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Michaels Engineering LEED® Brief

STORMWATER DESIGN

SUGGESTIONS...

Do you have certain LEED® topics you'd like to know more about? Send an email with your suggestion to the author listed below and your topic might become a future LEED® Brief!

DID YOU KNOW...

...16 times more stormwater runoff is produced by a one-acre parking lot compared to a one-acre meadow.

...A single quart of motor oil leaked onto a parking facility throughout various parking stalls can create a two-acre oil slick.

MEET THE AUTHOR

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STORMWATER DESIGN

As I sit down to write this LEED® Brief, I have thoughts of the recent flooding that occurred just to the south of where my home is, which caused millions of dollars in damage. Luckily, my house did not receive any damage, due in part to the good job that the original landscapers did when our subdivision was created, keeping water flowing away from the houses.

When designing a facility, attention must be paid to where future stormwater will go, not only to prevent damage to property, but also to prevent damage to the environment. In addition to the consideration of the quantity of stormwater, attention must be paid to the quality (contamination) as well. Consider the contamination that occurred due to the flooding near my home. Many people have irreparable damage that occurred to their property due to the contamination in the stormwater.

Not every storm event will produce the flooding and contamination I described above, but consider this; just one quart of oil leaked onto a parking lot can create two acres of contamination when washed away by rainfall! It is in our best interest to manage stormwater properly, both to protect property and the environment.

STORMWATER QUANTITY CONTROL

Limiting the quantity of stormwater that leaves a property by way of runoff will help to limit the disruption of natural hydrology. This can be done in multiple ways: reduction of impervious cover (asphalt or concrete), increase of on-site infiltration, and managing stormwater runoff.

Several options are available when achievement of a LEED® credit for Stormwater Quantity Control is desired. The options are dependent on the existing level of imperviousness of the site. Implementing stormwater plans and features that limit or reduce the amounts of stormwater runoff based on design storm levels for a particular region is a good idea and a place to start.

STORMWATER QUALITY CONTROL

The other part of stormwater design is to reduce or eliminate water pollution that occurs due to stormwater runoff. This includes two of the same three options from Stormwater Quantity Control: reduction of impervious cover and increase of on-site infiltration, but also includes eliminating sources of contaminants and removing pollutants from stormwater.

Earning a LEED® credit for Stormwater Quality Control includes implementing a stormwater management plan that reduces impervious cover, promotes infiltration, and captures and treats the stormwater runoff from 90% of the average annual rainfall for your particular region.

HOW DO I GET IT DONE?

Several options exist that will help you to control both the QUANTITY and QUALITY of your stormwater runoff, which can prevent costly flooding and fines for pollution. Choosing the proper options is something that needs to be designed into the facility at the beginning of your project design. Options can include a vegetated swale or pervious paving, both which allow stormwater to remain on a property and slowly infiltrate into the ground, or a rain garden that uses rainfall for irrigation. Not every option will be feasible at a given property, so proper design is important.

When you have your stormwater control features completed, not only will you have peace of mind that you are protecting yourself financially, but you will also be protecting the environment, all the while creating a landscape that can be aesthetically pleasing.