Date: August 11, 2016
To: Portland Planning and Sustainability Commission
Subject: Comments on the Proposed Central City 2035 Plan
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Dear Commissioners,

Subsequent to the August 9, 2016 PSC Hearing I want to provide you with additional information, some of it prompted by comments made at the hearing.

Definitions:

Greenroof is a term used to describe numerous types of vegetated roofs and roof gardens. There are several categories:

- Extensive, light weight, self-sustaining and low cost - in Portland these are referred to as Ecoroofs;
- Intensive is what most Americans refer to as Roof Gardens, shrubs, trees and lots of lush plantings and accessible to people at high cost;
- Semi-Intensive is somewhere in-between. Within these three main categories are Habitat roofs; Agricultural roofs, Bio-solar roofs and an array of variations. Sometimes many of these variations are combined and are referred to as Comprehensive roofs.

White roof indicates that the roofing material is made with an albedo that reflects sunlight.

Blue-roof is an engineering term used to describe a roof (of any color) that have devices fitted around the drains to capture rain and slow the discharge of runoff from the roof. It retains water sometimes many inches in depth (blue) on the roof temporarily. It is used primarily for retrofitting existing buildings in dense urban areas.

Comment: The proposed BPS code only requires the least expensive option, Ecoroofs. And as I previously submitted, my revisions would provide developers flexibility. There are numerous manufacturers, with wide range of prices for their products, as with most industries.

Research

Since the first research project in the US was conducted here in Portland from 1996-1998 there have been hundreds of tests and experiments across the US to determine

and document the benefits of greenroofs. However, even within the category of Ecoroofs there is a wide range of design choices and as researchers in Austin TX. so aptly put it, “All ecoroof are not equal.”

Not only do ecoroofs vary, but also research varies and the quality of both is subject to many variables. There has been debate, but in general most knowledgeable professional agree that ecoroofs provide multiple benefits, which differ with climate and other influences. Most also agree that as a single technology no other approach has so many attributes, at such an affordable cost to mitigate urban problems.

Comment: However, local research is still needed to help improve design, construction and O&M and reduce costs. More research is needed that can help answer questions of ecoroof efficiencies associated with urban issues. PSU has been and hopefully will continue in this regard and others are partnering with PSU such as the GRIT organization.

Incentives

Although the BES incentives no longer exist, incentives are certainly helpful for the development community when they are being required to install relatively new technologies like the ecoroof. Many cities in Germany and Austria used temporary incentives when they began to require ecoroofs in the 1980s. These incentives were phased out over several years as the industry matured and costs came down.
Comment: Property tax incentives are perhaps the most equitable approach.

I would like to use Mr. Ed McNamara’s Ramona Apartments project as a case study. At the August 9th hearing, Ed responded to questions about the pro and cons of ecoroofs. The following five comments are not quotes, are from my notes.
1. I don’t like spending money when I don’t have to.
2. I’ll use an ecoroof if that’s the only choice I have for stormwater management.
3. Ecoroofs shouldn’t be a mandate, let the developer decide.
4. From observations on my ecoroof, birds appear to like it, who else is planting all the blackberries.
5. Seems habitat benefits would be better if we had more ecoroofs.

He didn’t mention his project costs, which according to his BES project report were:
$105,952 membrane (this is the cost for a conventional roof)
218,052 for ecoroof portion (this is added cost)
60,126 for structural upgrades and design (This is added cost)
$384,130 total costs ($12.16 psf)

As a recipient of the BES financial incentive the project received $157,985 ($5.00 psf) deducting that from the total is $226,145 and subtracting the membrane cost which he would have to do anyway leaves $118,202 additional cost, but he didn’t

have to do other stormwater approaches at an estimated savings of $40,000 for a net total additional cost for the ecoroof of $78,202 ($2.48 psf). This is the amount the project paid extra for something it didn't have to do. Quite commendable!

Comment: Ed's comment #3 about letting the developer decide, if all developers were like Ed there would be many more ecoroofs, but they aren't all like Ed. Temporary incentives can be a valuable tool to help make the transition for developers.

Costs

This is an area of considerable difference across the US. For example one study comparing white with greenroofs concluded that the break-even point on an ecoroof would be in 20 years. Another study concluded that there would never be a break-even point for the ecoroof compared to a white roof.
Comment: There are numerous seemingly conflicting evaluations and one must be careful to assure that apples are being compared to apples.

Some studies do not always quantify the benefit leveraging opportunities associated with ecoroofs. If the ecoroof is used for stormwater management then the ecoroof maintenance costs are for stormwater, which would have to be done if the project used an alternative stormwater management approach.

Comment: The Ramona is an excellent example of what an ecoroof costs in Portland and the comparison with conventional roofing costs. It is my opinion that if this project were to be done today there are several areas to reduce ecoroof costs.

Purpose

A question asked of me at the hearing was what are the most important benefits of an ecoroof. They are; durability, extended life, urban heat island mitigation, stormwater management, building insulation, wildlife habitat, noise attenuation, solar panel efficiencies, evaporation, oxygen production and more. I suggest we need all of these benefits.

Thank you very much for your community service!
Tom Liptan