



**Real Estate &
Sustainable Soil Management**

moderated by: Ron Alexander, R. Alexander Associates Inc.
& Matt de la Houssaye, Global Green

Tuesday, September 12, 2017

1:00 - 2:00 pm et/10:00 - 11:00 am pt

Moderated Discussion “Focus Group”

Participants include:

City of Atlanta

Calrecycle

Georgia World Congress Center

NYC Dept of Sanitation

Elemental Impact

Onondaga County

GreenBlue

Cornell University

New Jersey DEP

County of Kane, Illinois

Syracuse University

Association of Compost Producers

Draper Aden Associates

City of Toronto

City of Los Angeles

Tennessee Department of Environment &

Conservation

Filtrexx



Sustainable Soil Management & Real Estate

How can it work (in real estate construction and operation)?

What are the benefits?

What's the current status and adoption?

What's are the opportunities, and what is possible?

Why Use Compost?

Benefits include:

Construction Cost Savings (Soil + Transport Costs)

Maintenance / Operational Cost Savings (Avoided Water, Fertilizer and Plant Costs)

Stormwater management (private sector compliance & public sector concern)

Environmental Benefits (Carbon sequestration, soil protection)

Compost can be utilized in many ways to enhance LEED, Sustainable SITES and Eco-District projects.

- 1 REDUCES VOLUME OF RUNOFF & REDUCES OUTDOOR WATER USE
- 2 CONTROLS AND RETAINS CONSTRUCTION POLLUTANTS
- 3 RESTORES SOIL DISTURBED DURING CONSTRUCTION
- 4 RESTORES LAND AND ECOSYSTEMS
- 5 HELPS TO MAINTAIN VEGETATION REQUIREMENTS
- 6 SERVES AS A GREEN ROOF GROWING MEDIUM
- 7 TREATS STORMWATER VIA BIOFILTRATION
- 8 GROWING MEDIUM & SUPPORTS LOCAL FOOD PRODUCTION

