

Sat-A08 **Green Wall Performance Evaluation, Technology Innovations, and Integrated Design**

Saturday 11:00 AM - 12:30 PM

Program Statement

Green walls offer expanded project scope, increased fees and heightened visibility for landscape architects - yet lingering concerns over viability, liability and efficacy have kept practitioners from adding green wall design to their professional service offerings. Four noted experts will address these concerns head-on, profiling the latest advancements in green façade and living wall systems.

Learning Objectives

1. Understand opportunities, responsibilities and liabilities associated with green wall design.
2. Learn the importance of performance criteria when selecting a project-specific green wall system.
3. Discover the latest research findings and technological advancements in green wall technology.
4. Learn how to integrate green walls into building and site design to achieve direct quantifiable benefits.

Introduction

Green walls, whether green facades or living walls, present a broad range of opportunities and challenges for landscape architects. We begin by defining these in terms of current revenue; size of industry both domestically and internationally; and typical professional fees for green wall design, installation and maintenance. There are liability concerns for landscape architects, generally addressed through a multidisciplinary approach, collaborating with architects, structural engineers and design/build contractors. Public projects often require division of labor and multiple mobilizations, so must be managed carefully. We will highlight architectural, structural, mechanical, electrical, plumbing and horticultural considerations.



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Course Outline

I. Performance Criteria: Using research and analysis to select the right system

- a. System Typologies: inherent strengths and weaknesses
- b. Green Façade System Logistics: installation/growing/maintenance process
- c. Living Wall System Logistics: installation/growing/maintenance process
- d. Published research, studies currently underway and information needed
- e. Importance of first-hand observation and analysis: what to look for, who to ask

II. Green Wall Technology and Integrated Design: Functional design and optimum performance

- a. Living architecture, restorative buildings, biophilic design and emerging influences
- b. Particularly innovative designs, realized and proposed
- c. Latest advancements in product design, monitoring and controls
- d. Using remote monitoring and building management systems for quantifiable results
- e. Evolving role of the landscape architect in green wall design

III. Designing to Ensure Longevity: Addressing maintenance needs during the design process

- a. Most common reasons for green wall failure and how to avoid
- b. Providing access for installation and maintenance of plants and infrastructure
- c. Horticultural considerations for plant selection and planting design
- d. Anticipating change as green walls mature
- e. Defining operating costs and setting realistic expectations for the client

IV. Wrap-Up: Where the Green Wall Industry is headed

- a. U.S. vs. Asia and Europe
- b. Market segmentation: commodity vs. customization
- c. Aesthetics vs. performance



Presenters

Randy Sharp, ASLA - Principal, Sharp & Diamond Landscape Architecture, is perhaps the most experienced green wall designer in North America, with over 100 green wall and roof installations to his firm's credit, many over a decade old.

James Sable - Executive Vice President, greenscreen, is a leading expert in research and development, product development, performance evaluation and technological advancement of green wall systems. Since 1997, James has been integral to the growth of greenscreen, a world leader in green wall systems.

Scott Mehaffey, FASLA - Executive Vice President, Sage Vertical Garden Systems, is a landscape architect, product developer and technical consultant for Sage – a manufacturer of hydroponic living wall systems for interior and exterior use.

Denise Eichmann - Senior Project Manager, Ambius North America, is one of the most experienced green wall designers, installers and maintainers in North America, having worked with every major commercial system in various challenging settings.

References

1. Cantor, Steven, 2008, *Green Roofs in Sustainable Landscape Design*, W. W. Norton & Company, New York
2. Dunnett, N, Kingsbury, N, 2008, *Planting Green Roofs and Living Walls*, Timber Press, Inc, Portland
3. Kellert, Stephen R., Heerwagen, Judith H. and Mador, Martin L., 2008, *Biophilic Design: The Theory, Science, and Practice of Bringing Buildings to Life*, John Wiley and Sons, Inc., Hoboken
4. Harris, R, Clark, J, & Mathney, N 1999, *Arboriculture; Integrated Management of Landscape Trees, Shrubs, and Vines*, 3rd edn, Charles Stewart, Upper Saddle River.
5. Bird, Richard, *Glorious Climbers (Guide to Growing...)*, 2000, Lorenz Books, London, UK
6. Sharp, Randy, 2007 *Ecological Site Development: Regional Strategies for Design, Construction and Maintenance*, www.metrovancouver.org
7. Green Roofs for Healthy Cities, 2008 *Introduction to Green Walls* – www.greenroofs.org
8. Ferguson, Nicola, 2005, *Right Plant, Right Place: Over 1400 Plants for Every Situation in the Garden*, Fireside Books, Simon & Schuster, New York
9. Green Screen: Considerations for Advanced Green Façade Design - http://www.greenscreen.com/direct/Considerations/AdvancedGreenFacadeDesign_Fall12.pdf
10. Energy/Water Conservation with Green Walls Technology - <http://citesalive.org/index.php/agenda/completeagenda/sessiondescriptions#g1>
11. Green Wall Plants and Structures Studied for Energy Savings - <http://www.agnr.umd.edu/Academics/departments/ENST/News/ecolab/>