

## PRELIMINARY AGENDA



Presented by:

Congress Plaza Hotel, Chicago, IL  
Register now at [www.citiesalive.org](http://www.citiesalive.org)



## **Introduction**

Building a Legacy of Outstanding Performance is the primary theme for this year's 10<sup>th</sup> Anniversary *CitiesAlive Green Roof and Wall Conference* in Chicago. A living example of legacy urban planning, Chicago has the most green roof coverage in North America. This would have been impossible without maintenance measures and performance evaluations to protect investments in green infrastructure and to build exceptional progress. The development of performance standards is integral to the growth of any industry. Join us in Chicago and help shape the future of our industry!

**For more information and to register please go to: [www.citiesalive.org](http://www.citiesalive.org)**



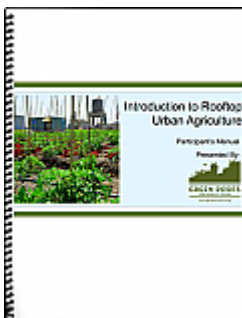
Earn your continuing education and professional development hours at *CitiesAlive!*  
GRHC is a registered continuing education provider with AIA CES, LA CES, GBCI, RCI and APLD.  
GRPs can earn 11.25 continuing education credits by attending.



**Introduction to Integrated Water Management for Buildings and Sites**  
**Jeffrey Bruce, GRP, FASLA, LEED, ASIC, President, Jeffrey L. Bruce & Company**  
**Chair, Green Roofs for Healthy Cities**

Developed jointly by GRHC and American Society of Irrigation Consultants (ASIC) committee members, this course provides technical and economic information on the design and performance of a fully integrated site and building water management system based on the “Net Zero Water” concept. This approach promises to significantly reduce the consumption of potable water in buildings, reduce discharge to municipal waste water systems, and save on municipal energy by reducing the amount of potable water treated at municipal facilities. The recognition of the connection between water management and energy conservation is emerging as a new opportunity in integrated management systems. Case studies and demonstration projects illustrate issues and opportunities associated with: costs and benefits, design and engineering practices, installation and maintenance requirements, and efficiency and performance.

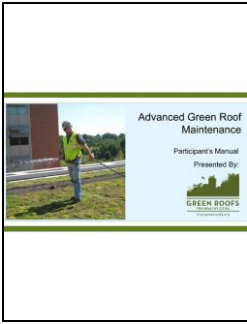
**Instructor Bio:** Jeffrey Bruce, FASLA, LEED, ASIC, GRP, is owner of Jeffrey L. Bruce & Company, a national landscape architectural firm. Founded in 1986, JBC provides highly specialized technical support to many of the nation’s leading architectural and landscape architectural firms on a wide variety of project profiles including engineered soils, green roof technologies, urban agronomy, performance sports turf, and irrigation engineering. Jeffrey has received over 60 separate design and leadership awards (including GRHC Awards of Excellence). His firm’s award winning projects have been published 85 times. He is licensed to practice in 20 states and has served as an invited lecturer, visiting critic, and speaker at numerous conferences and trade shows. In 1996, he was elected Fellow of the American Society of Landscape Architects. He is a board member of the American Society of Irrigation Consultants and Chair of Green Roofs for Healthy Cities. He was a founding member of the Sports Turf Committee for the National Interscholastic Association of Athletic Administrators.



**Introduction to Rooftop Urban Agriculture**  
**Ben Flanner, President, Brooklyn Grange**

Learn about multiple approaches to growing food on rooftops through design and maintenance principles, and case studies drawn from across North America. This course examines: the diversity of physical applications of urban agriculture and the growing technologies that apply; the social, environmental and economic benefits of urban agriculture and rooftop farming; the governance, personnel and economic options for implementing urban agriculture and rooftop farming systems and operations; the conditions that lead to a successful urban agriculture project; strategies for overcoming common challenges associated with developing a rooftop farming projects; and basic installation and maintenance principles.

**Instructor Bio:** Ben Flanner is the head farmer, CEO, and co-founder of Brooklyn Grange, a rooftop farm business in based in New York City. A pioneering urban farm operation, the business produces vegetables, herbs, and honey on intensive green roofs, and sells its produce via restaurants, farmer’s markets, and CSAs. Brooklyn Grange is widely recognized as the leader in rooftop soil farming and as an exceptional green and community minded business. Prior to founding the Brooklyn Grange, Ben co-founded and managed the Eagle Street Rooftop farm. He has a degree in Industrial Engineering from the University of Wisconsin, and prior experience in consulting and marketing for the finance industry. The Brooklyn Grange received the LICBDC Green Business Award in 2010, and the Green Roofs for Healthy Cities Award of Excellence in 2011. He was born and raised in Milwaukee, Wisconsin and currently resides in Brooklyn.



## Advanced Green Roof Maintenance

**Nathan Griswold, ASLA, GRP, Senior Garden Roof Technical Sales Coordinator, American Hydrotech, Inc.**

**Andy Creath, LEED AP, President, Green Roofs of Colorado**

Advanced Green Roof Maintenance is a half-day course created to assist designers, landscape contractors, building owners, facility managers, roofing consultants, roofing contractors, and Green Roof Professionals (GRPs) with an important but often overlooked aspect of green roofs: maintenance. This course examines design phase considerations; best practices for planning, budgeting, and implementing maintenance procedures; and approaches for rehabilitating green roofs that have been subject to maintenance neglect. Learn how to develop maintenance plans, contracts, and inspection reports that work in concert with warranty requirements.

**Instructor Bio:** Nathan Griswold, ASLA, GRP, earned a Bachelor's Degree from Michigan State University in Landscape Architecture, where he specialized in landscape architecture's role in sustaining and developing a healthy environment. He also has Associate Degrees in plant science and landscape and nursery development. Nathan has worked on hundreds of green roofs with American Hydrotech and has been active in Green Roofs for Healthy Cities (GRHC) since its inception, co-chairing GRHC's Advanced Green Roof Maintenance committee. Nathan is a long-time member of the American Society of Landscape Architects, was one of the nation's first to achieve his GRP accreditation, and is currently working toward becoming a LEED-AP and a certified PV and wind turbine site assessor.

**Instructor Bio:** Andy Creath is the owner of Green Roofs of Colorado, a firm which provides green roof design, installation, maintenance and consulting. He sits on the board of the Green Infrastructure Foundation and is a founding member of Green Roofs for the West, GROWWEST.

10:00 – 12:00 NOON

**Green Roof Professional (GRP) Examination**



**Green Roof Professional (GRP) Examination (Must register before October 3, 2012)**

12:30 PM – 4:15 PM

**Afternoon Professional Development Courses**



## Integrated Water Management for Buildings and Sites III

**Jeffrey Bruce, President, GRP, FASLA, LEED, ASIC, President, Jeffrey L. Bruce & Company Chair, Green Roofs for Healthy Cities**

Sponsored by



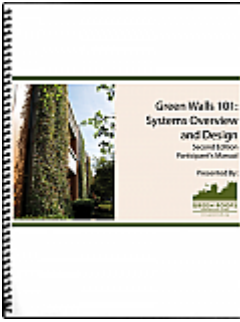
The desired outcome of the Integrated Water Management Educational Series is to capture the most advanced concepts and technologies available in this emerging practice area there by demonstrating to the construction industry and public policy makers the opportunities inherent in a fully functional integrated site and building water management system based on the "Net Zero" concept. This training course is the third in the series and will focus on water storage and system components. Elements covered in the lecture and the resource manual will include:

- Basic Water Harvesting System Components
- Pre-treatment, First Flush Diverters & Leaf Screens
- Storage Tanks & Cisterns
- Principals of Water Quality during Storage
- Inlet Calming, Bypass, Overflow & Other Storage Devices
- Stabilization of Harvested Water
- Selecting the Right Storage Option
- Best Management Practices
- Cistern Maintenance



The course will be developed and delivered by Jeffrey Bruce, Jeffrey L. Bruce and Company on behalf of GRHC and ASIC.