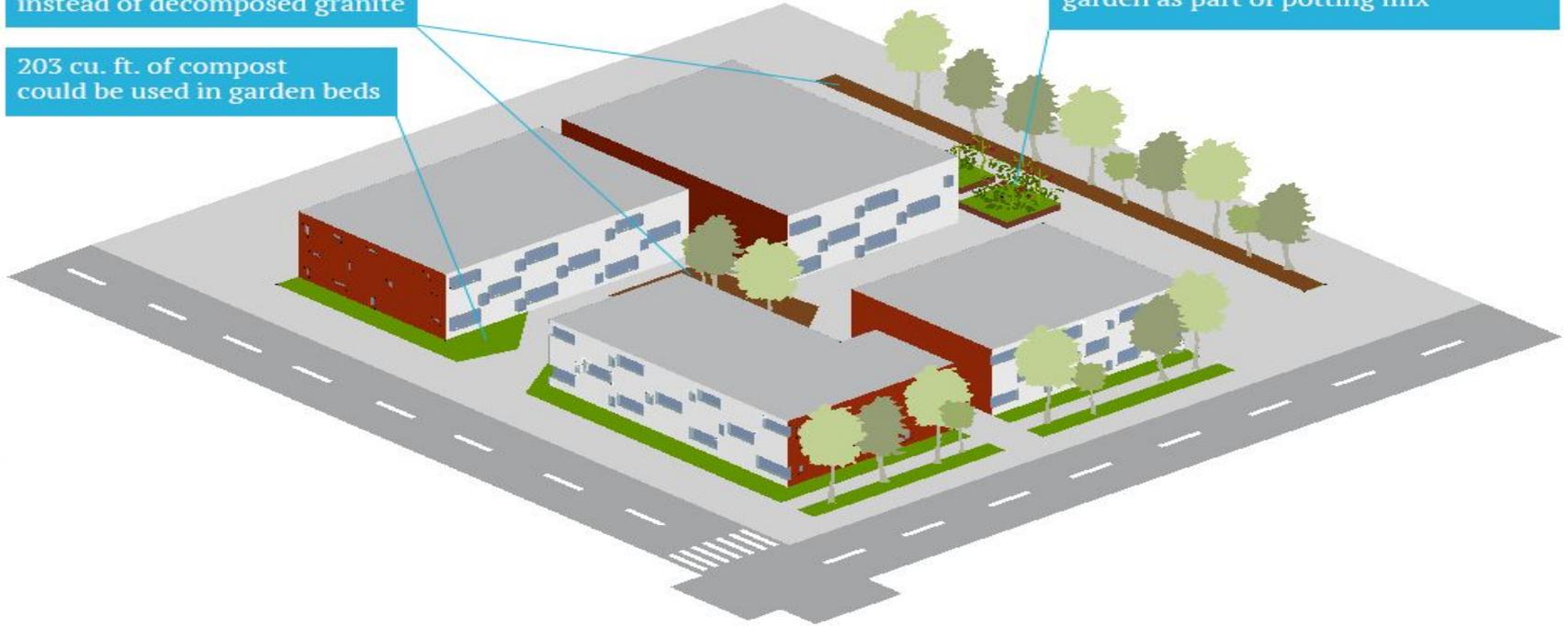


Urban Sites / Compost Use: More than you think

432 cu. ft. of mulch
instead of decomposed granite

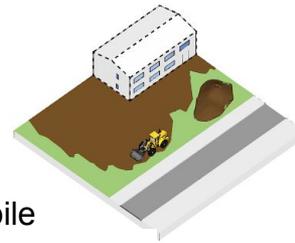
203 cu. ft. of compost
could be used in garden beds

72 cu. ft. of compost in the community
garden as part of potting mix

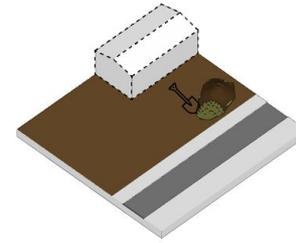


How is Compost Used in Construction?

