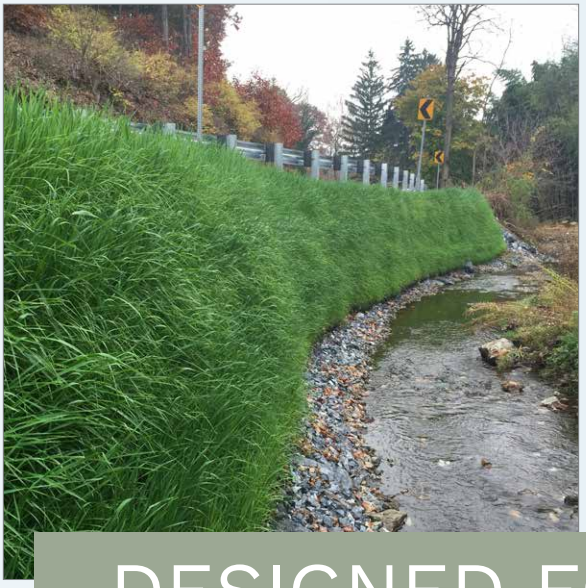
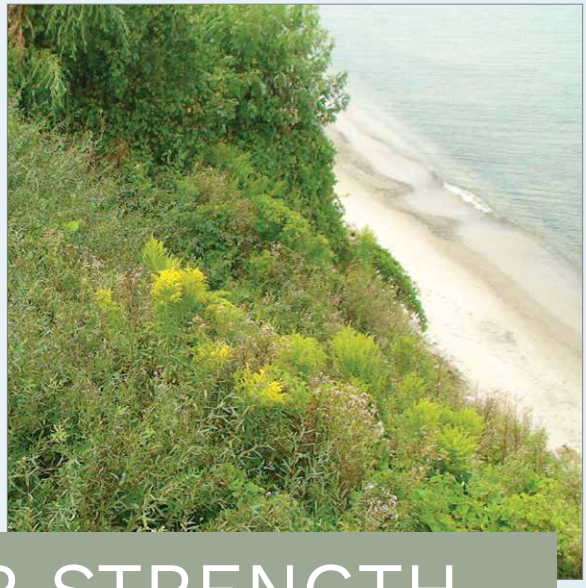
filtrexx®
SUSTAINABLE TECHNOLOGIES

