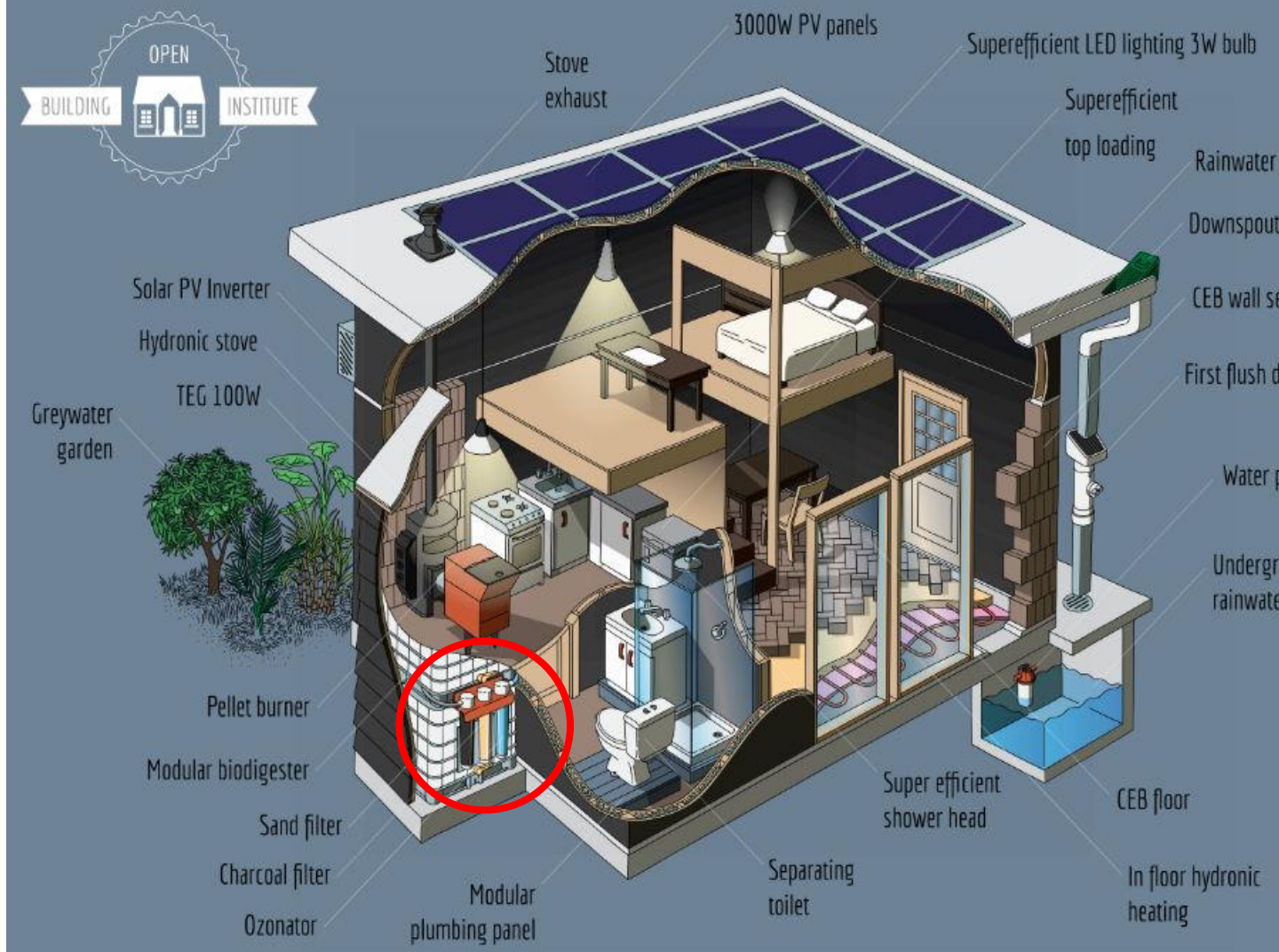


# Index

- [Requirements](#)
- [From Cistern to Purification](#)



