

Using Biofilters for Odor Control

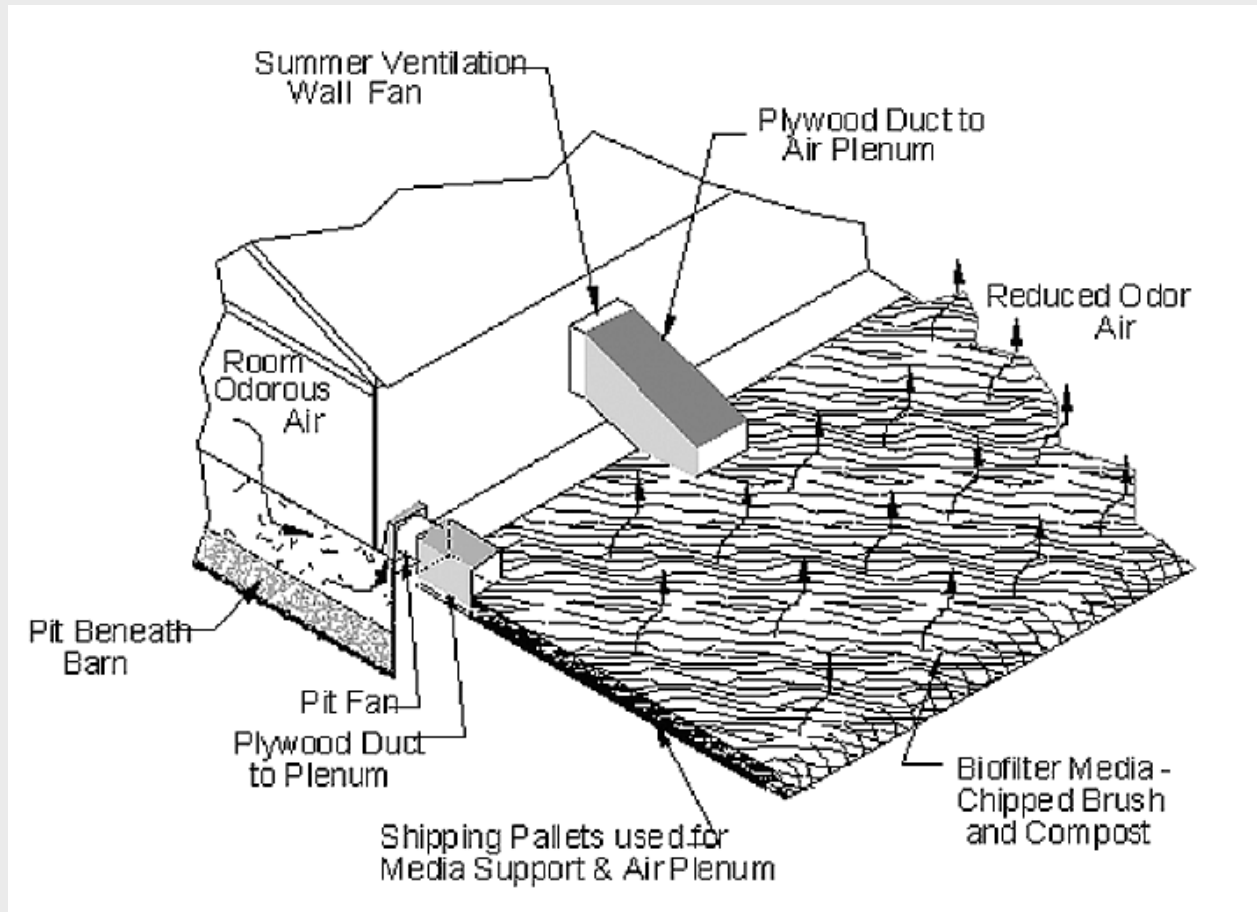
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Biofilter

- A biofilter is a bed of organic material which supports microbes that break down odorous gases
 - Converted to carbon dioxide and water
- Used on buildings with exhaust fans
- 80-95% odor reduction of air through biofilter
 - During warm weather some air usually bypasses the biofilter

Schematic of a typical open-bed biofilter



South Dakota State University

Two main types of biofilter



Vertical biofilter

Open-bed biofilter

Biofilter Specifications

- Cost
 - \$150 to \$250 per 1,000 cfm
- Size determined by:
 - Airflow rate to be treated
 - Depth of material
- Site
 - Well drained
 - Close to fans to minimize ducting
 - Consider use of pump-outs and area occupied
- Bed material
 - Porous (50-60% voids to maintain airflow)
 - Structure (last longer)
 - Wood chips are commonly used
- Ducting
 - Minimize restriction
 - Smooth and resistant to rotting or corrosion
- Fans
 - Ability to push air from the building through the biofilter
 - Shutters to prevent back drafting

Biofilter Maintenance

- Moisture control
 - Sprinkle with water during hot, dry periods
 - No moisture is needed during winter
- Weed and rodent control
- Annual cost: \$5-10 per 1,000 cfm
- Filter material lasts 5-8 years or longer
 - Old material can be used like compost