**Instructor Bio:** Jeffrey Bruce is owner of Jeffrey L. Bruce & Company (JBC). Founded in 1986, JBC provides highly specialized technical support to many of the nation's leading architectural and landscape architectural firms on a variety of project profiles including engineered soils, green roof technologies, urban agronomy, performance sports turf, and irrigation engineering. Mr. Bruce has received over 60 separate design and leadership awards.



## Green Walls 101: Systems Overview and Design (2nd Ed) Melissa Daniels, Plant Connection Inc.

This updated version of our *Green Walls 101: Introduction to Systems and Design* course discusses design and construction best practices for green facades and living walls, as well as the latest research findings on the environmental benefits of these technologies.

- Determine major functions and components of green walls.
- Describe characteristics and assess advantages of different green wall systems.
- Understand market drivers encouraging green wall implementation in North America.
- Understand how to design green walls for maximum benefits and LEED point.

**Instructor Bio:** Melissa Daniels, CNLP, has been in the nursery and landscape business for 20 years. While attending Carnegie Mellon University in Pittsburgh, PA in 1987, Melissa started and operated her own landscape design and maintenance firm in Westhampton Beach, NY. Mrs. Daniels forayed into the publishing world in 1993. After several years of managing Beth Tondreau Graphic Design studio and as the production manager for Habitat Magazine, Mrs. Daniels eventually moved back into the field of horticulture. Starting as an office manager, within three months Mrs. Daniels was promoted to become the sales and inventory manager for East Coast Nurseries where she helped take the company from \$1M to \$4M annual sales in three years time. Mrs. Daniels and Mr. Caggiano forged out together to start Plant Connection in 2002. Mrs. Daniels is a New York State Nursery & Landscape Association board director and the incoming President for the Long Island Nursery & Landscape Association. Mrs. Daniels represents the Long Island Horticultural industry on the Long Island Invasive Species Management Association review committee and the Suffolk County Water & Land Invasives Review Board. Melissa is a Certified Nursery Landscape Professional in the state of New York. Mrs. Daniels also serves on the Green Walls Committee for Green Roofs For Healthy Cities.

8:30 AM– 4:15 PM

**Full Day Green Roof Professional (GRP) Accreditation Training Courses (Includes lunch, and resource manual)**

Join more than **550 GRPs** worldwide by taking professional training courses at *CitiesAlive*.



## Green Roof Design 101: Introductory Course Virginia Russell, GRP, FASLA, LEED, University of Cincinnati

Green Roof Design 101 introduces participants to the numerous public and private benefits of green roofs and presents many of the tools and techniques needed to meet your green roof project objectives on time and within budget. Participants will learn about major design principles, types of green roof products and systems and their relevance, and the professions and competencies that are necessary for a successful green roof project. Includes a 100+ page course manual.

**Instructor Bio:** Virginia L. Russell is a Registered Landscape Architect, a Fellow in the American Society of Landscape Architects, and a LEED Accredited Professional. Her areas of expertise include green building techniques and technology, stormwater best management practices, and low impact development. She is an Associate Professor of Architecture at the University of Cincinnati, and she has been teaching sustainable design courses for twenty years.



## Green Roof Infrastructure: Design and Installation 201 Greg Raymond, GRP, Owner and Founder, Ecogardens

This course provides information that will equip you to project manage the design and implementation of a green roof. You will learn: essential qualifications for your project team; critical questions for your client (matching their objectives to design practicalities); how to identify building code/municipal permit issues; construction contract administration; liability issues (including insurance, waivers, guarantees etc.); design and implementation issues for new and retrofit buildings (including structural loading concerns, drainage, erosion control, stormwater retention, etc.); sub-contracting and scheduling concerns; and much more.



GRHC is a registered continuing education provider with AIA CES, LA CES, GBCI, RCI and APLD.  
GRPs can earn 11.25 continuing education credits by attending.

*CitiesAlive* Tours are your opportunity to explore unique and exclusive green roof and wall locations across the city, in the company of experienced professionals and featuring special guests on site. In honor of Chicago's renowned elevated train system "The El", the *CitiesAlive* Chicago Green Roof and Wall tours are named after the El Lines. (Locations are subject to change)

**Space is limited.** Register today. See additional tours on Saturday.

### **Orange Line**

#### Tour Sites

1. Lurie Garden - Michigan & Monroe Street
2. Chicago City Hall - 121 North LaSalle Boulevard.
3. Gallery 37 - 66 East Randolph Street
4. Chicago Cultural Center - 77 East Randolph Street
5. Aqua - 225 North Columbus Drive



### **Aqua Chicago**

Photo courtesy of Michael J. Curry, RLA, ASLA, GRP

### **Brown Line**

#### Tour Sites:

1. 300 W Adams - 300 West Adams Street
2. Chicago City Hall - 121 North LaSalle Boulevard
3. Gallery 37 - 66 East Randolph Street
4. Chicago Cultural Center - 77 East Randolph Street
5. Lurie Garden - Michigan & Monroe Street



### **300 W. Adams, Chicago**

Photo courtesy of Pat Maloney and Eco-Roofs, LLC

**Mayor's Welcome: Rahm Emanuel (Invited)****THE FUTURE OF LIVING ARCHITECTURE: A MULTIDISPLINARY ROUNDTABLE PERSPECTIVE****Speakers**

**Steven Peck**  
GRP, Honorary ASLA, Founder and  
President, Green Roofs for Healthy Cities

**Moderator: Steven Peck, GRP, Honorary ASLA, Founder and President, Green Roofs for Healthy Cities**

Steven W. Peck is the founder and President of "Green Roofs for Healthy Cities". For well over a decade, Mr. Peck has conducted public policy research on a variety of environment and economy issues with a focus on environmental technology transfer and public policy. He is a founding member of the World Green Roof Network that encourages the formation of green roof industry associations throughout the world, and the Green Infrastructure Foundation Ontario Coalition. In 2006, Steven won the Canadian Urban Institute Urban Leadership Award for his efforts to promote 'City Livability'. He has authored or co-authored numerous reports and written extensively on the topic of green roof design, policy and research and has spoken on the subject at conferences throughout North America and internationally. He is an honorary member of the American Society of Landscape Architects (ASLA), and participated on the committee which developed the first and only form of accreditation for those working in the green roof industry, the Green Roof Professional (GRP) designation.



**Jeffrey L. Bruce**  
FASLA, GRP, President  
Jeffrey L. Bruce & Company

**Jeffrey L. Bruce, FASLA, GRP, President, Jeffrey L. Bruce & Company**

In addition to being the Chair of Green Roofs for Healthy Cities and the Incoming President of the American Society of Irrigation Consultants, Jeffrey Bruce is owner of Jeffrey L. Bruce & Company (JBC). Founded in 1986, JBC provides highly specialized technical support to many of the nation's leading architectural and landscape architectural firms on a variety of project profiles including engineered soils, green roof technologies, urban agronomy, performance sports turf, and irrigation engineering. Mr. Bruce has received over 60 separate design and leadership awards. Award winning projects of his firm, Jeffrey L. Bruce & Company, have been published 85 times. Licensed to practice in 20 states, he has served as an invited lecturer, visiting critic, and speaker at numerous conferences and trade shows.