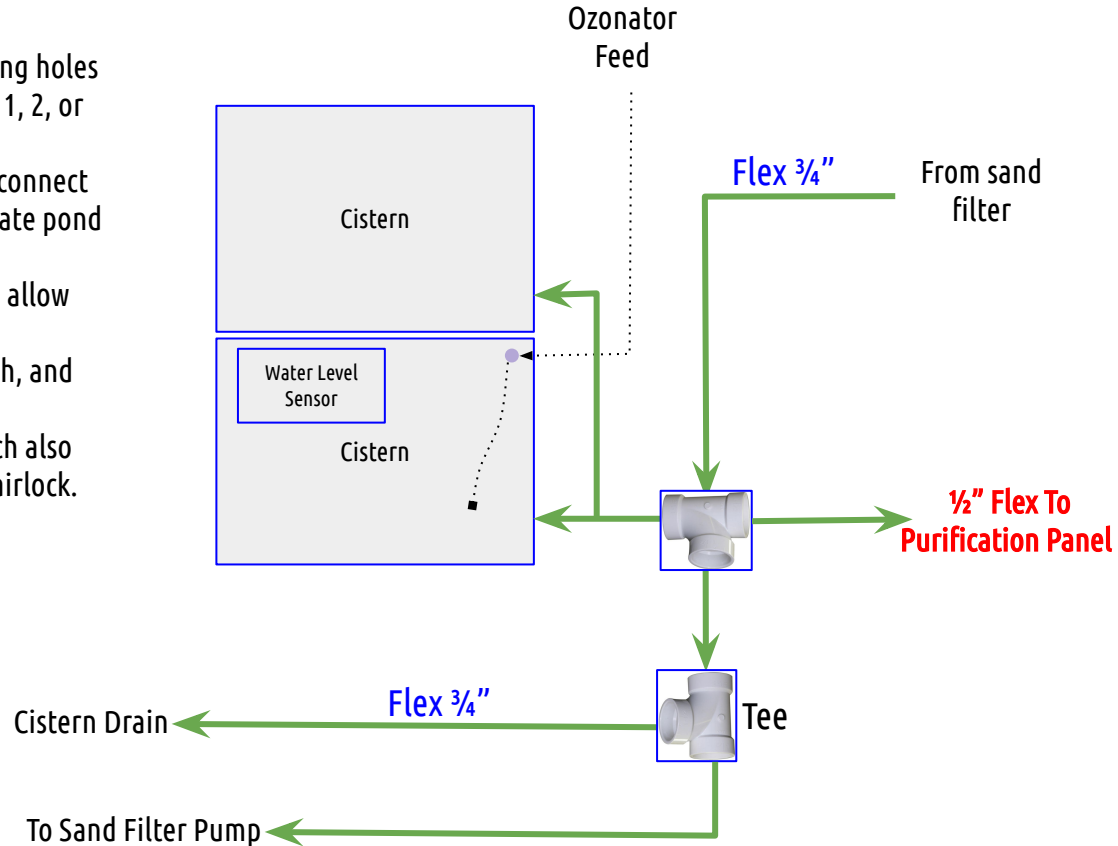
# Water Purification Panel Requirements

- Flow meter measures overall water usage
- Logging of water usage is done daily
- Toilet water and shower water does not pass through purification panel.
  - Bathroom and kitchen sink go through panel
  - Kitchen gets an ozonator system for drinking water, but not washing water
- First stage is rough filter, second stage is carbon for chemicals, ceramic filter is last
- Potable water outlet only gets ozone
- Pre-filter ozone occurs in cisterns

