



DeepRoot Canada Corp.
341-550 West Broadway
Vancouver, BC
V5Z 0E9

December 10, 2015

Dear Mr. Mike James,

RE: ELIGIBILITY OF DEEPROOT SILVA CELLS FOR CITY OF VICTORIA RAINWATER REWARDS

The City of Victoria will evaluate DeepRoot Green Infrastructure's Silva Cell or Silva Cell II as a rainwater management method that may be eligible for incentives if the design is certified by a Qualified Professional as part of a Rainwater Rewards application.

As outlined in the City of Victoria Bylaw 14-071, the Qualified Professional must identify a functional equivalency to a rainwater management method within in the bylaw, and the City will assign a level of credit based on the certified design and it's identified functional equivalency. A definition of Qualified Professional is provided in the bylaw and examples include Professional Engineers or Landscape Architects.

The certified design must meet the requirements for the identified functionally equivalent rainwater management method outlined in the City of Victoria's Rainwater Management Standards – Professional Edition, including provisions for overflow, appropriate sizing to meet the 32mm/24hr rainwater management target, and being designed, installed, and maintained as per recommendations of the manufacturer. The application must also follow the Rainwater Rewards process. This process, as well as relevant documents and information are outlined on our website www.victoria.ca/stormwater.

If you require any further information or clarification, please contact me at 250-361-0443 or stormwater@victoria.ca.

Sincerely,

Brianne Czypyha
Stormwater Management Specialist
Engineering and Public Works
City of Victoria
1 Centennial Square, Victoria BC V8W 1P6



DEPARTMENT OF PERMITTING SERVICES

Isiah Leggett
County Executive

Diane R. Schwartz Jones
Director

July 9, 2012

Mr. Albert Key
8 East 96th Street
Apt. 8A
New York, NY 10128

Re: Deeproot Silva Cell

Dear Mr. Key:

Please be advised that the Stormwater Management New Products and Materials Committee for Montgomery County has recommended approval of the above mentioned product for use in Montgomery County.

The approval is based on the following conditions.

1. This approval is valid for a period not to exceed five years. The manufacturer must reapply for approval to continue use of this product prior to the end of the five year period; or, the product will no longer be acceptable for use.
2. All structures must adhere to current Department of Permitting Services access guidelines.
3. Structures within the Public Right of Way must be approved by the Montgomery County Department of Transportation and the Department of Permitting Services, Right of Way Section.
4. These structures should not be used in travel lanes.
5. The use of Silva Cell products must comply with the design specifications outlined in the latest Maryland Department of the Environment and Montgomery County stormwater management standards.

All changes and/or modifications to the approved design parameters for this product must be submitted to the County for approval prior to use in the County. Failure to do so will result in revocation of this approval.

If you have questions or comments please contact me at 240-777-6343.

Sincerely,



Richard R. Brush
Manager

cc: William Campbell
Tom Weadon



**Metropolitan
St. Louis Sewer
District**

2350 Market Street
St. Louis, MO 63103-2555
(314) 768-6200

November 8, 2013

Ms. Brenda Guglielmina
DeepRoot Green Infrastructure, LLC
P.O. Box 927
Decatur, GA 30031-0927

RE: Silva Cell System: St. Louis MSD Submission

Dear Ms. Guglielmina:

The Metropolitan St. Louis Sewer District (MSD) has reviewed your application regarding the Silva Cell for use as a Best Management Practice for stormwater management. Silva Cell may be used to supplement permeable pavement as a stand-alone water quality BMP, subject to the following provisions:

