THE MAIN PARKING LOT AT THE MORTON ARBORETUM

BMP's Five Years Later

Sikich Engineering, Inc.

rboretum



















PERMEABLE PAVEMENT CROSS SECTION

















ECOLOC® PERMEABLE PAVERS





TYPICAL BIO-SWALE CROSS SECTION

PARKING LOT GRADING DETAILS

















WATER LEVEL CONTROL STRUCTURE



































ENERGY DISSIPATION STRUCTURE





STORMWATER DISCHARGE MONITORING

(MONITORING STUDY COURTESY OF THE MORTON ARBORETUM, WILLS BURKE KELSEY ASSOCIATES, AND UNILOCK)

- Continuous monitoring at 5 locations in permeable parking Lot
- Continuous monitoring of conventional asphalt lot on-site Nearby
- Data logged at 15 minute intervals

PARTIAL RAINFALL/RUN-OFF DATA FROM 2007

(DATA PROVIDED BY THE MORTON ARBORETUM, AS CALCULATED BY WILLS BURKE KELSEY ASSOCIATES)

Storm Event	Rainfall (in)	Asphalt P. Lot Runoff (in)	Permeable P. Lot Runoff (in)	Permeable P. Lot Discharge (in)
8/24/07	2.63	2.23	1.06	0.03
7/19/07	1.73	1.23	0.53	0.01
8/5/07	0.51	unavailable	0.17	0.00

OWNER'S OBSERVATIONS AND LESSONS LEARNED

- OVERALL, THE PARKING LOT HAS EXCEEDED THE OWNER'S EXPECTATIONS
- LEVEL SPREADER IS WORKING VERY WELL HAVE NEVER WITNESSED WATER DISCHARGING FROM OVERFLOW PIPE
- WOULD PREFER FEWER CURB CUTS, OR A "SLIT" IN THE CURB IN LIEU OF DEPRESSIONS (DUE TO PEDESTRIANS CROSSING BIO-SWALES)
- WOULD NOT HAVE USED GRANITE CHIPS IN SURFACE VOIDS
- A FEW LOCATIONS HAVE SETTLED IN HEAVY TRAFFIC AREAS (E.G. NEAR GARBAGE DUMPSTERS AND LOADING DOCK
- SETTLEMENT IS EASY TO REPAIR (PICK UP PAVERS AND RE-LAY)

OWNER'S OBSERVATIONS AND LESSONS LEARNED (cont.)

- ELGIN SWEEPER EASILY REMOVES SURFACE VOID STONE FOR CLEANING OR REPLACEMENT
- THEY HAVE PERFORMED NO OVERALL SWEEPING OR AGGREGATE REPLENISHMENT; ONLY ON A LOCALIZED BASIS AS NEEDED
- WHEN BIO-SWALES AND PERMEABLE PAVEMENT ARE UTILIZED TOGETHER, IRRIGATION IS IMPORTANT FOR PLANT VIABILITY
- USES LESS DE-ICER THAN A STANDARD ASPHALT PARKING LOT
- HAS BEEN PLOWED WITH STANDARD PLOWING EQUIPMENT SINCE 2005

Acknowledgement

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