

# Solutions-Oriented Workshop Summary

## Sim Van der Ryn and Regional Experts Panel

October 10, 2013

## Introduction

### Background

The King County GreenTools Sustainable Cities program is celebrating its fifth year of delivering a wide range of educational and inspiring green building programming to Cities and County staff within the King County region. One of the cornerstone components of the program is the monthly Roundtable series, where speakers representing thought leadership, practical expertise, and/or local implementation present to a mix of cross-jurisdictional participants in a peer-to-peer, dialogue-friendly setting.

The Sustainable Cities program has several key partners, including Island Press, who are instrumental in bringing illuminating authors to the Roundtable events. The October 2013 Roundtable featured Island Press author Sim Van der Ryn, one of this century's most exceptional visionaries in ecological design, to speak at the Roundtable event, and also participate as a core panelist in a solutions-oriented workshop featuring a local project following the Roundtable.

### Workshop Overview

King County GreenTools solicited descriptions of built environment projects in King County, to dive deep and discuss in an intimate workshop with **Sim Van der Ryn**, and a panel of local experts **Alexandra Ramsden** and **Jennifer Barnes**, from **Biomimicry Puget Sound**, and the **GreenTools Team**, along with a small group of interested industry, government and community leaders. The eligibility requirements of the project were that they must be at a logical point where advice was needed and could be incorporated, and that representatives were able to participate in the two-hour workshop, and could commit to sharing results back with the GreenTools team. Ideally, the selected project would address the 2013 Sustainable Cities theme of 'Beyond Net Zero: Resilience, Regeneration and Social Equity.'



GreenTools Program Manager Patti Southard facilitated the workshop

### Selected Project Synopsis: The Redmond Senior Project

King County GreenTools selected **The Redmond Senior Project**, a senior housing and commercial tenant space in Redmond, submitted by SAGE Architectural Alliance. The team described the project as follows in the submitted project synopsis:

*The Redmond Senior Project consists of 75 units of affordable senior housing plus a commercial tenant space. The property is located in downtown Redmond, across from the library and is owned by the City of Redmond and the development is being overseen by ARCH. The developer/ operator team is Shelter Resources, Inc and Providence. The project is in Schematic Design, having had the initial Entitlement pre-application meeting*

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*with the City and the initial Design Review meeting on Thursday, October 3rd. The workshop was an ideal time to receive design advice that could be incorporated into the design. The building is already planned to adhere to the Evergreen Sustainable Design Standards (ESDS v2.1).*

SAGE identified the following three key barriers that they hoped the workshop could specifically address, by finding affordable suggestions to these challenges and meeting the desired outcomes outlined below:

## Challenges

1. Redmond offers substantial incentives for storm water infiltration and without site infiltration, the project storm water fees are well over \$100,000 with high monthly fees as well. The problem is that the site is very tight and a roof garden is seen as not an affordable solution.
2. The site has two fire lanes, they contribute to a lot of impervious surface. The fire marshal says that they have received a lot of submittals for pervious fire lane surfacing but none has ever met their requirements.
3. Determine if there are sustainable means of reducing life cycle costs beyond the Evergreen Sustainable Design Standards already planned. The challenge is finding means that don't require sizable initial costs – this is due to the project funding constraints.

## Desired Outcomes

1. Figure out how to creatively infiltrate a significant amount of storm water on the site to reduce storm water fees.
2. Provide a healthy living environment for residents.
3. Reduced life-cycle costs with minimal increased construction costs

## Participants

30 participants representing 15 different organizations, businesses or governmental jurisdictions attended the workshop, held at the LEED Silver Technology Access Foundation in White Center, Seattle. Project representatives included design team members from SAGE Architectural Alliance as well as representatives from the City of Redmond.

## Synopsis of Ideas

During the workshop's two hours, the panelists and the audience presented a wealth of ideas, suggestions, resources, and considerations for the project team. The following summarizes the top five encompassing 'Big Ideas':

- **Model the forest for water solutions:** Look for distributed, tiered solutions for rainwater and stormwater, instead of a one stop solution. This will provide a depth and breadth of solutions that also bolster the community's resilience and appreciation of water as a resource, while offering some artistic and community building solutions.
- **Take a biophilic approach to integrate health and community:** Broaden the definition of 'community' to go beyond the planned tenant and occupants, and look at and celebrate the diversity of the Redmond community as a whole: including intergenerational and multi-cultural diversity. Design in opportunities for this whole community to engage with nature at the site – including plants, animals, natural viewpoints, etc.
- **Maximize on-site opportunities:** Take advantage of existing amenities and orientation for passive solar strategies and active community engagement, but also tap the history of the setting to create a richer and deeper sense of sense of place.