- The Silva Cell is approved for use on new development and redevelopment sites of any size (including roadway projects) in which permeable pavement is used.
- The Silva Cell shall be designed and applied in accordance with the details attached to this letter. When supplemented with permeable pavement, the permeable pavement may manage a larger upstream tributary area (up to a ratio of 4:1) as a stand-alone BMP, regardless of the saturated hydraulic conductivity of the underlying soil.
- Channel Protection Volume (CPv) storage may be provided within the void space of the soil media, ponding zone, and within the rock layer of the permeable pavement.
- Project specific design calculations and maintenance plans furnished by DeepRoot LLC must be included within the project's "Stormwater Management Facilities Report" prepared by the consulting engineer.
- The initial installation of the Silva Cell under this design criteria in the MSD shall include the following:
 - 1) A manufacturer's or vendor's representative must be onsite during the proprietary BMP installation to ensure the product's installation requirements are met.
 - 2) Shop drawings indicating elevations of flowlines, weirs, pipe inverts, etc. will be required prior to installation.
 - 3) The manufacturer or vendor must arrange for an as-built survey of the proprietary BMP to be performed by a Missouri-registered Professional Land Surveyor once the device has been installed, and prior to any testing or monitoring.
 - 4) The manufacturer or vendor must perform quarterly inspections of the proprietary BMP during its' first year of operation, which will include visual inspections and quantitative analysis of the service's sediment removal efficiency, especially as compared to its design efficiency. MSD requests to be

invited to these inspections to further enhance familiarity and understanding of the device.

- 5) Formal reports shall be submitted to MSD, including as-builts and at each quarterly inspection. The reports shall include summaries, quantitative analysis mentioned in item 4, photographs of the structure, inlet, internal conditions of the structure, the filters, and outfall conditions, etc. The reports shall also evaluate the performance of the owner's adherence to the approved maintenance program, and offer suggestions for any areas of improvement.

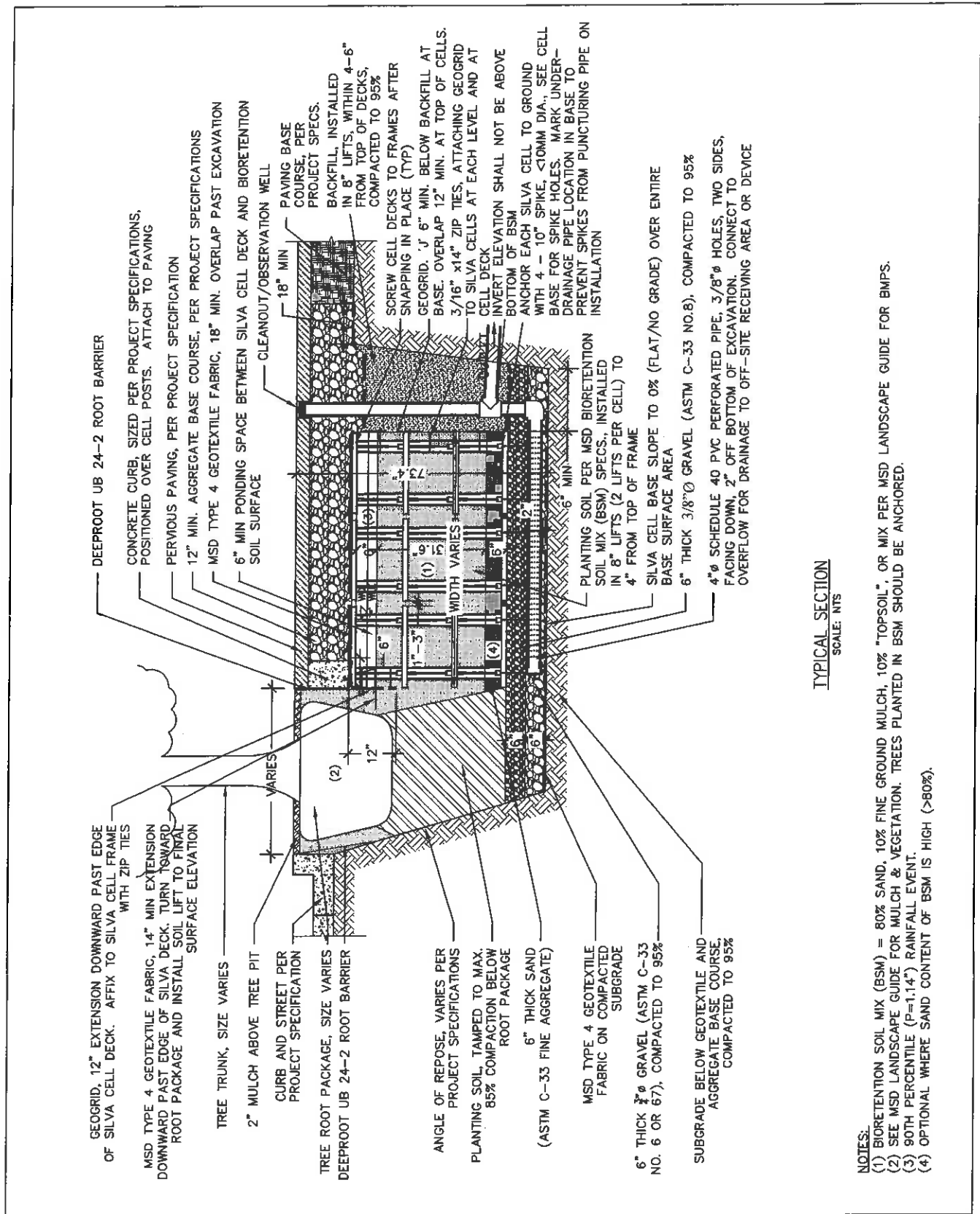
MSD reserves the ability to withdraw or modify this approval based on subsequent information, including information indicating that this BMP does not satisfy MSD rules, requirements, or construction specifications.