# Cistern Connection up to Water Panel: Design Rationale

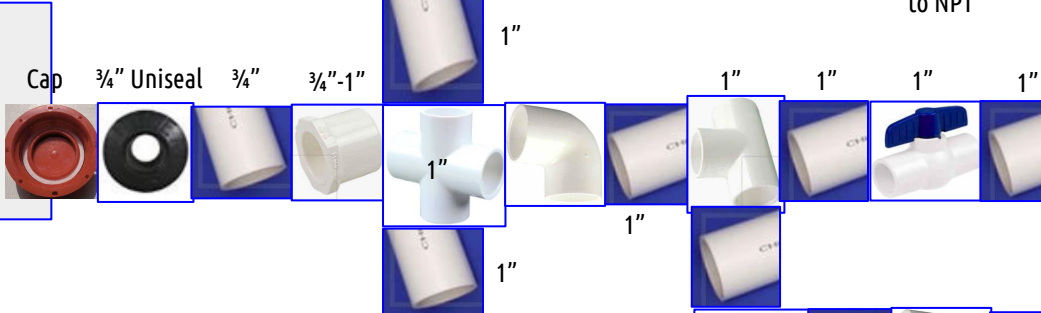
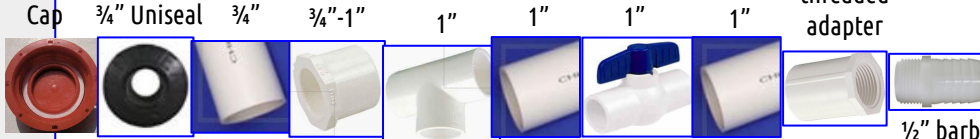
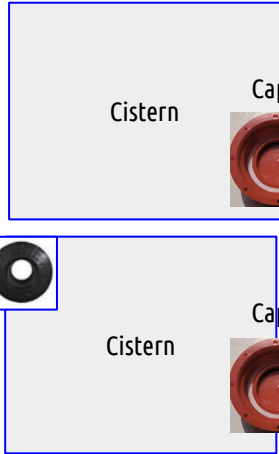
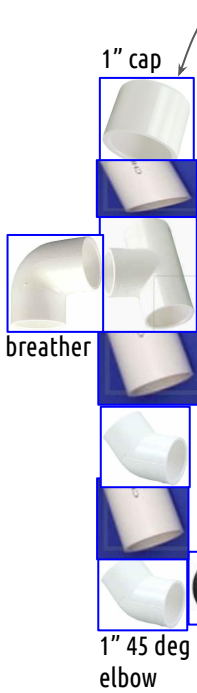
## Design Rationale:

- Connect 2 cisterns at their existing bungs to avoid poking holes
- Connect cisterns to each other to allow operation from 1, 2, or both cisterns at the same time
- Allow for non-contact water sensor on the cistern interconnect line to detect minimum allowable water level and activate pond pumping
- Bottom cistern has pond water inlet after sand filter to allow filling of both cisterns via one external connection
- Bottom cistern allows for drainage, sand filter backwash, and feed to the water purification panel
- Ozonator enters through a hole in bottom cistern, which also serves as a breather for the bottom cistern to prevent airlock.

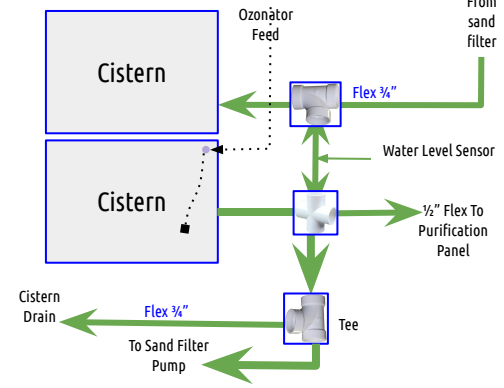
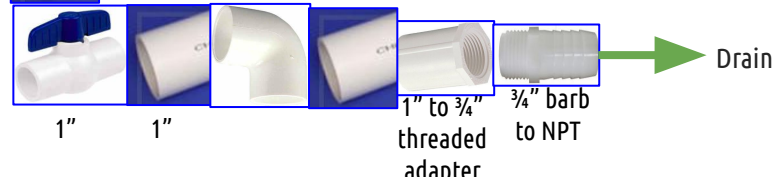
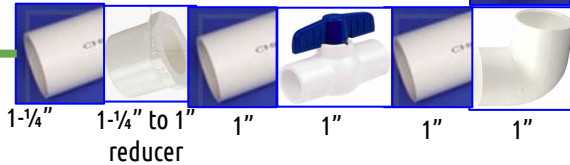


# Cisterns to Water Panel Detail

See [CAD of later design](#)



