

Green Roofs – Introduction and Overview

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The concept of placing plant material in the infrastructure of man-made construction, known as living architecture, has captured the imagination of ecologically minded architects, builders and property owners. The term Green Roof references the concept of using the upper portion of a building as a habitat for plants (Green Roofs, 2014). All Green roofs have 4 major components – a waterproof and plant-root barrier, a drainage/storage level, a filter-fiber layer, a deposit of growing medium and a cover of vegetation.

The justification for use of this technology includes improvement in urban water quality, energy conservation, aesthetics and quality of life (Villareal *et al.* 2004, Castleton *et al.* 2010, Mentens *et al.* 2006, Gettler and Bradley Rowe 2006, Fuller *et al.* 2007, Carter and Butler 2008, Fuller and Irvine 2010, Francis and Lorimer 2011). A number of studies have surveyed the avian and plant populations associated with green roofs and found an increase in biodiversity in structures incorporating living architecture (Miller *et al.* 2001, Baumann 2006, Baumann and Kasten 2010, MacIvor and Lundholm 2011, Cook-Patton and Bauerle 2012, Madre *et al.* 2013). Surveys of arthropod communities associated with green roofs have involved a number of taxa but inevitably from an ecological perspective and nothing has been published on entomological pests associated with green roofs (Schindler *et al.* 2011, Braaker *et al.* 2014).

Recently publications have critically analyzed many of the aforementioned features of the living architecture movement and question the unmitigated benefit(s) of the green roof concept (Simmons *et al.* 2008, Henry and Frascaria-Lascoste 2012, Mullen *et al.* 2013). Niche theory intuitively predicts that any human-built habitat will be occupied by some life form and from a pest management perspective that generally involves a synanthropic species whose populations could build to the point of pest status. An informal survey of three green roofs on the University of Georgia campus prior to this meeting found fire ants on each roof although none of the building residents complained of infestation. Pest populations associated with living architecture could provoke an intervention aimed at reducing the infestation that might include remodeling and/or repairing components of a green roof to application of a pesticide.

This symposium will provide information on this growing segment of the urban architecture in the United States and raise topics certain to be points of conversation with PMP's, property owners and regulatory lead agencies in the coming decade. The pest management community should be aware of the potential for pest issues associated with this burgeoning urban landscape feature including, legality of pesticide application to green roofs, tenant/landlord responsibilities, PMP responsibilities and opportunities to serve as a resource on pest issues for property owners interested in living architecture.

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