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
1. Residents separate food scraps for pick-up.
2. Food scraps are picked up and delivered to local compost facility.
3. Food scraps are turned into clean, nutrient-rich compost.
4. Compost is delivered back for many useful purposes.
5. Compost enriches the soil in gardens, helping them grow healthier.

Commercial Agriculture

Global Green USA
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?
Laying The Groundwork

1. Identify Site
2. Geographical Soil Mapping
3. Acquire Soil Samples
4. Lab Testing
5. Receive Results
6. Create Soil Specifications
7. Give Specs to Contractor
8. Use Specifications on Site
## Cost Savings from Topsoil Manufacturing

### Option 1: Compost Application
- **Compost application**
  - Install 2" of compost and amend into 6" of existing soil
- **Compost required:** approximately 31 CY
- **Unit price to install and amend compost would be anywhere from $40-$45 per CY installed**
- **Total Cost:** $1,318

### Option 2: "Top Soil" Application
- **Compost required:**
  - Install 6" of topsoil
  - Topsoil required
  - Approximately 93 CY
- **Unit price would be anywhere from $30-$35 per CY installed**
- **Total Cost:** $3,022

### Option 1: Compost Application
- **Compost materials**
  - $25/yard x 31 yards
  - $775 + delivery $280
  - $1,055
- **Compost application, incorporated in the soil, rough grade**
  - $2/sq foot = $10,000
- **Total:** $11,055

### Option 2: "Top Soil" Application
- "Top soil" application to existing soil:
  - $34/yard (retail) x 93 CY
  - $3,162 + $680
  - $3,842
- **Application of materials with landscape equipment:**
  - $3.15/sq foot = $15,750
- **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.

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.

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 two 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.
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?

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<td>Large projects</td>
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Stakeholder Engagement (Key People to Get Involved)

- Capital Projects
- Waste Diversion
- Sustainability
- Landscape Architecture