- **Focus on long-term operational savings:** Build in full life-cycle accounting when selecting materials and strategies, and operations and maintenance programming. Consider the avoided costs of a healthier environment for occupants in addition to the bottom line.
- **Tap the full community upfront and as an ongoing resource:** Engage the community during the design to kick off the building with a strong sense of community ownership (such as sponsorships for key green strategies, community art projects), while designing in ways for the community to stay involved over time as the tenants evolve and change (programs that require tenant involvement, 'living' art walls, etc.).

## Workshop Notes

The following is a list of all the ideas generated during the workshop, organized by the project team's desired outcomes. Specific product or contact resources are also noted with an orange bullet.

### Creatively infiltrate a significant amount of storm water on the site to reduce storm water fees

#### Distributed small systems

- Edible landscape on-site/ gardening on-site (this could tap into the likely 'first generation of tenants' that come from a background of victory gardeners)
- Malmo, Sweden – resource for variety of green roof options
- Vertical gardening/greenwalls
- Think of the building as a forest system and take a multi-tiered approach
  - Distributed solutions with multiple smaller strategies
  - Artistic garden/water features as solution/use
  - Look for opportunities to increase evaporation (in addition to infiltration) Kirkland zHome/YWCA as a good example of a project mimicking a natural forested state, which raingarden systems, which also used Salmon Safe as a certification tool
- Stormwater to plastic contained fiber structure
  - "Silvia Cells"
  - "Forterra" boxes
- Individual retention pond simulations
- Really look at where stormwater is currently going to understand the flows
- Find engineer design advocates for porous concrete
  - (Vicki Colgan, Department of Ecology, may be able to help identify advocates)



*Project representative Valerie Thiel provided an overview of the project*

#### Explore political willingness for progressive solutions

- Consider what's needed to create cultural shifts to move political willingness to explore different options (with fire marshall, road widths, etc.) King County GreenTools will provide a road width study to support these efforts.

## Design solutions that use water as a resource

- Look for rainwater capture opportunities
  - Added benefit of offering ‘passive survivability’ resources
- Look to the roof as a source of free energy and place for water capture/evaporation
- “Blue roof”
- Lower areas of building (tiers) have lower weight restrictions = opportunity for small systems to capture rain
- Percocrete – organic compound added to concrete
- Don’t include garbage disposals in design (wastes potable water)

## Provide a healthy living environment for residents

### Early Occupant/Tenant Engagement

- Identify optimal tenants/service providers, and also identify those that are not ideal candidates for tenant space (such as dry cleaners, because of health impacts)
- Use a green lease to build in healthy operations and maintenance provisions, but also as an opportunity to help engage tenants for affordable solutions to manage green strategies that also provide positive social benefits (such as “management of green spaces” as an optional component in exchange for reduced rents)
- Use an integrated process to engage prospective tenants
- Reference any post-occupancy studies for seniors
- Consider occupant needs during emergencies (ie. ease of using stairs to get to higher ground, or out of the building, etc)
- Plan for and design in opportunities for an Eco-docent to be a resource for tenants
- Plan for User Manuals/Occupant Engagement Tools

### Visual and Acoustic Comfort

- Consider acoustic needs of audience when selecting materials (choose materials that absorb sound)
- Allow as much natural light into corridors as possible

### Thermal Comfort and Affordability

- Consider unique needs of seniors to allow for a range of climate control options such as:
  - Added thermal needs due to blood thinning medications
  - Desire to have control over thermal comfort, with low-tech, easy to use technologies
  - Individual energy meters may be useful, as long as they are not complicated
  - Many off the shelf energy use dashboards are affordable
- Explore Passive Haus strategies to increase thermal comfort at low operating cost
- Under floor air ventilation coupled with radiant heat is an affordable and very comfortable solution
- Opt for hard flooring that absorbs acoustics over carpet (because of health considerations), with floor rugs/carpet tiles (note – pay special attention to any trip hazards with carpet edges on hard flooring)
- Cushion flooring (that isn’t carpet) – underlays for cork, etc.
- Note that Heat Recovery Ventilators (HRV) don’t make sense until the envelope is super tight (i.e. beyond conventional envelope techniques, such as Passive Haus)
- King County Wastewater Treatment Division has piloted a system to transfer heat from sewer mains, contact is Jesse Israel