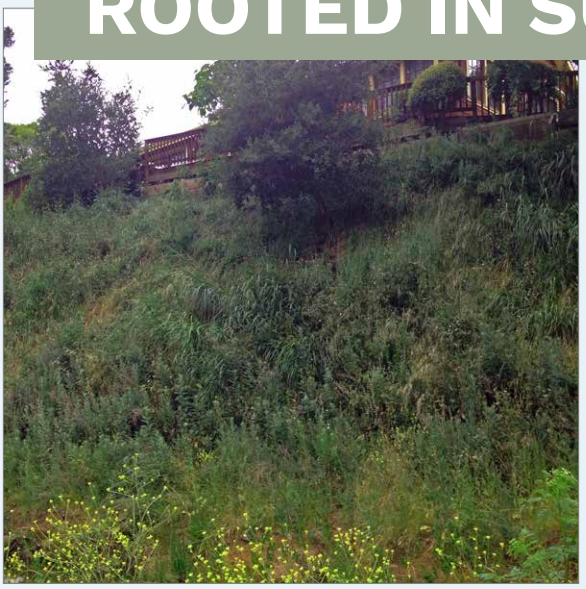
GREENLOXX®

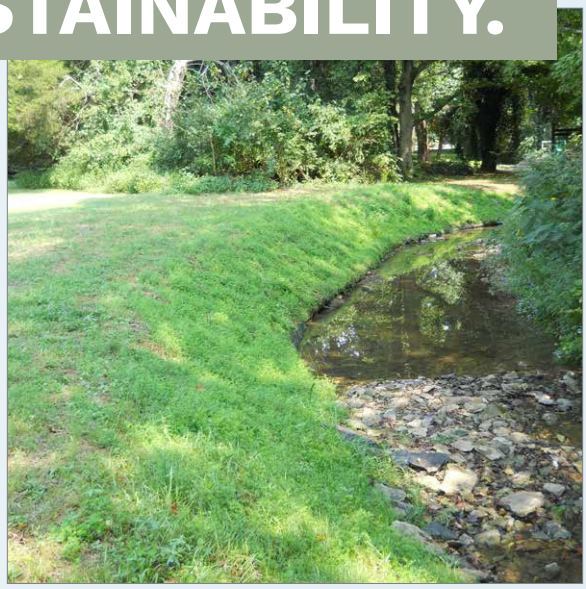
VEGETATED WALL & SLOPE SYSTEMS





DESIGNED FOR STRENGTH.
ROOTED IN SUSTAINABILITY.





GreenLoxx® vegetated systems allow for the restoration of eroded or damaged slopes, riparian waterways, shoreline banks, and more.

Create attractive, naturally vegetated landscapes without the use of hard concrete materials on your restoration projects.

GREENLOXX SYSTEM COMPARISON

System Name	MSE	Slope Degree	Anchors	FLW Geogrid	GroSoxx® Size	Purpose
GreenLoxx VSF Vegetated Slope Facing	No	up to 60°	Yes	Yes	8″x3′	Protect slope surface from erosion
GreenLoxx MSE Mechanically Stabilized Earth	Yes	70° - 90°	No	Yes	12″x2′	Gain back land
GreenLoxx MSE - RSS Reinforced Soil Slope	Yes	50° - 70°	No	Yes	12″x2′	Gain back land

GREENLOXX COMPONENTS

GroSoxx: Durable mesh is filled with Certified GrowingMedia™ as the basis to quickly establish vegetation.

FLW Geogrid: Used to wrap layers of GroSoxx. Biaxial pattern provides strength and features a 2″x2″ opening to eliminate cutting the grid for planting.

Soil Anchors: Used in GreenLoxx VSF to secure layers of geogrid and GroSoxx.

Vegetation: Options include pre-seeded GroSoxx, live staking, broadcast seeding, or plugs.