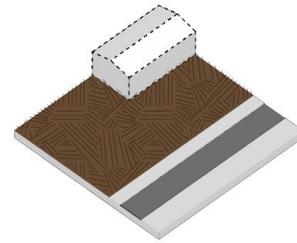
stockpile



Pile

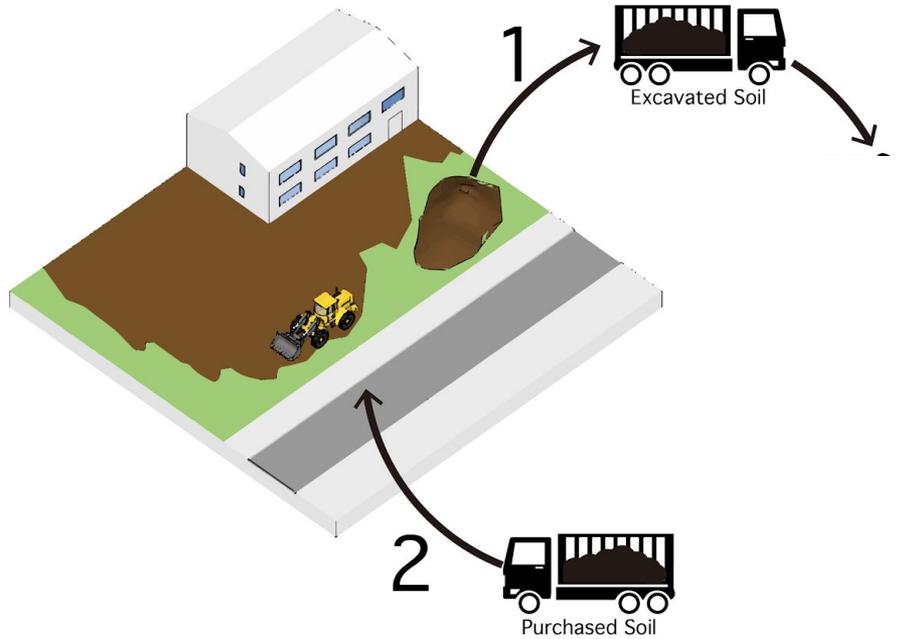


Blend

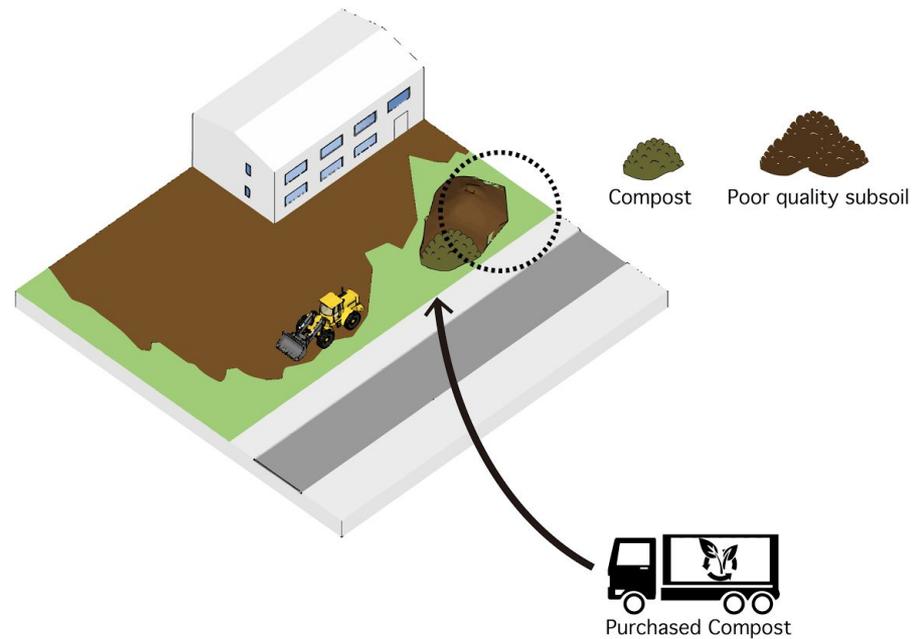


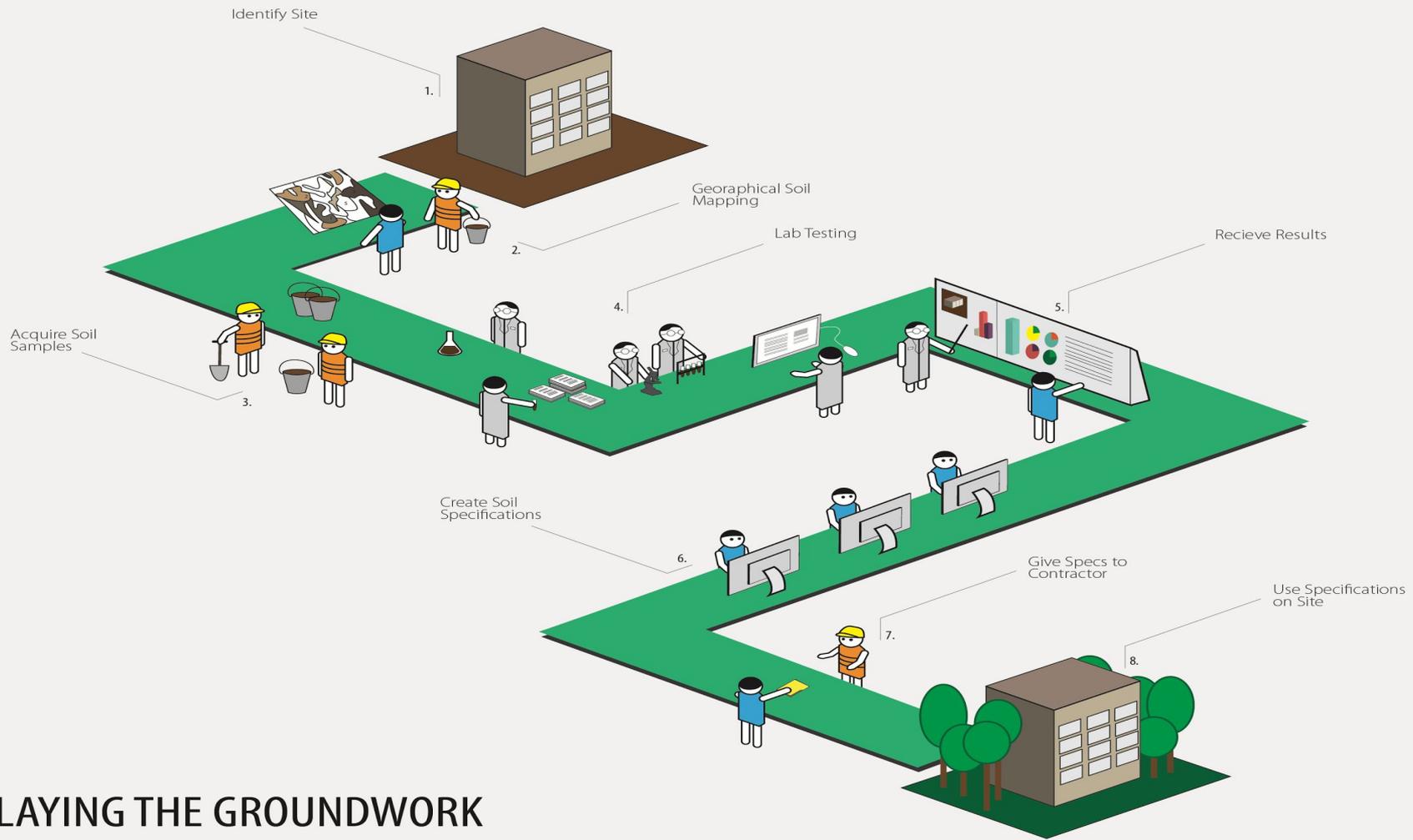
Spread

CONVENTIONAL PRACTICE



TOPSOIL MANUFACTURING WITH COMPOST





LAYING THE GROUNDWORK

Cost Savings from Topsoil Manufacturing

Option 1 Compost application	Option 2 "Top Soil" application
<p>Install 2" of compost and amend into 6" of existing soil</p> <p>Compost required: approximately 31 CY</p> <p>Unit price to install and amend compost would be anywhere from \$40-\$45 per CY installed</p>	<p>Install 6" of topsoil Topsoil required approximately 93 CY</p> <p>Unit price would be anywhere from \$30-\$35 per CY installed</p>
Total Cost: \$1,318	Total Cost: \$3,022