**Nancy C. Somerville**  
Hon. ASLA, Executive Vice President/CEO  
American Society of Landscape Architects

**Nancy C. Somerville, Hon. ASLA, Executive Vice President/CEO American Society of Landscape Architects**

As Executive Vice President and Chief Executive Officer of the American Society of Landscape Architects (ASLA), Nancy has made green roofs a strategic organizational program for the Society, leading and supporting more than 18,000 members and 48 chapters, in all 50 states, US territories, and 42 countries around the world, to become leaders in the emerging green roof market.



**Paul Farmer, FAICP, CEO**  
American Planning Association (APA)

**Paul Farmer (Invited), FAICP, CEO, American Planning Association (APA)**

Paul Farmer is Chief Executive Officer of APA and AICP. He has primary responsibility for the long-term strategic direction of the association, in concert with elected leadership. He is responsible for representing the leadership of the association, its members and the interests of planning with partners and with the public. He is the prime spokesperson for APA. He is also president of the Planning Foundation.





## Thursday October 18 – CITIESALIVE TECHNICAL SESSIONS, TRADE SHOW AND RECEPTION

7:00 AM – 6:00 PM

### On-Site Conference Registration

There are four concurrent sessions featuring expert speakers on policy (P), design (D) and research (R) topics. The 'On the Roof With' sessions (currently under development) provides an opportunity to learn from expert panelists and discuss emerging issues and opportunities with experts. All of the sessions will be audio recorded and made available for purchase with technical papers through the *Living Architecture Academy*. Conference delegates receive a discount on *CitiesAlive Conference Proceedings*.

8:30 AM – 10:00 AM

### SESSION 1

#### Policy Track (1P)

#### Session 1 – Green Roof Programs: Lessons Learned from Austin, New York and Chicago

##### 1. Building a Green Roof Program in Hot, Drought-Prone Climates

Austin TX has launched a new green roof program. This paper details steps taken to build municipal support and address water use, quality, & other concerns in hot, drought-prone, climates.

**Co-presenter: Matt Hollon, Environmental & Conservation Program Manager, City of Austin, Watershed Protection Department**

Matt Hollon is an environmental planner with the City of Austin's Watershed Protection Department. He has a master's in planning and has worked in watershed protection since 1990, focusing on innovative and sustainable watershed protection strategies, such as rainwater harvesting, rain gardens, and green roofs, designed to mimic natural hydrology.

**Co-presenter: Eleanor McKinney, GRP, ASLA, President, McKinney Landscape Architect**

Eleanor McKinney, ASLA, GRP is the former Chair of the Green Roof Advisory Group and Design Commission in Austin, Texas. Her firm, McKinney Landscape Architect, has completed over six green roof projects. Austin City Hall won the 2008 Award of Excellence from Green Roofs for Healthy Cities.

##### 2. The NYC Green Roof Tax Abatement: Policy Lessons

This session assesses the New York City green roof tax abatement's efficacy during its 3-year pilot period, recommends improvements, and identifies lessons to inform other cities considering a green roof tax abatement.

**Co-presenter: Robert Crauderueff, Coordinator, S.W.I.M. Coalition**

Robert Crauderueff, Co-founder, S.W.I.M. Coalition; Master in City Planning, Massachusetts Institute of Technology. Eight years experience researching and implementing green roof and green wall policies and systems, including successful advocacy for the New York City green roof tax abatement and installing green roofs on residential, commercial and industrial properties.

**Co-presenter: Eric Dalski, Founder of Highview Creations**, Studied Environmental Economics undergrad, obtains certificate of environmental research and conservation from Columbia University, MBA candidate at Fordham University

##### 3. Chicago's Urban Heat Island Effect Ordinance and International Code Development and Implementation means Green Roofs

The Chicago Roofing Contractors Association worked in collaboration with the City of Chicago Staff on Chicago's 2009 Energy Code and Urban Heat Island Ordinance. The result has been a lot of 'Chicago Cooling'. This session covers the important aspects of development and implementation of the code.

**Presenter: William McHugh, Executive Director, Chicagoland Roofing Council – Chicago Roofing Contractors Association**

Bill McHugh is Executive Director of the Chicago Roofing Contractors Association and Chicagoland Roofing Council. He has spoken/written nationally on rooftop technologies to architects, specifiers, building owners and managers, building officials, also testifying at ICC and Chicago Code Hearings.

#### Design Track (1D)

#### Session 1 – Green Wall Projects

##### 1. Beyond Sedum: Combining Intensive Green Roofs with Green Walls

This presentation provides a detailed examination of a successful, complex green wall and intensive green roof project installed in 2011 at Community Health Center in Middletown, CT.

**Presenter: Nicholas Smith, National Account Manager, ZinCo USA**

As the National Account Manager with ZinCo USA, Nicholas has 11+ years in the roofing industry with an expertise in sustainable roofing technologies and an emphasis on green roof systems. He has managed some of the most high profile green roof projects in the US – both extensive and intensive from design to implementation. Nicholas maintains high standards in all aspects of green roof project realization in order to ensure steady growth for his company and the green roof industry as a whole.

##### 2. Green Walls in Northeast Mexico: A Cost and Maintenance Challenge

How to succeed developing and implementing a semi low-cost green walls system for a hot and humid climate in a city with a great deficit of green spaces.

**Presenter: Oswaldo Zurita Zaragoza, Landscape Architect, Biozotea**

Mexican Landscape Architect, age 33, director of Ecotono Urbano –landscape & urbanism practice- and Biozotea –green roofs and green walls company. Author of a book on native trees of Monterrey, Mx, published in 2009 (link). Pioneer in green walls in northern Mexico. Developed system, research plants and installed more than 20,000sq ft.

##### 3. Europe's Largest Green Wall. Tarragona (Spain), Water Treatment Leader

Innovated urban design project using a large green wall irrigated with waste water. Details about the process of design and construction of the wall, bracket supports, irrigation system, type of vegetation and maintenance.

**Co-Presenter: Rogelio Jimenez, Tarragona Council Architect**

Architect by Escola Tecnica Superior d'Arquitectura de Barcelona (1978). Partner of Ricardo Bofill-Taller de Arquitectura (1989), Taller USA, Taller Paris. Tarragona

City Council Architect (2005) His work includes high-rise buildings as well as large urban design projects in USA, France, Italy, and China. Highlighted projects: 77West Wacker, Chicago; Dearborn Center, Chicago; Project 2000, Chicago; Shepherd School of Music, Rice University, Houston; Boston Central Artery consulting, Boston. High speed train station and public piazza, Bologna Italy; Nan-Sha new city, China; Argelia new capital, Algeria; Espai Tabacalera, green wall and public park, Tarragona.

**Co-Presenter: Àlex Puig Coll, Garden Designer, Vivers Ter**

Àlex Puig is manager and owner of Vivers Ter, company established in 1989. Currently he is dedicated to design and build projects for green architecture, mainly green roofs and walls, specializing in two types of projects: in situ green waste water purification and buildings covered with vegetation. Master Gardener, Àlex Puig had studied in Germany, England and France.

## Research Track (1R)

### Session 1 – Plant Performance Research 1

#### 1. Thermal Characteristics of an Extensive Green Roof and a Gravel Ballasted Roof in a Semi-arid, High Plains Region of the U.S.

This research focuses on 30 months of monitoring environmental conditions, with an emphasis on thermal characteristics, for the green roof at EPA Region 8 Headquarters (Denver, CO) as compared to a "conventional" gravel ballasted roof in the proximate area.

**Thomas Slabe, Scientist, Environmental Protection Agency Region 8**

Tom Slabe is a biologist with the EPA, with previous experience in fish culture, botany, biomedical research, ecology, population biology, and most recently green roof research. Current interests include urban ecosystems, ecosystem services, water quality, green building design, and, as a daytime job, microbiology.