GROSOXX


GEOGRID + ANCHORS

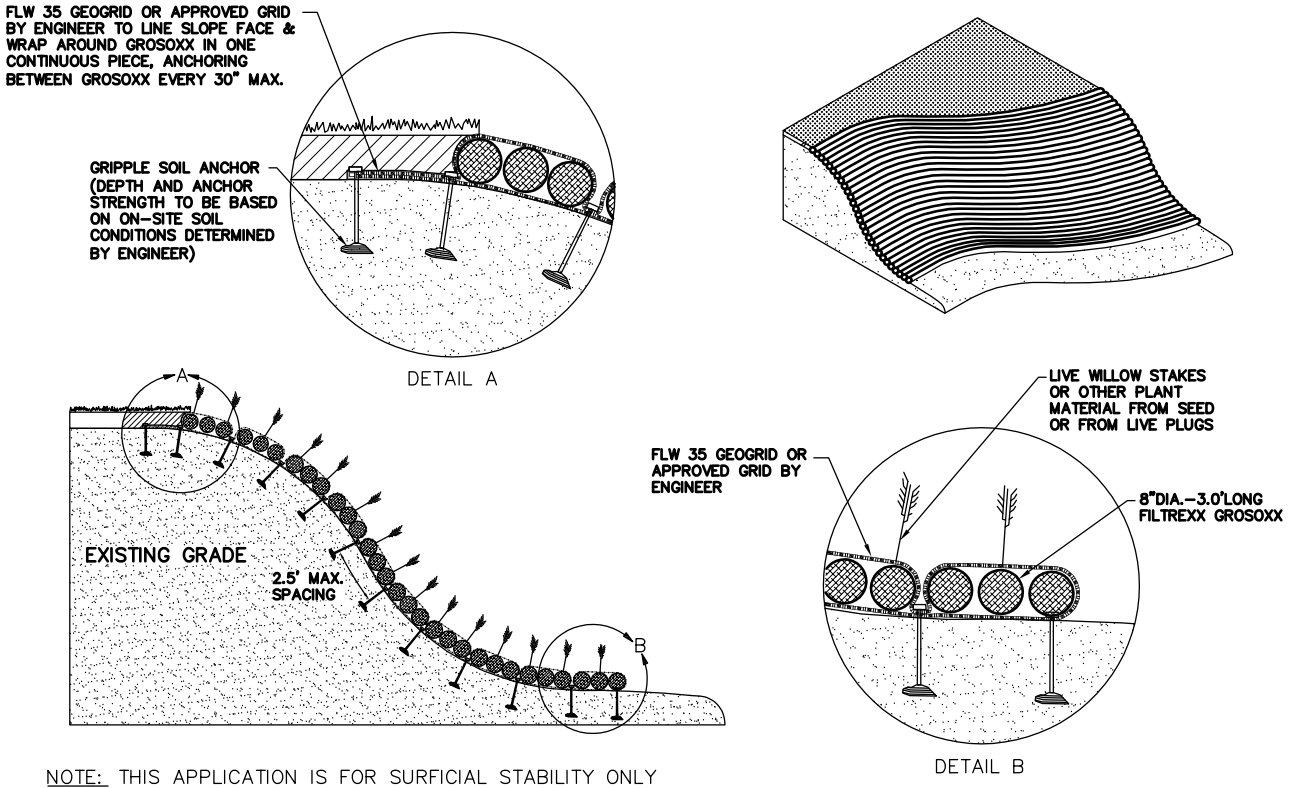
GroSoxx is the basis of GreenLoxx systems for quickly establishing vegetation on shorelines, banks, walls, and slopes. GroSoxx uses Durable mesh, filled with certified, composted GrowingMedia™ to provide a stable and fertile environment for plant growth. The use of GroSoxx for wall infill speeds construction, eliminates waste, prevents weeds from taking root, and offers a safer installation process. Available pre-seeded throughout, or plant after construction is complete. GroSoxx provides the highest amount of facial growing material in each application, maximizing environmental benefits.