- Big Ass Fans – great solution for improving circulation
- Panasonic Whisper Green Fan – huge energy saver with low noise

## Indoor Air Quality

- Reference the Red List Materials (Living Building Challenge) for healthy materials selection
- Avoid PVC/laminate countertops, consider linoleum instead
- Rock wool and recycled denim for insulation

## Biophilic Opportunities

- Consider provisions for pets in design and programming for therapeutic benefits of pets and caring for animals, opportunities to engage a broader outside community, etc.
  - Bird houses/bird attractions visible from windows
  - Access to nature on and beyond the site that also ties into opportunities for tenants to participate in urban agriculture (chicken coops, etc.)
  - Look for ways to involve the nearby day care (learning opportunities, multi-generational interaction), such as a dual program for caring for chickens, collecting eggs, etc.
  - Ensure connectivity to the dog park accounts for pedestrian, wheelchair, and walker needs.
- Create indoor green spaces, indoor water “spaces” (considering safety needs, particularly if open to children)
  - Solterra System is a local company for green walls, green art
  - Landscape planning that brings in scent in gardens, along walkways
  - Dr. Cathy Wolf – University of Washington (study on healing with vegetation visible from windows)
  - Department of Health
  - Reference indigenous habitat in design and art

## Activated Living Space

- Activate stairwells and hallways to promote physical activity and tie to site history (using art, windows with views, signage on health benefits of walking/stairs, or other social interaction opportunities), while keeping in mind tenant needs (seating areas along hallways or at stairwell landings, etc.)
- Design in multi-purpose rooms with flexible space arrangements – they don’t all have to be big!
- Dance space

## Place Making

- Conduct demographics research to really understand the anticipated and diverse needs of potential residents (Before, including, and after baby boomers) Demographics presentations and research from Mitchell Silver, chief Planning and Economic Development Officer, Raleigh, North Carolina
- Explore City of Redmond demographics and celebrate culture in design and programming
- Look at physical flow of the site, past uses/flows, at a bigger scale (site history – blueberry farm!)
- zHome and YWCA as examples for integrating flow of the site into the design (water as a theme)
- potentially using the Salmon Safe certification framework.
- Consider the potential for mixed tenant base(not just seniors) for full community integration
- Look for opportunities to engage tenants in artistic expressions of themselves, their history, and family
  - Art that incorporates tenants family photos

- Revolving gallery – integrate seasonally with urban farms
- Local brick artist who creates historical murals
- Mural or mosaic (by number) for whole community that evolves with new tenants
- Really think about what you want the building to say, and choose what you'll be a leader in and make a statement about it.
- Community cooking area on-site
  - Dig into communal living opportunities
  - J. Walles Antioch – shared cooking for multiple units

## Reduced life-cycle costs with minimal increased construction costs

### On-Site Opportunities

- Passive solar opportunities – site faces west
  - Need solar control on western façade, solar louvers
- Western shading, vertical trellis with deciduous plantings
- Explore small scale wind and solar on site opportunities

### Life-Cycle Accounting

- Use LCCA for full life cycle accounting
- Explore the city would consider “evaporation credits”

### Creative and Local Funding Resources

- Funding research sources:
  - University of Washington Service Learning Program can help find funding
  - Lake Washington Vocational Technical College
  - Antioch University, Jonathan S
- Built Green waives certification fees for affordable housing
- Grants available to offset multilayered approach
- King County Housing and Community Development program: “Call early, Call often”
- Tap private resources in Redmond to fund green strategies
  - Creates community integration
  - Marketing opportunities and recognition
- King County Green Community funding

### Cost reduction opportunities

- Consider SIPs
  - Ecovillage in California as an example that used SIPs
  - Ichijo – local SIPs manufacturer
- Recycled light fixtures – don't all have to be homogenous
- Reach out to King County Technical Assistance for salvage materials support (Kinley Deller)
- Consider everything that falls on the site as a resource
  - Sun – solar ready roof provision (Seattle code ex)