

August 10, 2016

Planning and Sustainability Commission  
1900 SW Fourth Ave., Suite 7100, Portland OR, 97201  
Attn: CC2035 testimony

Dear Planning and Sustainability Commission:

I am writing to wholeheartedly support an ecoroof requirement in the Central City 2035 Plan. Ecoroofs provide a wide range of benefits. They:

- Reduce and manage stormwater runoff from rooftops
- Improve air quality by capturing and removing particulates
- Reduce urban heat island because they are significantly cooler than conventional roofs
- Provide open space for people and habitat for wildlife
- Improve aesthetics and views from adjacent buildings
- Reduce energy usage in buildings
- Last much longer than conventional roofs, saving replacement costs and materials

Many studies have been conducted that provide the empirical evidence that forms the scientific foundation of these benefits. I will cite studies that address just four of the benefits listed above.

#### **Ecoroofs Manage Stormwater Sustainably**

Based on City of Portland monitoring data since 2002, ecoroofs typically capture and evaporate an average of 60 percent of the rain that falls on them. This reduces stormwater runoff volume and speed, helps prevent combined sewer overflows, and protects rivers and streams. (*Ecoroof Handbook*, by City of Portland Environmental Services. 2009)

#### **Ecoroofs Reduce Urban Heat Island Impacts**

A study conducted by researchers at Columbia University compared roof membrane temperatures of a green, white, and black roof located in Queens NYC. The results showed that the green roof was 60°F cooler than the black roof and 30°F cooler than the white roof. (*A Temperature and Seasonal Energy Analysis of Green, White, and Black Roofs*, by S.R. Gaffin, C. Rosenzweig, J. Eichenbaum-Pikser, R. Khanbilvardi, and T. Susca. 2010)

Just as ecoroofs need maintenance, white roofs also require maintenance. White roofs require frequent washing or they lose their reflectance rapidly. Ecoroof maintenance can be fairly simple or complex depending on the design and needs of the building owner.

#### **Ecoroofs Save Energy**

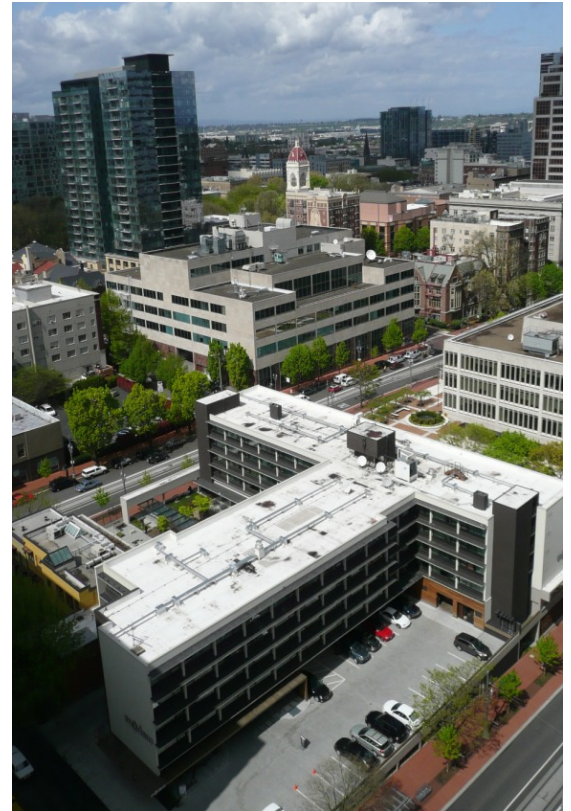
Portland State University professor and researcher, Graig Spolek, conducted a study that compared heat flow through the vegetated roof to a conventional, ballasted roof on the Broadway Building. The results showed that a vegetated roof reduced heat flow through the roof by 72 percent in summer and 13 percent in winter. (*Performance Monitoring of Three Ecoroofs in Portland, Oregon*, by Graig Spolek. 2008). Reducing energy demand in buildings also reduces greenhouse gas emissions.

### **Ecoroofs Improve Air Quality**

One study, cited by the US Environmental Protection Agency, estimates that a 1,000 square foot green roof can remove about 40 pounds of particulate matter from the air in a year, while also producing oxygen and removing carbon dioxide. (*Reducing Urban Heat Islands: Compendium of Strategies*, draft, by U.S EPA. No date)

### **Ecoroofs Provide Open Space and Improve Aesthetics**

Views from a friend's apartment would be much improved if the surrounding buildings had ecoroofs. Those ecoroofs would provide habitat for birds and insects, and some could be used as rooftop green spaces for people.



Ecoroofs began appearing in portland in the mid-1990s. From 2008 to 2012, the City of Portland provided a cash incentive which was very popular and Portland was recognized globally as a leader in the industry. As ecoroof business shifted to other cities, our lead has fallen away. However, ecoroofs are not new to Portland, and because of their longevity here, we have a strong ecoroof industry which can provide design, engineering, and roofing expertise for developers and builders. We can regain our worldwide stature as an ecoroof leader, and the requirement is the way to do that.

I hope that you will join many of us and support the ecoroof requirement in the Central City 2035 Plan.

Sincerely,

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