

AGENDA: LOW-IMPACT DEVELOPMENT TECHNIQUES FOR BUILDINGS

October 8-9, 2014

WSU Puyallup Research and Extension Center • 2606 W Pioneer • Puyallup, WA

Day 1

8:30-9:00 Introduction

- Overview of course and instructor introductions
- Course goals
- Overview of need and current status of LID in Puget Sound
- Overview of LID principles and practices

Curtis Hinman, Herrera Environmental Consultants

9:00-9:30 LID for Buildings Basics

- Green roofs
- LID foundations
- Cisterns

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9:30-10:30 LID Foundations Design and Construction

- Siting considerations
- PIN design
- Construction process
- Roof water drainage strategies and PIN foundations

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10:30-10:45 Break

10:45-12:00 LID Foundations Design and Construction (continued)

- Inspection and verification during construction
 - Timing and procedures
- Operation and maintenance
 - Routine activities
 - Non-routine activities
- Flow control credits

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12:00-1:00 Lunch

- 1:00-2:30 **Rainwater Harvesting (residential)**
- Tools for determining water needs and system sizing
 - Collection
 - Filtration
 - Storage
 - Water rights
 - Operation and maintenance
 - Routine activities

Michael Broili, Living Systems Design

2:30-2:45 **Break**

- 2:45-3:30 **Rainwater Harvesting (commercial)**
- Tools for determining water needs and system sizing
 - Collection
 - Filtration
 - Storage
 - Water rights
 - Operation and maintenance
 - Routine activities

Kathryn Thomason and Sean Darcy, Contech Engineered Solutions

3:30-4:00 **Panel Discussion**

Michael Broili, Kathryn Thomason, Curtis Hinman

Day 2

- 8:30-10:00 **Green Roof Design and Construction**
- Extensive vs. intensive designs
 - Typical cross-section components
 - New construction vs. retrofit
 - Plants and engineered growth media
 - Construction process

Brian Taylor, AMEC

10:00-10:15 **Break**

- 10:15-11:15 **Green Roof Design and Construction (continued)**
- Inspection and verification during construction

- Timing and procedures
- Remedies for failing sites
- Operation and maintenance
 - Routine activities
 - Non-routine activities
- Strategies and agreements
 - Timing and procedures
 - Remedies for failing sites

Brian Taylor, AMEC

11:15-12:00 Flow Control and Water Quality Treatment

- Mechanisms
- Performance
- Special considerations
- Long-term performance

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12:00-12:45 Lunch

1:00-3:00 Site Visit

3:00-4:30 Hydrologic Modeling

- Overview of hydrologic modeling
- Performance standards
- Modeling guidelines
 - Green roofs
 - Cisterns for detention
 - Cisterns for water reuse
 - Pin foundations
- Modeling tools and assumptions
 - Water balance
 - Design parameters
 - Accounting for slope
- Applications
 - Flow control
 - CSO reduction
 - Wetland protection

Robin Kirschbaum P.E. HDR, Alice Lancaster P.E., Herrera Environmental Consultants