Vegetation Options

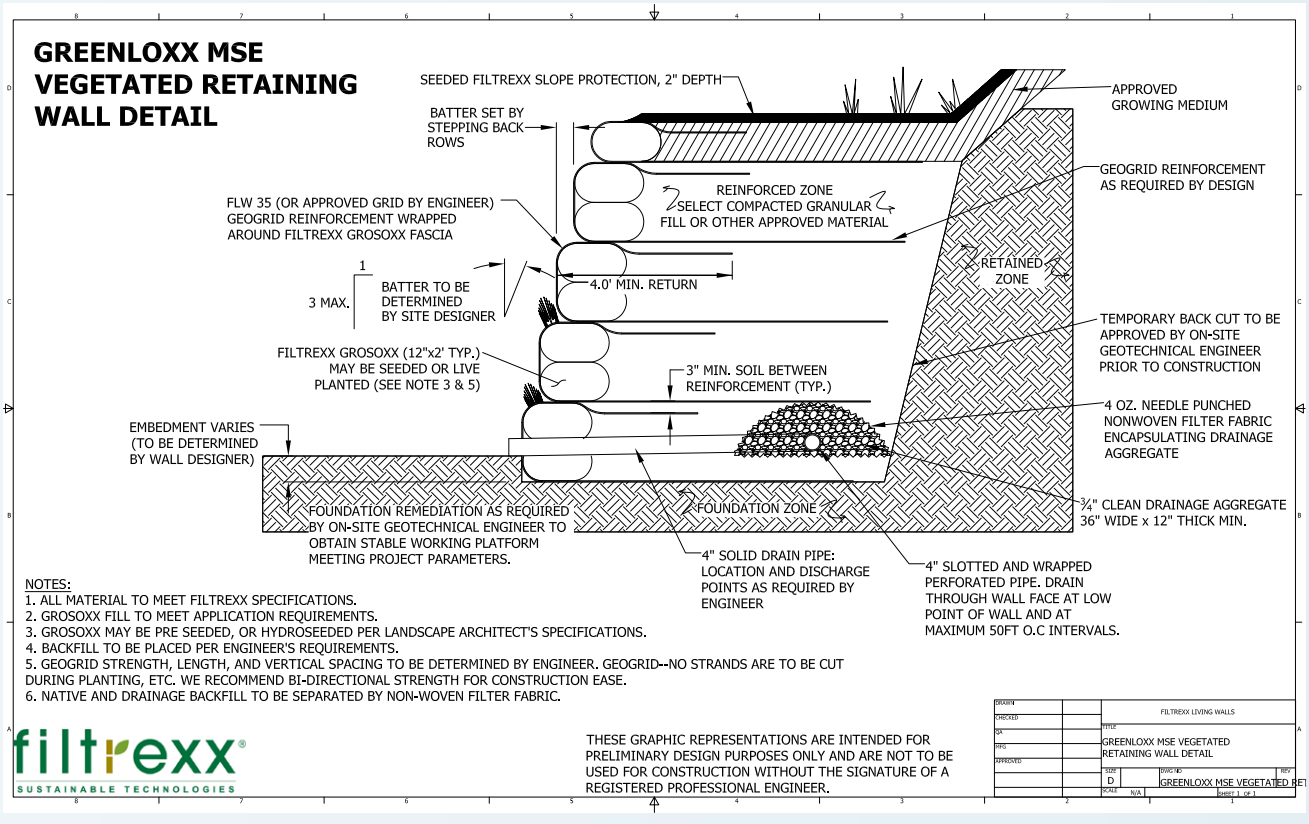
- Grasses, including natives
- Vines and ground cover
- Wildflowers
- Perennials and annuals
- Woody vegetation from live stakes or pots (2″ diameter or less so that grids are not cut in planting)

DESIGN DRAWINGS

Refer to Design Specifications and CADs for complete application, design, installation, and maintenance documentation at **www.filtrexx.com/specs**



filtrexx SUSTAINABLE TECHNOLOGIES	**These graphic representations are intended for preliminary design purposes only and are not to be used for construction without the signature of a registered professional engineer.**	**SCALE: NONE**	**GREENLOXX VEGETATED SLOPE FACING DETAIL (STYLE 1)**



NOTES:
1. ALL MATERIAL TO MEET FILTREXX SPECIFICATIONS.
2. GROSOXX FILL TO MEET APPLICATION REQUIREMENTS.
3. GROSOXX MAY BE PRE SEEDED, OR HYDROSEEDED PER LANDSCAPE ARCHITECT'S SPECIFICATIONS.
4. BACKFILL TO BE PLACED PER ENGINEER'S REQUIREMENTS.
5. GEOGRID STRENGTH, LENGTH, AND VERTICAL SPACING TO BE DETERMINED BY ENGINEER. GEOGRID--NO STRANDS ARE TO BE CUT DURING PLANTING, ETC. WE RECOMMEND BI-DIRECTIONAL STRENGTH FOR CONSTRUCTION EASE.
6. NATIVE AND DRAINAGE BACKFILL TO BE SEPARATED BY NON-WOVEN FILTER FABRIC.

filtrexx SUSTAINABLE TECHNOLOGIES

THESE GRAPHIC REPRESENTATIONS ARE INTENDED FOR PRELIMINARY DESIGN PURPOSES ONLY AND ARE NOT TO BE USED FOR CONSTRUCTION WITHOUT THE SIGNATURE OF A REGISTERED PROFESSIONAL ENGINEER.