Sincerely,



Jason Peterein, P.E.
Principal Engineer (BMP Committee Chairman)
Engineering/Planning – Development Review
Metropolitan St. Louis Sewer District

Pc: Brenda Guglielmina – DeepRoot, LLC
File



TYPICAL SECTION
SCALE: NTS

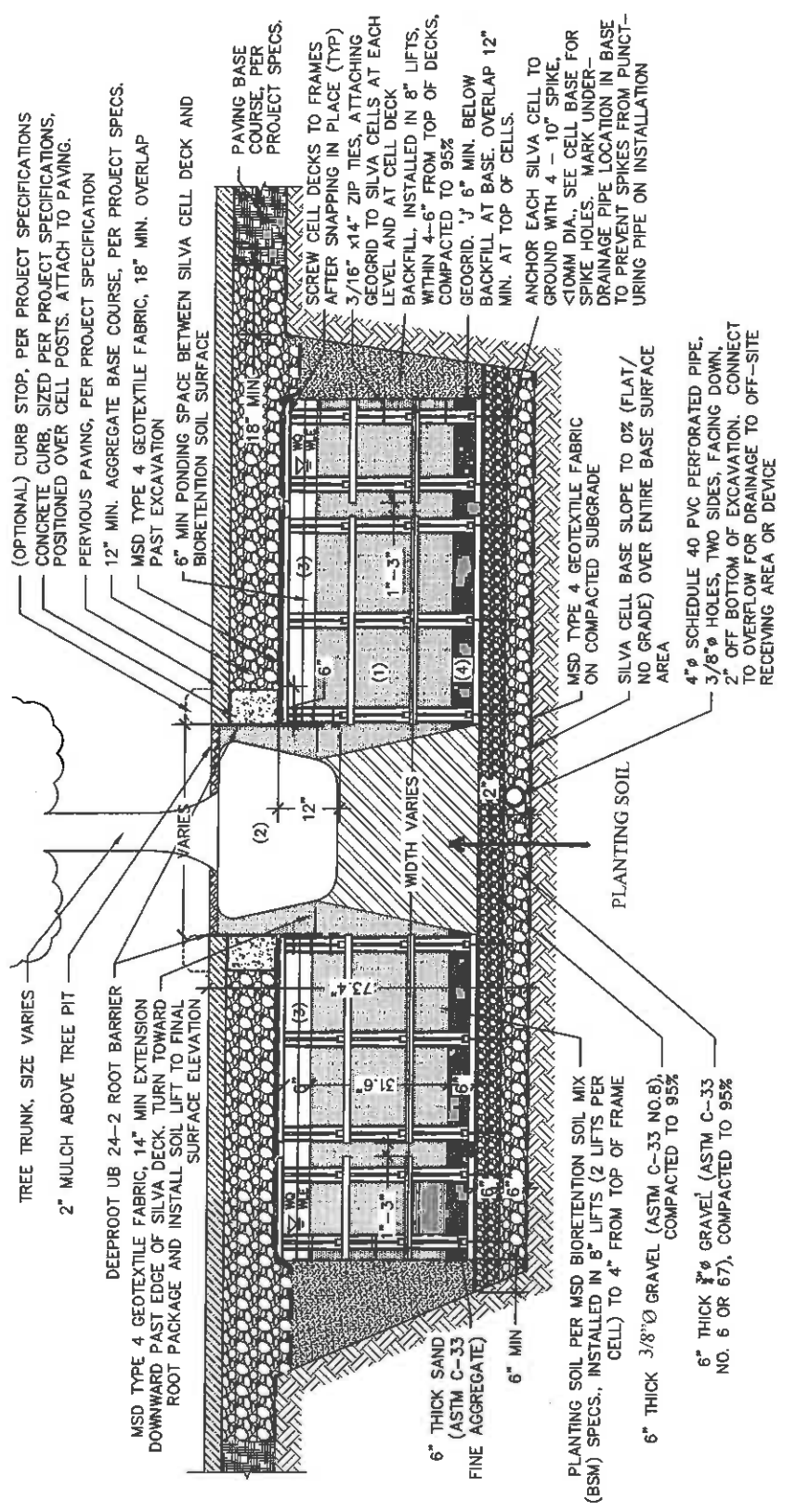
- NOTES:
- (1) BIORETENTION SOIL MIX (BSM) = 80% SAND, 10% FINE GROUND MULCH, 10% "TOPSOIL", OR MIX PER MSD LANDSCAPE GUIDE FOR BMPS.
 - (2) SEE MSD LANDSCAPE GUIDE FOR MULCH & VEGETATION. TREES PLANTED IN BSM SHOULD BE ANCHORED.
 - (3) 90TH PERCENTILE (P=1.14") RAINFALL EVENT.
 - (4) OPTIONAL WHERE SAND CONTENT OF BSM IS HIGH (>80%).

