Spray paint	1 can	Hardware store
17	Metal inflation needle with internal threads (metal needle used to inflate a sports ball with a bike pump)	1	Sports equipment store
18	Baking Soda	far less than 1 box	Grocery store
19	Epsom Salts (magnesium sulfate)	3 tablespoons	Grocery store
20	Cotton yarn	2 feet	Hardware store
21	3/8" ID flexible vinyl tubing	1 foot	Hardware store
22	3/8" OD 1/4" ID rigid tubing	6 feet	Hardware store / McMaster.com #9245K17
23	Bead chain	180" (+ 18" per light column)	Hardware store / McMaster.com #3606T16
24	Bead chain couplings (with center hole)	12 (+1 per light column)	Hardware store / McMaster.com #3606T41
25	Screw hooks/cup hooks	2 (+1 per light column)	Hardware store
26	Sealing washers (For use in Bottom Bottle Cap Assembly <b>METHOD A</b> )	2	Hardware store / McMaster.com #94709A214
27	1" diameter carbide grit ceramic hole saw with pilot/arbor	1	Hardware store
28	Electrical timer (capable of 4 on/off's per hour)	1	Hardware store / McMaster.com #7993K42

## Lighting Supplies (optional)

Item #	Part	Quantity	Source
29	Compact Fluorescent (CFL) light bulbs in Daylight Spectrum (5500+ Kelvin color temperature) 100 watt incandescent equivalent or 27 actual watts	2 (per light column)	Hardware store or Home Depot
30	Clip light or electrical cable with 1 socket end	1 (per light column)	Hardware store or Home Depot
31	Pin lamp socket	1 (per light column)	Hardware store or 1000bulbs.com #CAGE-521WP

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## Parts List Footnotes

**1) Air pump** - We like these pumps from PETCO although similar models are out there. Get the 2-way (item 9902) or 4-way (item 9904) pumps to run multiple columns off a single pump, or get the one-way (item 9901) 13+ gallon pump for a single column windowfarm. The control dial allows you to dial down the pump frequency to save energy or to avoid over-saturating plants that like drier conditions. You can be a better farmer the more control you have. The best part is that the valves are included, which save money and time spent hunting.

**2) Check valve** - Comes with Petco pump OR use the Presta method and get any kind of check valves at an aquarium store. Warning: Some of the check valves that come with Petco pumps are duds. Also, for the sportscap method on page 27 you need the .8" diameter valve, not the .6" valve.

**3) Air line tubing** - Comes with Petco pump OR get it at an aquarium store.

**4) 1.5 liter bottles** - These bottles made by Nestle Waters work best because of their "waist." We're not playing favorites, it's just that other bottles take more work and supplies. This is one of those circumstances where being patient and collecting the right bottles will pay off over time for your plants and in three months you will thank yourself because you have less evaporation problems. Find these at your local gym, in the recycling bin at sports events and rest stops along highways. In lots of cities, there are folks who pull recycling out of trash cans. Offer one of them more money than they get per pound and you'll have a win-win!

**5) Sports drinking cap** - If you have enough working 0.8" PETCO valves, get these. Find a sports cap variety of one of the same brand bottles you got. They are all made by Nestle waters. Other caps will not fit these bottles in our experience.

**6) Presta threaded long stem bicycle inner tube** - Get a flat one from your local bicycle shop. Get this if you do not have the 0.8" diameter PETCO valves or if they don't work. You are only going to use the stem and the tip. The rest you throw away.

**7) Hydroton clay pellets** - These are a common hydroponic medium, not just any old rocks. They hold the right amount of nutrients and moisture around roots and prevent disease.

**8) Net cups** - You can punch a ton of holes in yogurt cups instead.

**9) Plant tape** - You can use regular tape too. But this stuff is also good for tying down vining plant stems and you can reuse it after you disassemble your system for cleaning.

**10) Maxsea All Purpose** - We encourage you to develop your own nutrient plan by researching your plants and participating in the community at [our.windowfarms.org](http://our.windowfarms.org). Here's an easy way to get started. This seaweed derived nutrient is for plants in the vegetative stage of all plants. Most green veggies where you eat the leaves and branches need this nutrient through harvest. You will need to buy larger quantities than you need due to a

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minimum order size.

**11) Maxsea Bloom** - This is an economical seaweed derived nutrient. You need this Bloom kind only when and if your plants bear flowers or fruit, like strawberries, beans, or edible flowers. You will need to buy larger quantities than you need due to a minimum order size.

**12) Grow cubes** - Plant your seeds in Dixie cups in this stuff and it is easy to transfer the delicate seedling roots into your windowfarm.

**16) White paint** - Must be suitable for plastic, e.g. primer.

**17) Metal Inflation Needle** - This MUST be threaded on the inside as well as the outside to work and not all brands have that feature.

**20) Cotton yarn** - This is the kind of material you find on a mop end but thinner.

**21) Flexible vinyl tubing** - Some kinds of tubing will kink at the bend at the top and prevent the water from flowing through. Try to find tubing that can bend sharply without kinking.

**22) Rigid tubing** - This is pretty essential to the reliable functioning of your windowfarm over time. You can try out other tubes but you probably will not get the height of pumping you need or you will have to refill your tank all the time. It's just all about the physics behind the pumping action.

**23) Bead chain** - You can use other materials like string to hang your windowfarm cheaper. This stuff is very modular and makes a great tube cleaner for algae buildup too.

**24) Bead chain couplers** - You will have to buy more than you need due to the minimum order quantity.

**26) Sealing washers** - You will have to buy a whole bag even though you only need two. There is a minimum order quantity.

**27) 1" hole saw** - Not all stores will carry this so call around. This is the safest hole saw to use for bottle drilling, which can be very dangerous with a traditional hole saw. Please see safety warnings. This bit will be supplied at a wholesale discount in windowfarms kits, if you cannot find it or it's too expensive at your store, consider opting for a windowfarms kit.

**29) CFL bulbs** - Most people need lights to supplement natural light from their windows because vegetable plants require a lot of light and if you grow off season, the days is not long enough in your window. Growlights need to produce at least 5500 kelvin light to be useful to adult and vegetable plants. Try to get plastic domes for these to protect them from shattering against the window. Domed bulbs are not yet available everywhere, but you can fashion something of your own!

**30) Clip light** - You don't need the shade, just the socket and cable.

**31) Pin socket** - You will have to buy more than you need due to the minimum order quantity.