

Tuesday, November 15, 2011



School District of Lancaster Green Roof Assessment

By request of the School District of Lancaster and LIVE Green Lancaster, Green Roof Technology has toured and evaluated three green roofs in the district. The general diagnosis of the health of the green roofs is poor, a D+ average. It is our opinion that neglect of maintenance duties, coupled with key structural deficiencies, has led to a deterioration of the general health of the ecosystem. Green roofs are a living system that require due diligence in order to reap their myriad rewards.



Bare media leads to erosion, poor storm water management and increased weed susceptibility. It is worth noting that this picture was taken post intensive weeding. Such extreme measures lead to compacted soil which causes poor sedum growth and increased susceptibility to unwanted plants.

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Dense layers of dead grasses create a suffocating blanket of biomass over the sedums.

Lafayette Elementary

The 12,500 square foot LIVE Roof tray system roof covers a section of a new addition to the school. The system was installed Spring 2010.

When we arrived a team from Creek Hill Nursery was present and actively weeding the roof. An authorized LIVE Roof grower, Creek Hill was distraught that their product had suffered so greatly and volunteered to weed the entire roof.

Lack of any maintenance has resulted in aggressive weed growth and substantial sedum die back. Over two-thirds of the roof is exposed to day-long full sun and media exposure in this area is in excess of 50 percent.

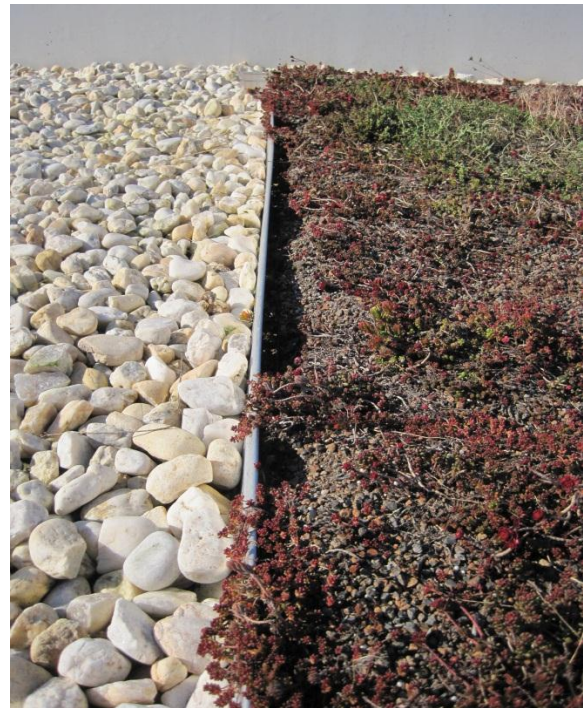
The remaining section of the roof has maintained more sedum coverage but still suffers from aggressive weed infestation. Some

sedum species have put out seed (*sexangulare* and *spurius*) but overall plant diversity has been nearly wiped out.

Weedy grasses have seeded already so the problem is to persist in the spring. We also took note of the roof drains. They are not properly protected and encroaching sedum growth will lead to clogs.

Recommendation:

Immediate maintenance is required. A coordinated maintenance schedule is necessary between a maintenance team and a green roof professional. Professional oversight is required to monitor progress and actively evaluate the health of the roof.



Erosion is caused by the poor structural quality of the modular system. Wind erosion is also prevalent throughout the roof due to sedum die back.

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Tall weeds are firmly established and dominate the landscape.

Ross Elementary

The 3,500 square foot American Hydrotech roof occupies a new section of the school. The system was installed Spring 2010 and planted with sedum plugs.

The sedums have achieved very modest growth, appear malnourished and are often still isolated in clumps. A poor growing media is a likely culprit. The lack of maintenance has caused die back in areas due to weed competition. Sedum growth is occurring along water sealed edges of roof access points. Root penetration in these areas can lead to leaks and water damage.

Reportedly, the roof was weeded possibly once soon after installation. No maintenance has occurred since.

Recommendation:

Immediate maintenance is required. A coordinated maintenance schedule is necessary between a maintenance team and a green roof professional. Professional oversight is required to monitor progress and actively evaluate the health of the roof.



Large areas of exposed media are due to poor sedum growth as a result of the inadequate growing media quality.



A sedum has firmly established itself in the waterproofing surrounding the roof access point. This is a common cause of water leaks.



Two sedum varieties in full fall color.

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The eastern side of the roof. Trade winds carry the weed seeds up from the ground.

Whatron Elementary

The 12,000 square foot TREMCO green roof occupies one level of the elementary school. The extensive green roof was planted with sedum plugs.

Again, maintenance is an issue concerning the general health of the green roof. Weed seeds have been carried by trade winds onto the roof and have established heavily along the eastern side of the roof. The roof slopes towards the eastern side, so weeds have thrived on the extra available moisture.

Another big cause for concern is the drainage system. Sedums have over-run the poorly designed drain leading to potential blockages and water damage.

Recommendation:

Immediate maintenance is required. The drainage area must be cleaned and rebuilt by a green roof professional soon before the snows arrive and subsequent melts occurs.



The western side of the roof is nearly weed free. The high eastern parapit captures the seeds.



Excess moisture is being trapped in the poor media surrounding the drain, which has led to sedum infestation and high blockage potential.



Removing the drainage grate reveals the extent of the problem. This area should be extremely well draining and most often dry.