BIORETENTION WITH INTERNAL WATER STORAGE IN SOIL CELLS FOR RETROFIT TYPICAL SECTION

DEEPROOT GREEN INFRASTRUCTURE
Non-Standard Details of Sewer Construction

AUGUST 2013

DETAIL 5A-1



TYPICAL SECTION
SCALE: NTS

- NOTES:
- (1) BIORETENTION SOIL MIX (BSM) = 80% SAND, 10% FINE GROUND MULCH, 10% "TOPSOIL", OR MIX PER MSD LANDSCAPE GUIDE FOR BMP'S.
 - (2) SEE MSD LANDSCAPE GUIDE FOR MULCH & VEGETATION. TREES PLANTED IN BSM SHOULD BE ANCHORED.
 - (3) 90TH PERCENTILE (P=1.14") RAINFALL EVENT.
 - (4) OPTIONAL WHERE SAND CONTENT OF BSM IS HIGH (>80%).

BIORETENTION WITH INTERNAL WATER STORAGE IN SOIL CELLS FOR RETROFIT TYPICAL SECTION	DEEPROOT GREEN INFRASTRUCTURE <i>Non-Standard Details of Sewer Construction</i>	
	AUGUST 2013	DETAIL 5A-2



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

PO Box 47600 • Olympia, WA 98504-7600 • 360-407-6000

711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

May 14, 2013

Brenda Guglielmina
DeepRoot Partners
530 Washington Street
San Francisco, CA 94111

RE: Silva Cells for Stormwater Runoff Filtration

Dear Ms. Guglielmina:

The Washington State Department of Ecology (Ecology) finds the Silva Cells functionally equivalent to a bioretention facility. The media specifications for Silva Cells must adhere to the guidelines for Bioretention areas, found in Appendix C, Volume III, in the 2005 Stormwater Management Manual for Western Washington (SWMMWW); or BMP T7.30 in the 2012 SWMMWW. The sizing procedure must also adhere to the procedure outlined in the Bioretention area of the manuals mentioned above or the procedure DeepRoot submitted to Ecology for design of the Silva Cells using WWHM dated March 2013.

Contractors may use the Silva Cells BMP at project sites without seeking additional Ecology approval though Ecology cannot endorse this product or its manufacturer. Manufacturer installation recommendations must be followed.