Sand Filter Backwash  
1-1/4" = 1.66 OD



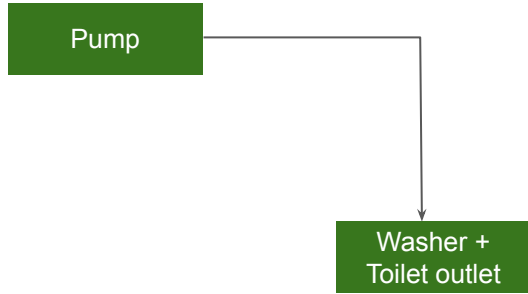
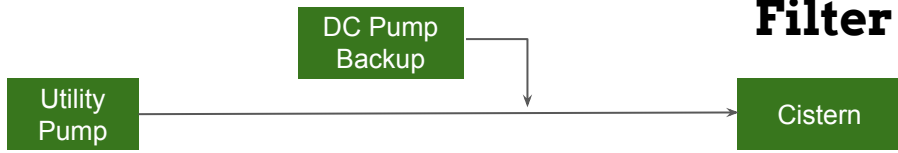
Sand Filter

1" to 1/2" threaded adapter

Purification Panel

Drain

# Filter Notes + Parts



1" \$54  
500 mesh  
25 microns  
3x5x15 inch

1" \$54  
1000 Mesh  
13 microns  
3x5x15 inch

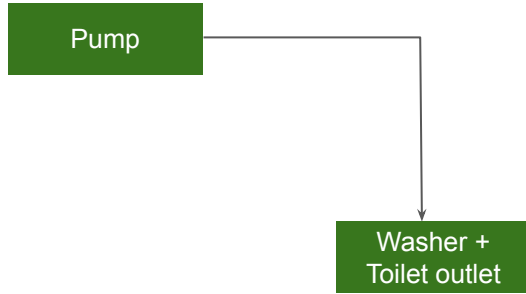
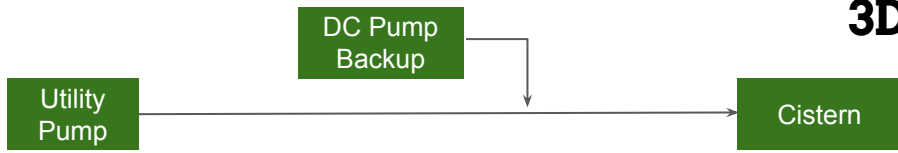


Ball Valve

Isolation for cleaning  
ceramic filter



# 3D Printing



1" \$54  
500 mesh  
25 microns  
3x5x15 inch

1" \$54  
1000 Mesh  
13 microns  
3x5x15 inch



Ball Valve

Isolation for cleaning  
ceramic filter



# Ebay

## shower



Solar DC 12V 24V Motor Water Pump  
( 302071492075 )

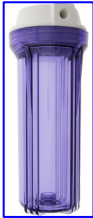
Add note



New RV / Marine 24 Volt DC Diaphragm Self Priming PUM  
( 161045205336 )

Quantity: 3

Add note



4



1/2" Hall Effect Flowmeter  
Arduino \*REAL US SELLE  
( 181562348669 )

Delivered on Wed, May 3  
Tracking number: [94001118](#)



# Amazon



Order details | Ordered on January 17, 2017 (2 items)

Universal 10 inch Carbon Block filter cartridge for Whole House Filter - 5 micron (NSF 42 Certified) (3)

Water Filter Tree

Sold by: Filter Deity



Order details | Ordered on October 31, 2016 (1 item)

Sand Master Soft Sided Above Ground Pool Sand Filter System

Sand master

Sold by: In The Swim Pool Supplies



Order details | Ordered on October 31, 2016 (5 items)

Doulton W9220406 Imperial Sterasyl OBE Ceramic Filter

Doulton

Sold by: Amazon.com LLC



Order details | Ordered on October 31, 2016 (5 items)

Purenex 1M-4PK 1-Micron Sediment Water Filter Cartridge, 4-Pack

Purenex

Sold by: EZbuy365



Order details | Ordered on October 31, 2016 (5 items)

KX Matrikx 01-250-125-975 High Capacity Chemical, Chlorine Taste and Odor Reduction Filter, 10-Inch