#### 2. New Plant Performance for 21st Century Green Roof Ecosystems (60 minute presentation)

Diverse and regionally appropriate plants exist beyond sedum. The panel will discuss a variety of new and seldom used green roof plants based on their research and field trials. Each presenter will share images and characteristics of regionally appropriate plants and engage the panel and audience in a discussion of plants for green roof ecosystems of the future and their performance.

**Co-presenter: Richard K. Sutton, FASLA, GRP, Professor, University of Nebraska**

Richard Sutton teaches landscape architecture and conducts green roof plant and media research at the University of Nebraska-Lincoln. As a registered landscape architect he consults on green roof planting and presented research about prairie-based green roofs in 2008, 2009, and 2010 at GRHC.

**Co-presenter: Bradley Rowe, Professor, Michigan State University**

Brad Rowe began conducting research on green roofs at MSU in 2000 and has focused primarily on plants (selection, environmental tolerances, nutrients, community development, carbon sequestration, and food production). He was the founding chair of the GRHC Research Committee and received the GRHC Excellence in Research Award in 2008.

**Co-presenter: Glenn Acomb, FASLA, Senior Lecturer, Department of Landscape Architecture**

Glenn Acomb, FASLA, teaches courses in sustainable construction and green roof technology. In 2006, he designed and manages UF's Green Roof, and conducts research in plants and media for green roofs in hot-humid climates, as well as wind uplift research. He recently received the FRSA/Earl Blank Fellowship in roof technology.

**Co-presenter: Jon Lambrinos, Assistant Professor, Oregon State University**

As a Landscape Ecologist, John Lambrinos evaluates appropriate designs for and quantifying the potential of ecosystem benefits from green roofs in the Pacific Northwest. He has published regionally focused studies on green roof irrigation and green roof plant trials.

**Co-presenter: Peter MacDonagh, Director of Science and Design, The Kestrel Design Group**

Peter MacDonagh's fieldwork, research and lecturing has taken him around the world. At Kestrel Design Group he provides a thoughtful, scientific approach with expert knowledge of native plants, soils and green roofs, and watersheds. Recent, acclaimed projects include Minneapolis' Target Center extensive green roof.

**Co-presenter: Richard Hawke, Plant Evaluation Manger, Chicago Botanical Garden**

As CBG Plant Evaluation Manager, Richard Hawke oversees research plots on the 16,000-square-foot green roof atop the Rice Plant Conservation Science Center. He evaluates dozens of native and cultivated plants for green roof culture. His program received the Award for Program Excellence from the American Public Garden Association in 2008.

## On the Roof With Track

### Session 1 – Green Roof and Wall Performance Standards

This session will provide an opportunity for participants to learn more about Green Roofs for Healthy Cities' efforts to establish performance standards and tools for green roofs and walls and to provide feedback on this emerging program.

**Co-Chairs:** Lois Vitt Sale, AIA, LEED Faculty, Senior Vice President, Wight and Company, Chief Sustainability Officer; David J. Yocca, RLA, FASLA, AICP, LEED AP, Principal, Conservation Design Forum

#### Panel:

Mark K. Morrison, RLA, LLA, FASLA, GRP, President & CEO, MKM Landscape Architecture PC

Dr. Bill Retzlaff, Associate Dean of College of Arts and Sciences, Southern Illinois University - Edwardsville

Jerry Smith, FASLA, LEED AP, Principal, Smith/Green Health Consulting, LLC

10:30 AM to 12:00 NOON

## SESSION 2

## Policy Track (2P)

### Session 2 – International Policy Development Experience from the Mountains of Switzerland to the Floodplains of Copenhagen

#### 1. From Pilot to Mainstream: Swiss Green Roof Policies

An overview to the different green roof policies of Switzerland. Showing the importance of having a strategy and incentives implementing green roofs into building codes/requirements.

**Presenter: Dr. Stephan Brenneisen, Zurich University of Applied Sciences**

Head of Green Roof Competence Center Zurich University of Applied Sciences President of Swiss norm committee developing green roof norms Consulting Swiss cities (Basel, Zurich) regarding building codes/requirements for green roofs.  
Leading several biodiversity research projects Research in developing new green roof technologies

2.

**Presenter: Tanya Müller Garcia, President, AMENA3**

### 3. What takes Green Roofs Urban Design to the Next Step?

Transforming the planning philosophy by means of Green roofs calls for passion, patience and politics.

**Presenter: Dorthe Rømmø, City of Copenhagen**

Dorthe Rømmø is a biologist who is working with Green Roofs in the Public Administration of Copenhagen. A major part of that work deals with bringing her knowledge about green roofs technology and philosophy into future modern sustainable and climate adapted city development considerations and decisions. She is World Green Ambassador for World Green Infrastructure Network.

## Design Track (2D)

### Session 2 – Extraordinary West Coast Green Roofs

#### 1. The Van Dusen Botanical Garden Visitor Centre Living Roof in Vancouver, B.C.

The VanDusen Botanical Garden Visitor Centre's creates a landmark facility while forging a harmonious relationship between architecture, landscape and ecology. It will become one of the Canada's first buildings to meet the Living Building Challenge 2.0. A goal that was achieved in part to a roof that is not simply green, but truly living.

**Co-presenter: Ronald P. Schwenger, GRP: Principal – Architek Sustainable Building Products Inc.**

Ron is educated in architecture and fine arts at the University of Guelph and continued education in marketing, advertising and communications at the British Columbia Institute of Technology. Following a short period as an architectural technologist and draftsman, Ron pursued a career path in creative marketing and communications. Early in 2004, Ron combined his years of marketing, branding and communications expertise with his original passion for architecture and formed Architek Sustainable Building Products, which was incorporated in 2007 and opened a Seattle office in early 2008. Ron has seven years of expertise in sustainable building envelope architecture, namely: green roof systems + green facades and living walls, renewable energy, water conservation and thermal performance. In 2010, Ron wrote the GRP exam after a number of years of experience and education in green roof systems and obtained his credentials as an accredited green roof professional. Ron is an active member of Green Roofs for Healthy Cities, an education provider for AIA and AIBC and is an associate member of BCSCA and AIBC. He continues to be highly involved in a number of industry organizations such as the Center for Architectural Ecology at BCIT.

**Co-presenter: Ken Larsson, BCSCA, CSLA, ASLA, Principal, Sharp & Diamond Landscape Architecture Inc**

Ken brings over 20 years experience and leadership to the design, planning, and project management of multidisciplinary civic/urban projects. Ken's interest is in placemaking and improving the public realm experience and connecting building to site. Ken's portfolio includes master plans, civic spaces, urban parks and regenerative places, high performance buildings, and infrastructure projects.

**Co-presenter: Cornelia Hahn Oberlander, OC FASLA FCSLA LMBCSLA, Cornelia Hahn Oberlander, Landscape Architecture**

Cornelia has been involved in the creation of innovative landscapes for over sixty years and includes collaboration with internationally acclaimed architects such as the late Arthur Erickson, Moshe Safdie, and Renzo Piano. A master at weaving the creativity art with the diligence of science, her landscape design concepts stem from a careful examination of the social, cultural and physical features of a given site. In June 2011 Cornelia was presented the IFLA Sir Geoffrey Jellicoe Award, which is the highest recognition for lifetime achievement in the profession of landscape architecture.

**Co-presenter: Jeremy Miller, Principal, Houston Landscapes**

As a natural entrepreneur, Jeremy brought years of experience in pioneering business ventures when Houston Landscapes was founded in 2004. Jeremy consistently brings imaginative insight and inventive creativity to his company and team. Eagerly embracing the growth of both traditional landscaping as well as green roofs, green walls, permeable paving systems, and other sustainable building practices for both the residential and commercial construction sectors of Vancouver, Houston Landscapes is now recognized as one of the leaders of landscape construction in Greater Vancouver.