For more information, contact Doug Howie at douglas.howie@ecy.wa.gov, or (360) 407-6444.

Sincerely

A handwritten signature in blue ink that reads "D. Howie".

Douglas C. Howie, P.E.
Stormwater Engineer
Program Development Services
Water Quality Program

cc: Kathleen Emmett, Ecology
Ed O'Brien, Ecology





STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

PO Box 47600 • Olympia, WA 98504-7600 • 360-407-6000

711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

October 20, 2009

Brenda Guglielmina
DeepRoot Partners
530 Washington Street
San Francisco, CA 94111

Re: Silva Cells for Stormwater Runoff Filtration

Dear Brenda:

The Washington State Department of Ecology (Ecology) finds the Silva Cells treatment system functionally equivalent to a rain garden. The media specifications for Silva Cells must adhere to the guidelines for Bioretention areas (rain gardens), found in Appendix C, Volume III, of the Stormwater Management Manual for Western Washington (2005) or its latest version. The sizing procedure must also adhere to the procedure outlined in the Bioretention area of the above mentioned manual or the procedure DeepRoot submitted to Ecology, dated September 24, 2009, for design of the Silva Cells using WWHM.

Contractors may use the Silva Cells BMP at project sites without seeking additional Ecology approval though Ecology cannot endorse this product or its manufacturer. Manufacturer installation recommendations must be followed.

For more information contact: Douglas Howie at 360-407-6444 or email Douglas.howie@ecy.wa.gov.

Sincerely

Douglas C. Howie, P.E.
Program Development Services
Water Quality Program

Cc: Kathleen Emmett
Foroozan Labib



From: "Lucas, Annette" <annette.lucas@ncdenr.gov>
To: "Brenda Guglielmina" <Brenda@deeproot.com>
Subject: RE: NEST Application for Silva Cell by DeepRoot

Brenda,

I have reviewed your "pre-application" and it all looks great, very impressive actually. I attached an edited version where I provided a few suggestions on the MDC; those were the only suggestions I had.

I got unexpectedly sidetracked with a rule-making emergency late last week and am just pulling out of it today.

So by this email, I am officially indicating the DEQ Stormwater Program's acceptance of Silva Cell into our NEST program. Whenever you are ready, please submit a final report that includes the following items:

- (5) NEST FINAL REPORT. The following items shall be included in the NEST Final Report that the applicant submits to the Division:
- (a) as-built plans and details showing the site and the NEST from all monitoring sites;
 - (b) a certification from the entity conducting the research that the Quality Assurance Project Plan approved by the Division was complied with during the conduct of the trial installations;
 - (c) raw water quality data, including reports from the laboratory;
 - (d) summary of water quality data and removal calculations;
 - (e) influent and effluent volume data from each discrete storm event;
 - (f) storm event information, including storm depth, date, duration, antecedent period, peak five-minute rainfall intensity;
 - (g) a summary and interpretation of the monitoring results;
 - (h) statistical analysis of the monitoring data;
 - (i) proposed runoff volume reduction rates for the NEST as well as proposed effluent concentration credits for Total Nitrogen (TN) and TP. In addition, proposed effluent concentrations for any other pollutants that have been monitored as part of the NEST Program; and
 - (j) a final list of MDC in the report, with notes on whether the MDC have changed since initial enrollment in the NEST Program. Also, please provide recommendations on each of the MDC as appropriate for incorporation into the NC Stormwater Design Manual.

Thank you for your patience as I (poorly) have tried to juggle the stormwater rulemaking efforts with the NEST program. Please let me know if you have any questions.

Sincerely,
Annette

Annette M. Lucas, PE
Environmental Engineer
NCDEQ | DEMLR | Stormwater Program
1612 Mail Service Center, Raleigh, NC 27699-1612 (Mail)
512 N. Salisbury St, Raleigh, NC 27604 | 9th Floor (Location & Parcels)

Phone: [\(919\) 807-6381](tel:9198076381) | Fax: [\(919\) 807-6494](tel:9198076494) | Email: annette.lucas@ncdenr.gov<<mailto:Annette.lucas@ncdenr.gov>>
Website: <http://portal.ncdenr.org/web/lr/stormwater>

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