Green Parking Lots BMP 23

Description

Green parking is based on a number of techniques that incrementally shrink the surface area of the parking lots and then use the space saved to integrate functional landscaping and better stormwater treatment within the parking lot.

General Information

The first step towards green parking lots is reducing the number of parking spaces required. Excess parking can be controlled through standards that reflect average parking needs instead of single peak day projections. The primary justification for high parking requirements is to avoid spillover of parking from one parcel of land to others. However, if all facilities are designed for peak demand, often specified as the demand that only occurs 15 to 30 hours per year, then, by definition, large amounts of excess capacity will exist in the system since these peaks are not coincident. According to the Urban Land Institute (1982), specifying a design hour of the 20th busiest hour of the year leaves spaces vacant more than 99% of the time and leaves half the spaces vacant at least 40% of the time. (In Heaney et al., 1999)

Providing credits for mass transit and cooperative parking can also reduce the number of spaces required. A shared parking arrangement could include usage of the same parking lot by an office space that experiences peak parking demand during the day with a restaurant that experiences parking during the weekend and evening.

The next step involves modest changes in parking lot design to shrink parking lot area. This includes shrinking stall sizes, narrowing drive aisles, and using grid pavers for spillover parking areas. Better landscaping and storm water treatment measures can then be implemented within the saved space.

Thompson and Sorvig (2000) recommend that parking be scattered on sensitive sites. Scattered parking requires much more detailed siting and construction but facilitates the use of natural drainage systems by breaking up parking lots into smaller units so that each parking area can drain to an adjacent unpaved area. At an office site in Atlanta, Robert Marvin dispersed 200 parking spaces access the wooded site, tucking a space or two at a time between the preexisting trees, and carefully preserving the forest floor adjacent to each pavement edge. The vegetated soil infiltrates and eliminates the runoff from each bit of pavement (Ferguson, 2000).

Parking groves can be created which use a grid of trees and bollards to delineate parking stalls and create a shady environment (BASMAA, 1999). Runoff is reduced through interception of rainfall by tree canopies and is enhanced when parking stalls are stabilized with permeable materials.

Additional Resources

Center for Watershed Protection, *Better Site Design: A Handbook for Changing Development Rules in Your Community.* Available on Stormwater Center website.

Coffman, L., 2000. *Low Impact Development Design Strategies.* Available on EPA website.

Olympia Washington Impervious Surface Study. Available on website.

Schueler, 1995. *Site Planning for Urban Stream Protection.* Available on Center for Watershed Protection website.

Thompson, J.W. and K. Sorvig, 2000. *Sustainable Landscape Construction: A Guide to Green Building Outdoors*, Island Press, Washington, D.C.

USEPA, *Storm Water BMPs: Green parking.* Available on EPA website.

Zielinski, J. "The Benefits of Better Site Design in Commercial Development", *Watershed Protection Techniques*. Available on Stormwater Center website.

Figure 23-1. Green parking lots