#### 2. Trail Blazing in the West: The Journey of Creating a Large, Steep Green Roof on a Limited Budget with 24 Hour Public Access: The Saga of the Los Angeles Museum of the Holocaust

The 10,000 s.f., green roof on the Los Angeles Holocaust Museum, one of the steepest in the US, is a visionary response to the complex contemporary architecture of Belzberg Architects. The building exterior is all roof, curving in compound slopes up to 45 degrees and meeting the ground in places, requiring highly technical underlayment systems. Curvilinear concrete walls and undulating media emphasize the plants, making selection and long-term growth critical. Metaphors of hope, ecological goals, and intense technical challenges played into the design. We will review all in depth.

Combining contemporary architecture and landscape, the creation is a stylized, meadow with an ecological approach, a furry carpet of native and climate appropriate grasses. In addition to aesthetic considerations of color, texture, height and seasonal interest, the grasses were chosen for their tough, drought tolerant nature, their tendency to hold color throughout the summer, and their neat habit to mitigate maintenance.

The national team of Lisa Lee Benjamin (Evo Catalyst), Karla Dakin (K. Dakin Design), Charlie Miller (Roofmeadows), and John Greenlee (horticulturalist) demonstrated a successful, collaborative design model from concept to maintenance, working alongside client, architect and general contractor with an amazingly low budget and an incredibly high aesthetic value.

**Presenter: Karla Dakin, Principal/Owner, K. Dakin**

Dakin combines a MLA with years in the art world of NYC, SF, and LA. In addition to many ground landscapes, Dakin designed "Sky Trapezium," a roof garden for Museum of Contemporary Art / Denver and with Evo Catalyst, the green roof for L.A. Museum of the Holocaust, Los Angeles.

#### 3. Hamilton West Apartments 10 years of Lessons from a "teenage" West Coast Green roof in Portland

**Presenter: Tom Liptan, ASLA, Portland Bureau of Environmental Services**

Tom is a landscape architect and the Ecoroof Technical Manager in the Sustainable Stormwater Division with the City of Portland. His early experimentations with his own garage ecoroof in 1996 created the green roof movement in Portland. He is a winner of the Civic Award of Excellence for his leadership and perseverance in developing 'ecoroofs' in Portland.

## Research Track (2R)

### Session 2 – Plant Performance Research 2

### 1. Selection of Plant Species and Species Combinations for Northern Climates

Expanding the plant species selection for green roofs applications and analyzing the interactions involved in species combinations using tray and mat systems.

**Presenter: Dr. Youbin Zheng, Associate Professor, University of Guelph**

Dr. Zheng is an Associate Professor, Environmental Horticulture Chair at the University of Guelph. He is the principle investigator and team leader of the Guelph Green Roof Research Program. He has more than 20 years' experience in horticulture research, specifically in green roof technology, greenhouse and nursery plant production, and urban agriculture.

### 2. Hot, High, Dry And Green? – Research Supporting Green Roof Plant Selection For Arid Environments?

This presentation summarizes a five year research program on plant selection for green roofs in dry Mediterranean-type climates.

**Presenter: Dr. Claire Farrell, University of Melbourne**

Claire's a Postdoctoral Research Fellow based at the University of Melbourne working on the Green Roofs ARC Linkage Grant. Her research focuses on green roof plant and substrate selection, and green roof stormwater mitigation. She is particularly interested in using ecological plant communities as models for improving green roof performance.

### 3. Plant Species Findings from Three Water Conserving Green Roofs in Texas

Green roof performance varies by type of green roof and maintenance practices. This session explores plant performance outcomes from three green roofs maintained with sustainable practices in Fort Worth, College Station and Houston Texas.

**Presenter: Bruce Dvorak, Assistant Professor, Texas A&M University**

Bruce Dvorak is an Assistant Professor at Texas A&M University where he initiated the Interdisciplinary Green Roof Research Group. He has worked with green roofs since 1999, including the Chicago City Hall Green Roof. His research interests include sustainable green roof plant performance, temperature reduction, stormwater management and performance standards.

## On the Roof With (2G) Session 2 – Emerging Design and Technology trends in Rooftop Urban Agriculture

Chair: Keith Agoada, Director, Urban-Ag

Panel:

Lauren Mandel, MLA, Project Manager + Rooftop Agriculture Specialist, Roofmeadow (formerly Roofscapes, Inc.)

**12:00 NOON – 7:00 PM TRADE SHOW OPENS – LUNCH ON TRADE SHOW FLOOR (Included with full delegate registration)**

## 12:15 PM– 4:15 PM POSTER PRESENTATIONS ON TRADE SHOW FLOOR

12:15 PM	Green Roof Habitat Design in Washington DC - Christopher H. Myers, University of Maryland
12:30 PM	Survival and Water Retention of Ohio Native Plants on a Green Roof – Jill Bader, University of Cincinnati
12:45 PM	Effect of Fertilizer Variations in Vegetated Roof Runoff – Kathleen Hurley, University of Cincinnati
1:00 PM	Green Roof Ecosystem Services + Disservices: Nutrient And Metal Cycling – Ishi Buffam, University of Cincinnati
1:15 PM	Performance and Establishment in Extreme Climatic Conditions: The NWC Green Roof – Reid Coffman, MLA, PhD, Kent State University
1:30 PM	Evaluating Green Roof Coverage Of Various Green Roof Establishment Methods – Brittany Buckles, SIUE Biological Sciences
1:45 PM	Storm Water Runoff Of Residential Green Roof Systems – Katie Mosby, SIUE Biological Sciences
2:00 PM	Stormwater Management and Green Roofs in Washington D.C. – Wenjie Li, University of Maryland
2:15 PM	Uncovering The Potential Of The Urban Roofscape – Richard Hammond, University of Waterloo
2:30 PM	Preliminary data for performance of 24 genotypes in Ontario – Rumen Conev, PhD, Vineland Research and Innovation Centre
2:45 PM	Optimal Growing Substrate pH for Green Roof Plants – Youbin Zheng, PhD, MPhil, MAg, Bag, University of Guelph
3:00 PM	Collaborative Research To Enhance Green Roof Systems – Dr. Tobias Emilsson, ZinCo GmbH
3:15 PM	Sensor Based Irrigation And Fire Detection For Green Roofs – Greg Yuristy, University of Guelph
3:30 PM	Fertilization Recommendations for Green Roof Plant Production and Maintenance – Mary Jane Clark, University of Guelph
3:45 PM	Biophysical and Economic Benefits of Green and Conventional Roofs – Eileen Zerba, Princeton University
4:00 PM	Native Perennial Success on a Green Roof – Christopher White, Southern Illinois University Carbondale
4:15 PM	Creating Design/Maintenance Guide for Green Roofs in Arid Climates – Leila Tolderlund, University of Colorado Denver

## 2:30 PM – 4:00 PM COLLEGIATE CAFÉ ON TRADE SHOW FLOOR

\*New\* to *CitiesAlive* for this year is the 'Collegiate Café' which will highlight college students and their emerging green roof research that they have been working on. It includes a set of roundtables where a selected handful of college students will informally present and discuss their green roof research papers.

