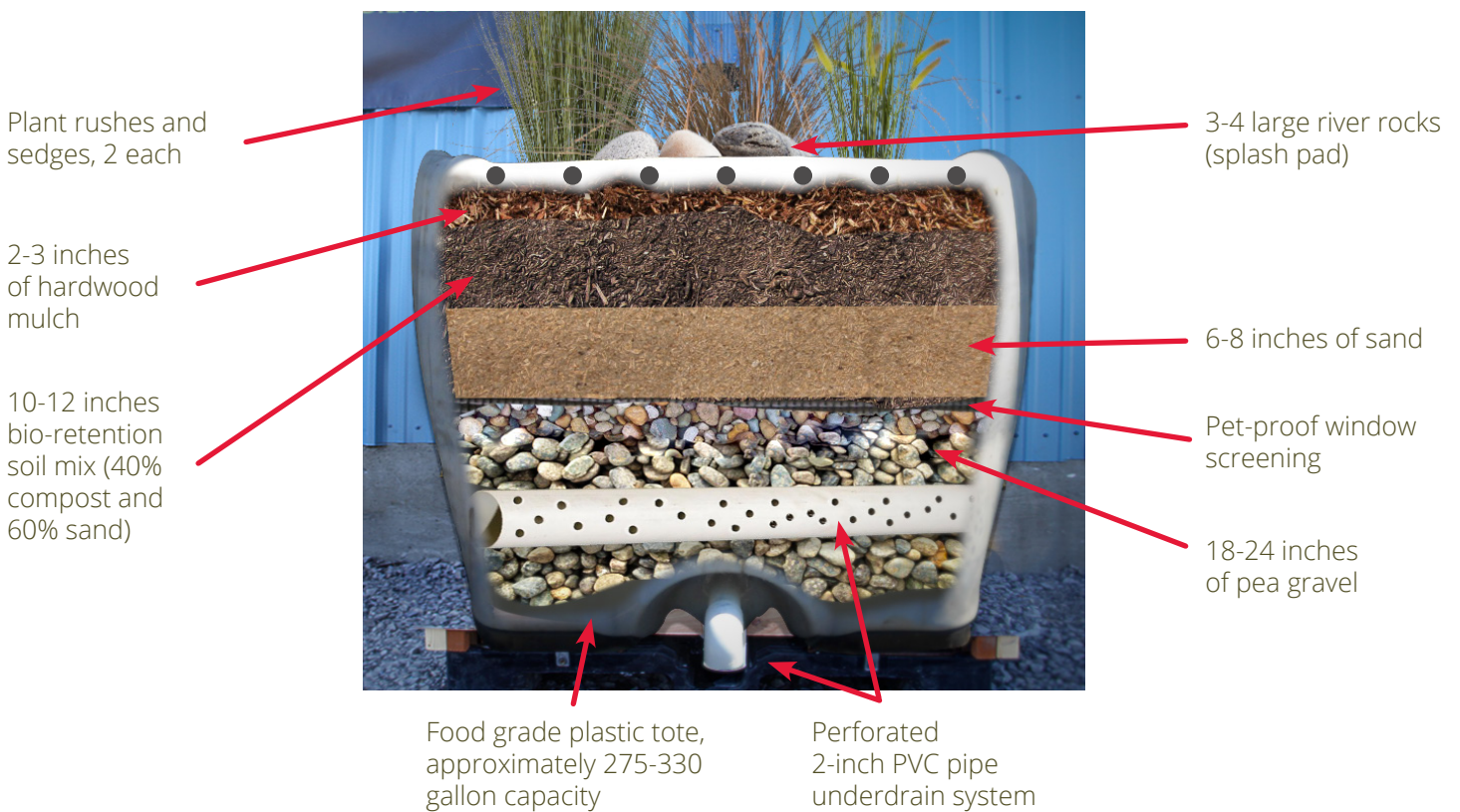


Grattix

Downspout/Roof Runoff Treatment System

Two talented port employees invented what is basically a rain garden in a box. It's an innovative system that removes zinc pollution in stormwater from galvanized metal roofs and downspouts on the terminal. Matt Graves and Mary Mattix, both members of the port's environmental team, call the stormwater treatment system the Grattix (a combination of their last names), but many others in the environmental world are calling it innovative, inexpensive, and effective.

Cross Section of a Grattix



The Grattix is built using a food grade plastic tote, ranging in size from 275-330 gallons. Inside, an optional, perforated underdrain system is installed, followed by a layer of pea gravel. A layer of screen is added to maintain a separation between layers. Sand is then added followed by a bioretention soil mix. Drill $\frac{1}{2}$ inch holes along the back side of the tote about 2 inches from top of the tote for overflow. The finishing touches include adding plantings, a river rock splash pad and hardwood mulch. The plantings used are rushes and sedges (Columbia Slough Sedge and Common Rush have shown the most success), which can dry out in the summer months and withstand ponding in the winter months.

If you have any questions about the Grattix or stormwater protection at the port, please contact Matt Graves at 360-693-3611 or mgraves@portvanusa.com.

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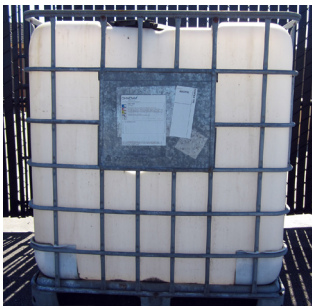


Port of Vancouver USA

portvanusa.com

Building a Grattix

A 10-STEP GUIDE TO CONSTRUCTING YOUR OWN RAIN GARDEN IN A BOX



STEP 1

Obtain a food grade plastic tote, approximately 275-330 gallon capacity. Cut the top off at the curve of the plastic



STEP 6

Then add 10-12 inches of bio-retention soil mix (40 percent compost and 60 percent sand). Do not use compost that contains recycled yard debris.



STEP 2

Optional - Install a perforated 2-inch PVC pipe underdrain system. Otherwise utilize existing valve on tote



STEP 7

Plant rushes and sedges, 2 each, and then place 2-3 inches of hardwood mulch around plants. Position 3-4 large river rocks to create a splash pad.



STEP 3

Add 18-24 inches of pea gravel, double-washed to prevent turbidity/clogging.



STEP 8

Drill 8-10, ½ inch holes along back side of tote about 2 inches from top of tote for overflow.



STEP 4

Place a layer of pet-proof window screening.



STEP 9

Optional - For a more finished look, add a wooden exterior or wrap to protect the unit from UV rays.



STEP 5

On top of the screening, add 6-8 inches of sand. Double washed to prevent turbidity and clogging.



STEP 10

Position your Grattix under a down spout.