KX Matrikx

Sold by: Amazon.com LLC



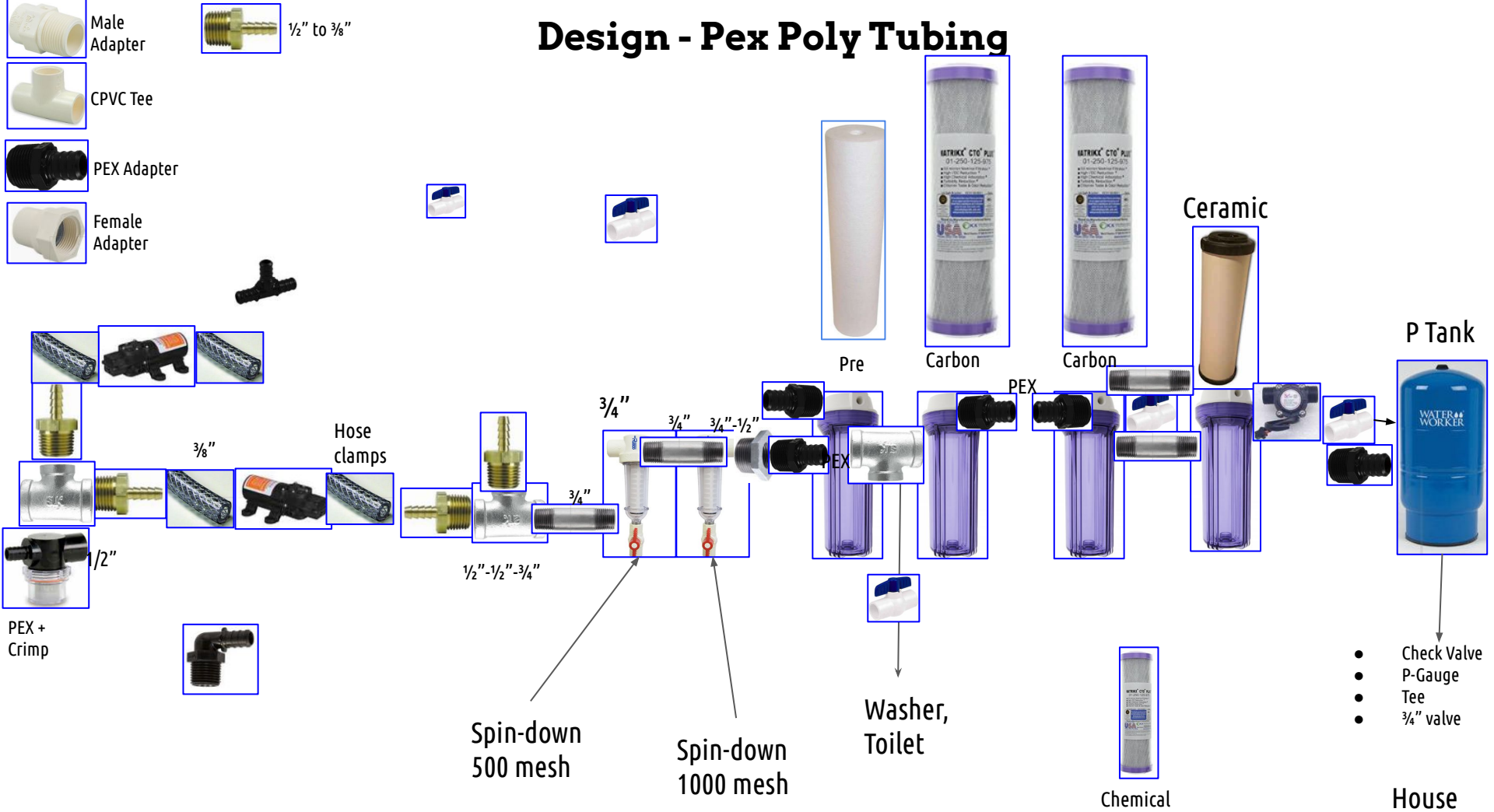
Order details | Ordered on October 31, 2016 (5 items)

Purenex 5M-4PK 5-Micron Sediment Water Filter Cartridge, 4-Pack

Purenex

Sold by: FILTERWAY

# Design - Pex Poly Tubing





# BOM

- Strainer - does PEX fit on it? Try heat + crimp
- P-Gauge
- afd