<p>Matt Bizjack, Stephanie Chaio, Qarina Mannaf, University of Chicago</p>	<p style="text-align: center;"><b>Mapping Public Accessibility of Green Roofs in Chicago</b></p> <p>Creating a database of publicly- accessible green roofs in the city of Chicago. The purpose of this is to share green roof information with the public in order to increase awareness of the Chicago's sustainable efforts and encourage people to see them first-hand.</p>
<p>Kelly Ksiazek, Northwestern University</p>	

	<p style="text-align: center;"><b>Searching For Chicago's Green Roof Analog Among The Dry Prairies Of Northern Illinois</b></p> <p>Searching for Chicago's green roof analog among the dry prairies of northern Illinois to inform design of green roofs. Her research examines how roofs that mimic these naturally stressful ecosystems may increase the survival and performance of the selected species, increasing the potential for green roofs to provide even greater ecological functions.</p>
Irina Susorova, Illinois Institute of Technology	<p style="text-align: center;"><b>Evaluation Of The Effects Of Green Walls On Building Energy Consumption</b></p> <p>Evaluating of the effects of green walls on building energy consumption using a vegetation model to analyze the effects of the facade-integrated plant layer on building thermal performance. These results will be used to form recommendations for building designers working with green walls.</p>
Sean Menke & Kaya Cuper, Lake Forest College	<p style="text-align: center;"><b>Ant Colonization on Urban Green Rooftops</b></p> <p>Exploring patterns in ant species richness by sampling green rooftops in Chicago and surrounding suburban area. Specifically, they are studying the correlation between ant species richness with soil depth and age of the green rooftops.</p>
Mary Margaret Fischer, University of Illinois at Chicago	<p style="text-align: center;"><b>Evaluation Of Growing Media For Annual Herb Production In Green Roof Modular Trays</b></p> <p>Focusing on redevelopment of brownfield sites and the development of integrated sustainability metrics for the built environment, based on lifecycle assessments (LCAs). His research will advance the field of LCAs on the built environment by using real data to discern the comparative directionality of sustainability for various brownfield redevelopment practices.</p>
Tom Brecheisen, University of Illinois at Chicago	<p style="text-align: center;"><b>Using Life-Cycle Assessment as a Tool to Determine the Conformity of Brownfield Redevelopment to the Sustainability Paradigm</b></p> <p>Focusing on redevelopment of brownfield sites and the development of integrated sustainability metrics for the built environment, based on lifecycle assessments (LCAs). His research will advance the field of LCAs on the built environment by using real data to discern the comparative directionality of sustainability for various brownfield redevelopment practices.</p>

1:00 PM – 2:00 PM

**RISE OF LIVING ARCHITECTURE –BOOK SIGNING ON TRADE SHOW FLOOR**



The Rise of Living Architecture Commemorative Edition© Book Profiles More than 50 of the hundreds of leaders that have created the base and molded the foundation of living architecture.

With inspirational leaders such as these, the future of green roofs and living walls can expect to continue its triple digit growth. Our design, policy, academic and manufacturing leaders bring forth a knowledge and experience in this commemorative edition book.

Offered in a limited quantity, this book is expected to sell out. Pre-order your copy today to ensure to get this before they are gone! Release Date: October 22, 2012

**Order and pick up your copy at CitiesAlive 10th Anniversary Conference in Chicago and have it autographed!**

## Policy Track ( 3P)

## Session 3 – Economic Performance

**1. Life Cycle Cost Benefit Analysis of Green Roofs in Washington, D.C.**

This presentation will focus on the application of life cycle cost and benefit approaches to calculating the benefits of green roofs based on a research study conducted for general services administration. A detailed case study on a commercial building in Washington D.C. will be presented.

**Presenter: Adam Friedberg, Sr. Sustainability Consultant, Arup Engineering**

Adam Friedberg is a senior sustainability consultant at Arup in the New York office.

**2. Life Cycle Cost Benefit Analysis of Green Roofs of the Target Center in Minneapolis, Minnesota**

The costs and benefits of this signature green roof project in Minneapolis will be described as well as added benefits associated with marketing and promotion.

**Presenter: Michael Krause, Founder and Principal, Kandiyohi Consulting and Chair, Green Infrastructure Foundation**

Michael Krause is the President and Director of Strategy and New Projects at Kandiyohi Development Partners, LLC. Kandiyohi is a development and consulting firm in Minneapolis focused on urban redevelopment, green buildings, renewable energy, and clean technologies. Kandiyohi are members of the US Green Building Council.

**3. Methodology for Estimating the Costs and Benefits of Public Green Roof Investment**

This presentation will focus on a methodology to help policy makers understand the cost and benefits of investing public money on green roof incentives. Factors such as storm water management, cost savings, property tax increases, air quality benefits, and job creation will be described.

**Co-presenter: Hitesh Doshi, Professor, School of Architecture, Department of Architectural Science, Ryerson University**

Hitesh Doshi is an Associate Professor in the Department of Architectural Science at Ryerson and is also a Faculty Associate in the Learning and Teaching Office. He has over 15 years of teaching experience targeted towards a wide variety of audience. Currently he is engaged in teaching students in the second, third and fourth years. He teaches two classes with between 15 and 50 students and two classes with over 140 students. He also acts as a thesis advisor for students. Hitesh has also been involved in development of learning objects and participated in CLOE.

**Co-presenter: Steven Peck, GRP, Founder and President of Green Roofs for Healthy Cities**

Founder and president of the industry association, Green Roofs for Healthy Cities. The association organizes research and training to determine the public and private performance of green roof and wall systems in order to support public investment in the development of a multi-million dollar market for green roofing products in North America.

## Design Track (3D)

## Session 3 – Exploring Green Roof Long Term Performance – Award Winning Projects

**1. Ford's Green Roof: 10 Years of Dynamic Stability**

Ford Motor Company's Dearborn Truck Plant 10.6 acre living roof represents an extremely large, well established trial of thin-profile, ultralight extensive green roof technology. In the 10 years since installation, the DTP green roof has been monitored for stormwater runoff mitigation, insect community diversity, plant community development, and carbon storage capacity among other performance criteria. These data and their influence on green roof design/build opportunities and short- and long-term construction and operating costs will be evaluated.

**Presenter: Clayton Rugh, PhD, Manager & Technical Director, Xero Flor**

Clayton Rugh, PhD is Manager & Technical Director of Xero Flor America. Dr. Rugh received his BS in Botany and Genetics and MS in Plant biology, both from The Ohio State University; and PhD from the University of Georgia. Xero Flor America, LLC. (XFA) was formed concurrently with the 10.4 acre green roof installation on Ford's Dearborn Truck Plant. XFA was borne out of 30 years of technical development by its parent organization, Xero Flor International GmbH, and extensive German and U.S. university R&D to develop various green roof systems tailored to individual project design goals and regional North American climates. Xero Flor pre-grown vegetated mats are installed on custom designed base layers as "instant" green roof systems, which are independent laboratory certified against weed encroachment, wind uplift, spread of fire, or surface erosion. These features and more on the Dearborn Truck Plant and an additional 400+ Xero Flor green roof installations throughout North America since the initiation of the Ford - XFA - Michigan State University collaborative green roof research trials in 2001.

**2. Lessons Learned from a Well Loved Giant – Millennium Park**

Since its inauguration in 2004 Millennium Park has welcomed millions of visitors. This session will focus on the many lessons learned regarding the design, installation, and ongoing maintenance of this signature green roof of Chicago.

**Presenter: Terry Guen, FALSA, Design Associates – Project Landscape Architect**

Since 1983 Terry Guen has been the Landscape Architect/Urban Designer Project Coordinator on multi-disciplinary design teams which have included Landscape Architecture, Architecture, Urban Design, Planning, Engineering, Public Outreach, Programming, and Economic Development experts. TGDA's experience allows clients to meet urban landscape development goals working within a rigorous urban governmental and construction environment.