Option 1 Compost application	Option 2 "Top Soil" application
<p>Compost materials \$25/yard x 31 yards = \$775 + delivery \$280 = \$1,055</p> <p>Compost application, incorporated in the soil, rough grade \$2/sq foot = \$10,000</p>	<p>"Top soil" application to existing soil: \$34/yard (retail) x 93 CY = \$3,162 + \$680 (consult on trucking fees for actual value)</p> <p>Application of materials with landscape equipment: \$3.15/sq foot = \$15,750</p>
Total: \$11,055	Total: \$19,592

How can compost be used in maintenance & landscaping?

Establishing a Landscaping Plan

Compost Applications

1 General Soil Amending, Turf /Planting Bed Preparation:

Use compost to establish grass, annual and perennial flower beds, vegetable gardens, shrubs and any place that requires good soil.

General instructions:

1. Break up the soil in the area to be planted. Cultivate to 6 to 8-inches of depth.
2. Add 1 to 3-inches of compost and mix well with the existing soil.
3. Plant desired plants and seeds (e.g., grass seed, sod, flowers, bedding plants, etc.) and be sure to water well.

Use lower application rates when using composts containing higher nutrient contents and when establishing plants requiring less nutrients. Community gardens may be established using this same method.



Figure 5: Soil amending



Figure 6: 1424 Broadway Community Garden

2 Trees and Shrub Planting:

It is always desirable to do general soil amending, as described above, but that may not always be practical when planting a few shrubs or trees. In such cases, compost can be used as part of a backfill mix and still provide your plants with an excellent growing medium.

General instructions:

1. Dig a hole to the approximate depth of the root ball and two to three times as wide.
2. Mix 1 part compost with two to three parts of the soil removed while preparing the planting hole.
3. Insert plant, backfill with the compost /soil mix and water well.

3 Indoor and Outdoor Pots and Planters:

Mix 1 part compost with two parts of your favorite potting soil.



Figure 7: Planter compost application

4 Lawn Maintenance:

Turf topdressing is a maintenance practice long used by golf course superintendents to maintain a healthy lawn. Compost is ideal for this use.

General instructions:

1. Apply approximately 1/4 to 1/2-inch of compost over the turf area to be treated.
2. Core-aerate the entire area covered with the compost. Ideally aerate deeply (3 to 4-inch minimum), using wide (1/2 to 3/4-inch), hollow tines or spoons. Make four to five passes, moving in two directions over top-dressed area.
3. Back drag the entire area with a weighted chain link fence, or similar appliance, to break up the cores and blend them with the compost to fill in the holes.
4. Overseed if desired, and water well.



Figure 8: Topdresser

Challenges / Opportunities

“I don’t know anything about soil”

“Most of our projects are with brownfields”

“That’s something that the landscape architect and general contractor handle”

“The landscaper justs want to apply soil like they always do”

“We’re already doing this. There isn’t any need for more education”

“We don’t have a lot of plants / soil on our projects”

“This sounds cool. I’ll need to bring a few people on our team together to discuss for our 2018 capital projects”



What is the current status?

Compost use prevalent in certain sub-sectors such as DOT

Compost is a staple of the landscaping industry in many region of the US

Low adoption of compost up front in construction and site development

Low knowledge of compost use among the building and real estate sector

Lack of understanding of the long-term benefit of compost by real estate managers in public and private sector

Lack of understanding of the long-term benefit of compost by site owners in public and private sector

Benefits for Cities and Portfolios: How to Estimate?

X # of construction projects annually

X% of project cost is soil

Topsoil manufacturing on X% of projects

Savings: Soil budget

Savings: Reduced Storm water management costs / additional space for development

= X net financial benefit

What is possible and Next Steps

Pilot and demonstration projects

Standards (e.g. Washington County, California and Denver)

Erosion control and stormwater management

Soil is environmental / climatic resilience

Real estate leadership?

Redevelopment districts and 'eco-districts'?

Thank You



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Appendix / Discussion Slides

What's the current status?

Construction



Operation / Maintenance

Private Sector	Public Sector
Large projects	Large projects (e.g. >50,000 cubic yards)
Small/medium projects	Small/medium projects

Private Sector	Public Sector
Large sites	Large sites
Small/medium sites	Small/medium sites

Stakeholder Engagement (Key People to Get Involved)

- Capital Projects
- Waste Diversion
- Sustainability
- Landscape Architecture