

Green Roof Service LLC presents:

November 27, 2013

<a href="#">Projects</a>	<a href="#">Services</a>	<a href="#">Modern Green Roof Technology</a>	<a href="#">Living Architecture</a>	<a href="#">Resources</a>	<a href="#">About Us</a>
--------------------------	--------------------------	--	-------------------------------------	---------------------------	--------------------------



3646 Roland Avenue  
Baltimore, MD 21211  
Phone: 443-345-1578



**Happy Thanksgiving from Green Roof Technology! We appreciate all of our loyal supporters!**

**Green Roof Plant of the Month:**



Brush up on your green roof plant knowledge with a new plant every month! Only on our Green Roof Plant Blog!



**Green Roof Collapse in Latvia**

A devastating collapse of a green roof construction site left many Latvians dead or injured. Buckling last Thursday, the rooftop was supposed to be lavish with plants and additional recreation area.



**Sustainable Green Trends Workshop**

Taking place on December 3rd, Jörg Breuning and Bill Foley will give a presentation with the topic: Planning, Implementing and Maintaining a Green Roof System for Sustainable Projects.



**Cool Roofs Might Increase Air Pollution**

Various studies have attempted to prove that any cool roof may be just as effective as a green roof. Recently it has come into the picture that cool roofs may actually be creating more pollution than once known.

**Akron University Green Roof Sees Season's First Snow**

Planted back in October of 2012, the green roof atop the Sydney L. Olson Research Center has flourished. After it's first full growing season, the plants are well established and ready for a winter nap.

## Green Roof Collapse in Latvia



On Thursday November 21st 2013, an evolving green roof collapsed over top a Latvian supermarket. The market, open to the public at the time, was under construction because of a green roof and recreation area being installed for an adjacent residential building. The rooftop that buckled only covered one area of the market, however fifty-four people have been pronounced dead since Saturday and many more hospitalized.

The cause, although not completely pinpointed has been blamed on the overall green roof construction. The additional weight on the structure by the various green roof materials and growing media could have been exacerbated by the recent rain events. A current investigation is underway to determine if proper precautions and guidelines were followed throughout the planning and construction processes.

As explained in a previous blog post: The First Steps to Planning a Green Roof, checking the structural integrity of any building should always be the first step in the planning process. Not only should a green roof to have a long lifespan, it should also not put anyone in danger.



## Sustainable Green Trends Workshop



On Tuesday, December 3rd, Jörg Breuning and Bill Foley will present at a Sustainable Green Trends Workshop at the Holiday Inn in East Windsor, New Jersey. The topic: Planning, Implementing and Maintaining a Green Roof System for Sustainable Projects. The session will start at 1:40 pm, directly after the complimentary lunch and will last until 5:40 that evening.

The Sustainable Green Trends workshop is one of many programs held by DPC Associates in order to promote sustainable building practices in the northeast.

## Cool Roofs Might Increase Air Pollution



Approximately 35 years ago I learned in horticultural chemistry class how plants utilize the energy of sunlight. This process is called Photosynthesis and is an everyday example of Photochemistry, a sub-discipline of chemistry or the study of chemical reactions that proceed with the adsorption of light by atoms or molecules.

Other examples of Photochemistry are the degradation of plastics and the formation of Vitamin D with Sunlight.

Over the last half century, it has been well studied that heat and sunlight have a tremendous effect on air quality. Both, and independent from each other, heat and sunlight can transform the atoms and molecules in the air around us into other chemical combinations that are often harmful for human health. The same photochemical transfer occurs also with most other particles and substances in the air and increases the chemical cocktail in the air we breathe substantially.

In a recent study of the Cooperative Institute for Research in Environmental Sciences (CIRES) it was confirmed that at night – without the energy of sunlight – nitrate radicals naturally help cleanse the atmosphere. Acting as a “janitor” of the night sky, the nitrate radical scrubs away air pollutants such as volatile organic compounds that would otherwise form smog and ozone. The cleansing compound only works nightshifts, however, since sunlight destroys the light-sensitive molecule. The study suspects that the street lights in cities reduce this cleansing effect.

It doesn't take much to understand that Cool Roofs or Reflective Roofs multiply the light energy in the air, reducing not only light-sensitive molecules but also converting most other atoms, molecules and particles in the air into potentially more harmful chemical combinations.



*Skin aging: caused by 80% of the Sunlight*



This can be proven by many simple observations:

- \* Photovoltaic (PV) elements increase their output with higher light intensity because of the energy in the light (more photons from sunlight increase the electromagnetic interaction).
- \* The human skin reacts on intense sunlight with a photochemical reaction (often ending in skin cancer).
- \* Sunlight changes the composition of most natural or man-made materials – typically degradation.
- \* Plants change their appearance when exposed to excessive light – often they die.
- \* Plants “suffocate” when exposed to sunlight 24/7.



Nowadays numerous studies (typically sponsored by manufacturers) focus only on the surface temperature making everybody believe that cool roof, or so called reflective roofs, are environmentally friendly because of the lower surface temperature. Isn't it worth to look at the bigger picture of what happens when reflecting sunlight off of roof tops – i.e. polluting the air with additional sunlight? I am not suspecting that they were paid to ignore this dramatic effect but it shows to me that the responsibility of researchers is in some cases is questionable. My countryman Albert Einstein would have said: "Insanity: doing the same thing over and over again and expecting different results."

## Akron University Green Roof Sees Season's First Snow

Located on top of the Sydney L. Olson Research Center, Akron University's first green roof is an 18,000 sf extensive green roof with over 15 varieties of perennial plants. After its first full growing season, the plants are well established and ready for a winter nap. Initially planted in October 2012, we established this roof without ever irrigating and only lightly fertilizing at a rate of 5 g / m<sup>2</sup> (0.0164 oz / ft<sup>2</sup>) pure Nitrogen. As you can see from the pictures below, the green roof is growing in very nicely and is home to a variety of insects.