**3. Evaluating the Performance of the Intensive 909 Walnut Street Project**

**Presenter: Jeffrey L. Bruce, FASLA, GRP, President, Jeffrey L. Bruce & Company**

In addition to being the Chair of Green Roofs for Healthy Cities and the Incoming President of the American Society of Irrigation Consultants, Jeffrey Bruce is owner of Jeffrey L. Bruce & Company (JBC). Founded in 1986, JBC provides highly specialized technical support to many of the nation's leading architectural and landscape architectural firms on a variety of project profiles including engineered soils, green roof technologies, urban agronomy, performance sports turf, and irrigation engineering. Mr. Bruce has received over 60 separate design and leadership awards. Award winning projects of his firm, Jeffrey L. Bruce & Company, have been published 85 times. Licensed to practice in 20 states, he has served as an invited lecturer, visiting critic, and speaker at numerous conferences and trade shows.

## Research Track (3R)

## Session 3 – Grey Water Performance and Evaluating Irrigation Research Methods

**1. The Effect of Grey Water Irrigation on Green Roof Performance**

Direct side-by-side tests of green roofs irrigated with grey water and potable water were conducted in a laboratory setting, and the performances were compared. Synthetic grey water of repeatable composition, developed for waste water recycling technology, was used. Green roofs all had the same growing media of the same depth, and were exposed to identical climatic conditions. Plantings included ryegrass (*Lolium perenne*) and periwinkle (*Vinca Major*) that were mature. Evaporative cooling was measured in steady state laboratory conditions using a low-speed wind tunnel built specifically for measuring thermal performance of green roofs.

**Presenter: Graig Spolek, Professor, Dept. of Mechanical Engineering, Portland State University**

Graig Spolek is Professor of Mechanical Engineering at Portland State University. His research areas include measurement green roof performance, based on both field and laboratory studies; several of those works have been presented previously at Cities Alive conferences.

## 2. Reducing Building Temperature with Living Wall Wastewater Treatment System

This research focuses on the quantification of building temperature reduction from an innovative living wall wastewater treatment system. The research entailed the use of 5 replicate buildings with conditioned interior space. The impact on energy use was also evaluated.

**Presenter: Robert D. Cameron, Researcher, Penn State University**

Bob directed the global environmental program of a Fortune 50 multi-national conglomerate for 20+ years where he developed the first constructed wetlands for treating wastewater from the natural gas industry. Currently, he's completing his doctorate at PSU where he conducts research on living walls, green roofs, and constructed wetlands.

## 3. Comparison of Water Use Efficiency of Overhead, Drip, and Sub-irrigation for Green Roofs

Because green roof substrates tend to be coarse to allow adequate drainage at shallow depths they possess reduced water holding capacity and capillary movement of water compared to typical growing substrates and natural soils. For this reason, drip or sub-irrigation may not be the most efficient irrigation method. This study quantifies the effectiveness of overhead, drip, and sub-irrigation for various green roof substrate types.

**Presenter: Bradley Rowe, Professor, Michigan State University**

Brad Rowe began conducting research on green roofs at MSU in 2000 and has focused primarily on plants (selection, environmental tolerances, nutrients, community development, carbon sequestration, and food production). He was the founding chair of the GRHC Research Committee and received the GRHC Excellence in Research Award in 2008.

### On the Roof With (3G)

### Session 3 – The Economic Benefits of Integrated Design Practices

Chair: Paul Kephart, President, Rana Creek

Panel: David J. Yocca, RLA, FASLA, AICP, LEED AP, Principal, Conservation Design Forum

6:30 PM – 8:00 PM

**LOCAL HOST RECEPTION** (Included with full delegate registration)



The City of Chicago invites you to get a taste of Chicago's neighborhoods by attending a special event at the Spertus Institute on Michigan Avenue. Enjoy paintings by local artists, stunning images of green roofs and walls, and a wide array appetizers, cocktails and locally prepared treats. Conveniently located just two blocks from the Congress Hotel, the Spertus Institute is a LEED Silver-rated building with a 6,700-square-foot green roof and a one-of-a-kind, 10-story, faceted window that offers spectacular views of the skyline, Grant Park, Millennium Park and Lake Michigan. Tours of the roof will be provided throughout the evening.



10:30 PM – 12:00 AM

**THE AFTER PARTY**

On behalf of Firestone Building Products, we welcome you for a drink on us, the evening of Thursday, October 18th at the Plymouth Restaurant & Bar after 9 pm. Must present your delegate badge for entrance to event.



COLUMBIA  
GREEN®

Sponsored by  
Firestone &  
Columbia Green

**Policy Track (4P)      Session 4 – Lessons Learned from the Pioneers of Green Roof Policy: Toronto, Chicago and Portland**

**1. Toronto Green Roof By-law and EcoRoof Program**

Toronto’s by-law and ecoroof program have resulted in over two million square feet of recently approved and permitted green roofs. The Green Roof by-law contains a construction standard for all green roofs in the city as well as requirements for green roofs to be built on most new construction. This presentation will highlight these policy initiatives and describe some of the challenges that were overcome in its implementation.

**Presenter: Shayna Stott, Environmental Planner, Zoning Bylaw and Environmental Planning, City of Toronto**

**2. The City of Chicago Multiple Green Roof Initiatives**

Chicago is home to more than five million square feet of green roofs. This presentation will review the policies and programs that have resulted in the implementation of green roofs with emphasis on the latest monitoring and tracking initiatives.

**Presenter: Michael Berkshire, LEED AP BD+C, Green Projects Administrator, City of Chicago**

Michael Berkshire works in the sustainability office in the Department of Planning for the City of Chicago. He has been involved in the environmental field for 24 years and has been using policy as a driving force behind the Green Roof movement in Chicago.

**3. The City of Portland Ecoroof Incentive Program**

The City of Portland Ecoroof Program started in 1996 when a city employee constructed an experimental ecoroof on his garage. From this small start, the program has expanded and helped support the construction of nearly 500 green roofs totaling over 30 acres on buildings of all types and sizes. This presentation will provide an overview of how the incentive works with the private sector and general public to sustain the Portland green roof movement.

**Presenter: Alice Coker, Manager Ecoroof Incentive, City of Portland - Bureau of Environmental Services**

Alice has worked for the City of Portland’s Bureau of Environmental Services since 2001, focusing on environmental monitoring, pollution prevention and stormwater management. She presently manages the Ecoroof Incentive Program within the Sustainable Stormwater Management Division. Alice has a Bachelors degree in Environmental Science and Biology from Portland State University.

**Design Track (4D)      Session 4 – Exploring Green Roof Long Term Performance – Award Winning Projects**

**1. Life Expression Wellness Centre in Pennsylvania**

This award winning project features an extensive green roof on varying degrees of slope. The performance of this system over the past nine years will be a focus of this session.

**Charlie Miller, President, Roofmeadow**

Mr. Miller has 30 years of experience in projects related to civil and environmental engineering. In 1997, Mr. Miller formed Roofscapes, Inc. (now Roofmeadow) to introduce green roof technology as a new tool for managing stormwater in urban and developing areas in the United States. Mr. Miller’s firm provides project delivery services, including feasibility studies, design consulting, preparation of construction documentation, construction management, and long-term maintenance and support for green roof installations.

**2. Two Retrospectives on Signature Green Roof Projects in the Twin Cities**

Peter MacDonagh, and Michael Krause, will review several signature green roof projects in the Twin Cities. Topics include design considerations, construction techniques, performance data, owner’s perspective, and how these projects helped drive green infrastructure policy.

**Co-presenter: Peter MacDonagh, Director of Science and Design, The Kestrel Design Group, Green Institute of Minneapolis**

Peter MacDonagh’s, fieldwork, research and lecturing has taken him around the world. At Kestrel Design Group he provides a thoughtful, scientific approach with expert knowledge of native plants, soils and green roofs, and watersheds. Recent, acclaimed projects include Minneapolis’ Target Center extensive green roof.