FILTREXX LIVING WALLS
GREENLOXX MSE VEGETATED RETAINING WALL DETAIL
SIZE D
GREENLOXX MSE VEGETATED RET
SCALE N/A
SHEET 1 OF 1

GREENLOXX VEGETATED SLOPE FACING (VSF)


BEFORE

GreenLoxx VSF is typically used to protect the face of the slope or bank from erosion. Requires minimal base preparation/excavation, and no backfill. FLW Geogrid is wrapped over the GroSoxx and secured with soil anchors.

- Lightweight components
- Immediate protection from toe cutting & sloughing
- Establish and reinforce vegetation under intense hydraulic pressure
- Drains freely, less hydrostatic pressure

Project location: Lake Erie shoreline, Rocky River, OH


INSTALLATION


AFTER, 4 MONTHS


AFTER, 1 YEAR

GREENLOXX MECHANICALLY STABILIZED EARTH (MSE)


BEFORE

GreenLoxx MSE is typically used to build a more vertical, structural wall. GroSoxx are stacked in courses wrapped in FLW Geogrid and tied back into the compacted fill behind the face of the wall.

Note: For slopes from 50° - 70°, the GreenLoxx MSE Vegetated Retaining Wall - Reinforced Soil Slope (RSS) alternate design is used.

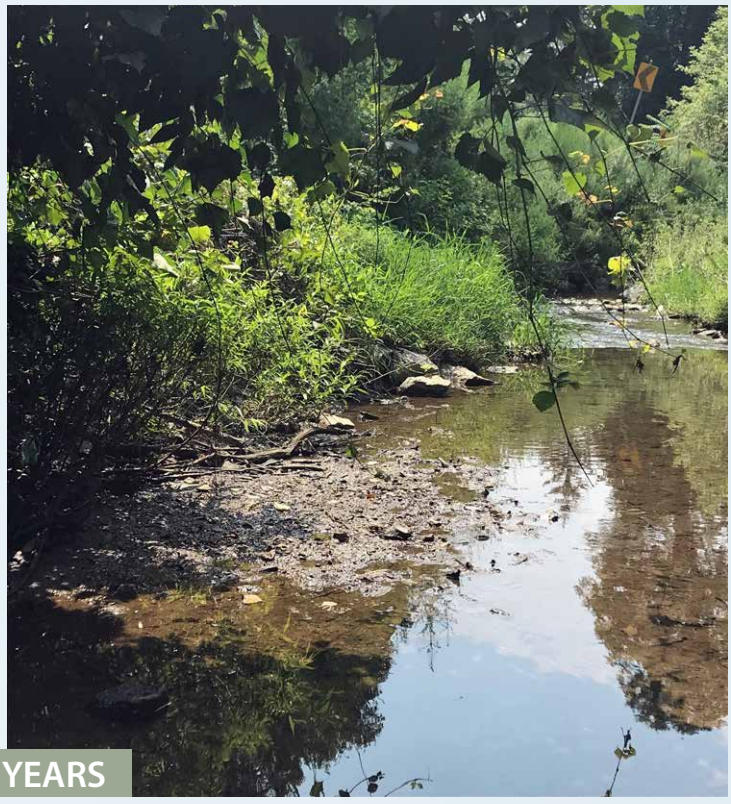
- Lightweight components
- Withstands high flow velocities—ideal for sensitive riparian areas
- Safer & more flexible installation than block walls

Project location: Roadway along Spring Creek, Harrisburg, PA


INSTALLATION


AFTER, 2 MONTHS


AFTER, 3 YEARS



SUSTAINABILITY BENEFITS

Our compost-based GreenLoxx systems are designed for environmental benefits and can have a significant impact on your project's sustainability.

