

Long Term Life Span of LID Practices



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Some common questions/complaints:

- Pervious pavements clog
- Pervious pavements heave in the winter
- Rain gardens don't get maintained and fail



Towers pervious asphalt (UConn)

- Installed Aug 2009



Bird's eye view (2013)



Surface infiltration testing

- Visibly clogged area:
1.2 inches/hr
- Literature average¹:
16 inches/hr
- Visibly clear area (vast majority of lot):
287+ inches/hr
- Literature average¹:
4,000 inches/hr



¹Bean, E.Z., Hunt, W.F., and Bidelspach, D.A. 2007. Field survey of permeable pavement surface infiltration rates. *Journal of Irrigation and Drainage Engineering*. Vol. 133(3), pp. 249-255.

Field House Pervious Concrete



Coming apart at the seams
This is **NOT TYPICAL!**



Infiltration testing at field house lot

- Visibly clogged:
0 inches/hr
- Visibly open area:
0 inches/hr

*****These results are not
typical!!!*****

Pervious concrete in East Haddam



PICPs in snow shelf (UConn)



- Infiltration rate: 15.3 inches/hr

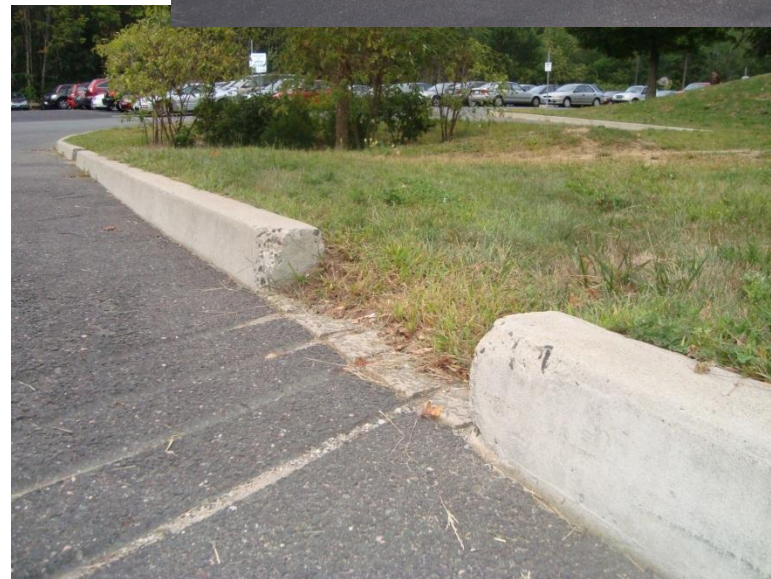
Towers rain garden (UConn)

- Installed fall 2003



Towers Rain Garden Maintenance issues

- Foot traffic caused erosion
- Turf dam caused water barrier



Erosion causes problems

- Garden installed 2010 at Mansfield Apts. (UConn)
- Undersized for drainage area
- Severe erosion killed plants, filled in garden



Rain garden rehab



Overmulching can also cause problems



Jordan Cove

- Uni-EcoStone® pavers on road and some driveways
- Integrity of road after 13 years: *outstanding*



Jordancove.uconn.edu

Jordan Cove-Sept. 2013

- Curb heaved slightly and turf dam grew up



Jordan Cove-Sept. 2013

- Most rain gardens still appear to be functional



Jordan Cove-Sept. 2013

- All but 2...



Some clogging of pavers at Jordan Cove

2002



2005



Jordan Cove-Sept. 2013

- Still clogged and weeds are growing in some areas



Infiltration capacity: Jordan Cove

- 2.1 inches/hr (2004)
 - (Jack's final report)
- Average in literature:
(PICP clogged with
fines) **53 in/hr¹**

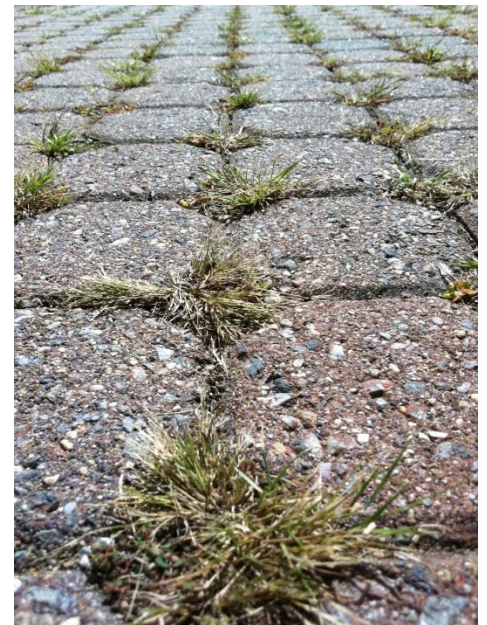


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Jordan Cove-Sept. 2013

- Clogged
 - Infiltration rate:
1.7 inches/hr
 - Simulated maintenance:
1.7 inches/hr

- Clogged + grass
 - Infiltration rate:
1.0 inch/hr
 - Simulated maintenance:
1.4 inches/hr



Impacts of maintenance on pervious pavements

- Simulated maintenance increased infiltration rates by 89%
- If you let the clogging continue for many years, it can't be renovated
 - (holds true for all PPs with small voids)

In Conclusion

- Neglect can cause failure of bioretention systems
 - Not likely for residential rain gardens
 - Renovation is possible
- Neglect can reduce infiltration rate of pervious pavements (but they can still work)
 - Maintenance can improve function (to a point)
- So far, structural integrity of *properly installed* pervious pavements has been excellent

Thank You!

Questions????

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