Vegetated Wall & Slope Benefits[1]

- Reduction of the Urban Heat Island Effect
- Improved Exterior Air Quality
- Noise Reduction
- Increased Green Space, Biodiversity and Habitat
- Forage for Native Pollinators
- Urban Agriculture
- On-Site Wastewater Treatment
- Improved Health and Well-Being
- Aesthetic Improvements
- Local Job Creation

Carbon Footprint Reduction[2]

There are three key ways in which compost-based GreenLoxx systems can significantly lower a site's carbon footprint:

- Methane avoidance resulting from diverting organics from landfills
- Carbon sequestration by permanent vegetation
- Carbon sequestration by storing carbon in the soil

This GreenLoxx MSE project on the Chattahoochee River has the following impact:

- 656,000 lbs of Organics Diverted from Landfills
- 1,148,000 lbs of CO_2e Methane Avoidance
- 205 lbs of CO_2 Sequestered in Vegetation
- 110,700 lbs of CO_2 Sequestered in Soil

This is the equivalent of offsetting the greenhouse gas emissions of 121 passenger vehicles driven for one year.[2]

Treating Stormwater Runoff[2]

With approximately 50% organic matter, a high porosity, and high relative surface area, compost has the ability to absorb significant volumes of water.

This GreenLoxx MSE project, restoring a bluff on Lake Michigan, not only provides habitat and beauty, it can also absorb significant amounts of stormwater. Each linear ft of 12-in GroSoxx (1 square foot) can absorb up to 4 gallons of water. Utilizing 2,000 ft of 12-in GroSoxx, this wall has the potential to absorb up to 8,000 gallons of rainfall per event.[2]

In other applications, replacing a traditional concrete block wall with a permeable GreenLoxx system on a site with a stormwater retention basin or bioretention system, may allow engineering and construction of a smaller stormwater retention basin or bioretention system, and/or increased absorption of area rainfall, and may also contribute to LEED Green Building Credits.

Filtrexx Environmental Sustainability Benefits

Filtrexx GroSoxx® uses **locally recycled organic materials** inside of photodegradable or biodegradable mesh. Diverting these organic materials from landfills and applying them to the soil means a reduction in greenhouse gas emissions. **For every 1,000' of 12" GroSoxx used, 160,000 lbs of organic materials are diverted and your carbon footprint is reduced by 307,000 lbs CO_2e.** This is the equivalent of offsetting the greenhouse gas emissions of **29 passenger vehicles** driven for one year. In addition, the potential water absorption equals up to **4,000 gallons, per rainfall event**.[2]

Sources: [1]Green Roofs for Healthy Cities, "About Green Walls". [2]Filtrexx TechLink Research Summary #3335.

PROJECT PROFILE: STREAMBANK RESTORATION

Columbia, SC

A Richland County stream had heavily eroded banks, and residents had begun voicing concerns to the County about the loss of land. Richland County took on the project in order to restore the lost real estate. The engineer originally proposed using turf reinforcement mats, but that would have meant taking away even more land to create the necessary slope angle. "The County was looking for a design that would allow for the streambanks to be built back up quickly, almost vertically in some locations, and a design that would also look very natural," said Allison Steele, Stormwater Engineer for Richland County. "The whole point of the project was to give them their yards back." Engineering firm CDM Smith decided to use the GreenLoxx system, not only for its verticality, but also for its ease of installation in a forested environment. The GroSoxx used in the GreenLoxx system mold to fit around trees, eliminating the need to clear cut. Filtrexx® Certified℠ Installers Eco-FX, Inc. (Charlotte, NC) and Coogler Construction, Inc. (Ballentine, SC) teamed up for the custom installation. Together they installed approximately 600 feet of streambank, and the work was completed in about two weeks. GreenLoxx can be installed with or without mechanical reinforcement—this project used both. The GroSoxx were pre-seeded with an annual cover crop. The team returned in spring to plant several hundred native plants for permanent stabilization.

BEFORE

INSTALLATION

AFTER

Use GreenLoxx Systems for a variety of applications and industries

PROMOTES GROWTH

APPLICATIONS

- STREAMBANKS
- STEEP SLOPES
- SHORELINES
- RETAINING WALLS
- ROADSIDE SLOPES

INDUSTRIES

- MUNICIPALITIES
- RESIDENTIAL/HOA
- LANDSCAPING
- CONSERVATION DISTRICTS

Contact Filtrexx for availability and system packages.

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