**Co-presenter: Michael Krause, Founder and Principal, and Chair, Green Infrastructure Foundation**

Michael Krause is the President of Kandiyohi Consulting. Kandiyohi is a development and consulting firm in Minneapolis focused on urban redevelopment, green buildings, renewable energy, and clean technologies.

**Research Track (4D)      Session 4 – Thermal Performance of Green Roofs and Walls at Different Scales**

**1. Reducing Urban Heat Islands: Simulating Aggregate Green Roof Performance**

**Presenter: Brad Bass, Adjunct Professor, Centre for Environment, University of Toronto**

Brad Bass has explored the potential of green infrastructure for energy conservation, reducing the urban heat island, increasing urban biodiversity, improving indoor air quality and biofiltration. More recently, he has looked at the contribution of green roofs to a community energy plan and designing living walls for zero-nutrient food production.

**2. Energy Benefits of Green Facades**

Currently, Dr. Tilley’s research is focused on the design and benefits of vegetated building envelopes (i.e., walls and roofs). His Ecosystem Engineering Design Lab has partnered with Green Roofs for Healthy Cities to determine the thermal properties of various green wall designs. Dr. Tilley teaches Design for Urban Water & Energy, Energy & Environment, CAD for Ecology, and Embodied

**Presenter: Dr. David Tilley, University of Maryland**

David Tilley is an Associate Professor of Ecological Engineering in the Department of Environmental Science and Technology at the University of Maryland. Dr. Tilley



defines ecological engineering as “the emerging field that combines natural and applied sciences, especially systems ecology, with the discipline of engineering to design, build, and operate new ecosystem-types that connect society with nature for the benefit of both.” Dr. Tilley’s Ecosystem Engineering Design Lab has partnered with Green Roofs for Healthy Cities to determine the thermal properties of various green wall designs.

**On the Roof With ( 4G)**

**Session 4 - Emerging Practices in Integrated Water Management**

Chair: Warren Gorowitz, Vice President, Sustainability and Conservation, Ewing Irrigation Products.

Panel: To be Confirmed

10:30 AM - 12 NOON

**SESSION 5**

**Policy Track (5P)**

**Session 5 – Voluntary Standards: Sustainable Sites, LEED, and the Emerging Green Roof and Wall Rating System**

**1. Updating the Development of Sustainable Sites Program**

Sustainable Sites is well on its way to completion and promises to revolutionize the way we design building and maintain landscapes in America. This presentation will introduce attendees to Sustainable Sites and focus on the green roof and wall elements.

**Presenter: David J. Yocca, RLA, FASLA, AICP, LEED AP, Principal Conservation Design Forum**

David Yocca, directs the landscape architectural and planning disciplines at Conservation Design Forum ([www.cdfinc.com](http://www.cdfinc.com)) and has led a wide array of planning and design efforts. In his role at CDF, he has developed master plans for conservation villages, parks, urban neighborhoods, and communities as well as participating in the visioning, design, entitlement, and implementation process for numerous sustainable sites, including schools, hospitals, museums, interpretive centers, churches, homes, and businesses. Mr. Yocca has helped to pioneer the integration and application of infiltration-based, green infrastructure practices and materials in the United States, including ecological green roof systems, porous pavement, and constructed bioretention/rain garden/bioswale elements.

**2. LEED and Green Roof and Walls**

The U.S Green Building Council’s LEED family of rating systems incorporates green roofs and walls and this session will describe new developments with these products.

**Presenter: Lois Vitt Sale, AIA, LEED Fellow, Sr. Vice President, Chief Sustainability Officer, Wight & Company**

As a practicing architect for over 23 years, Lois’ career goes well beyond the domain of project design. She has been a national leader in the application of private and commercial green technologies and sustainable planning to the public and private sectors. She is a public policy advisor to elected officials and has participated in the development of policies to lessen the negative impacts of the built environment on the health of people and on our natural resources. Her specialty is found in the intersection between applied technology and the development of policy provisions for City, State, and Federal entities. In addition, Lois applies these technologies and practices to leading edge sustainable designs and consulting to design teams and clients to maximize the environmental potential for projects.

**3. Overview of Green Roof and Wall Rating System**

Green Roofs for Healthy Cities is developing the rating systems/tool for green roofs and walls and the first phase of this effort will be presented and discussed.

**Co-presenters David J. Yocca and Lois Vitt Sale (bios as above)**

**Design Track (5D)**

**Session 5 – Lessons Learned from a Manhattan Green Roof Retrofit, the Largest Green Roof in Halifax, and Four Green Roofs in Cincinnati**

**1. Lessons Learned from a Green Roof Retrofit in Downtown Manhattan**

Retrofits of two existing buildings with green roofs—owned by Jack Resnick & Sons and located in the heart of Manhattan. Transforming existing building rooftops into green roofs can be quite complex - it all comes down to the current conditions. An owner, architect and landscape designer will present two case studies to illustrate how the existing building and roof conditions played a large part in informing the design and the budget of both projects.

**Presenter: Ilana Judah, Int’l Assoc. AIA, OAQ, LEED AP BD+C, Director of Sustainability and Senior Associate, FXFOWLE Architects**

Ilana has over 15 years experience as a senior architect leading teams and developing solutions for projects of various scales and typologies. As the Director of Sustainability at FXFOWLE, her role is to further advance knowledge and implementation of environmentally-responsible design. Ilana is currently leading a sustainability strategies study for Richardson Memorial Hall at Tulane University, which will serve as a demonstration project on campus and a nexus for the University’s Sustainable Strategies Initiative. She is Co-Chair of the AIA NY Committee on the Environment and a founding member of ASHRAE’s New York Sustainability Committee. Ilana is an active member of the New York Chapter of the U.S. Green Building Council and a former executive board member of the Canada Green Building Council, Quebec Chapter.

**2. Community Embraces 2nd Largest Green Roof in Halifax**

Seaport Farmers’ Market Green Roof overlooking Halifax Harbour has proven a big hit with the Halifax community. Rooftop access via 300 foot long public deck to create a major new public space for the community. A constructed success, the designed planting and Soprema system has proven a big hit. Green Roof built 2010.

**Presenter: Keith Tufts, Principal, Lydon Lynch Architects**

As Lydon Lynch’s Senior Environmental Architect, Keith Tufts led the design of the new Seaport Farmers’ Market, a LEED Platinum ecological showcase on the Halifax waterfront. Featuring the second largest green roof in Canada and using 70% less energy and water, the new market is one of the most environmentally sustainable buildings in North America and a world---class example of healthy, sustainable living. Keith has a varied design background in architecture, broadcasting and entertainment. For his work on the Cheticamp Children’s Amphitheater, Keith won a 2006 Lieutenant Governor of Nova Scotia Arts Award and the 2005 National Post Design Exchange Gold Medal.

**3. Urban learning laboratory features four educational, monitored green roofs in Cincinnati**

A Cincinnati non-profit collaborated with the public and private sector to turn a former gas station into an environmental education center, home to four accessible green roof systems embedded with state-of-the-art monitoring devices.

**Presenter: Ryan Mooney-Bullock, Green Learning Station Program Manager, Civic Garden Center of Greater Cincinnati**

Ryan Mooney-Bullock educates people of all ages about green infrastructure. She holds a BA in Environmental Studies from the University of Chicago and an MS in Environmental Science from Antioch University New England. Prior work includes teaching high school science and conducting research for Chicago's Center for Neighborhood Technology.

## Research Track (5R)

## Session 5 – Wind and Water Performance in Hot Climates

### 1. High Speed Wind Uplift Research on Green Roof Assemblies (45 minute presentation)

A summary of State of Florida-sponsored research on the effects of hurricane wind uplift on full-scale modular and built-in-place green roof assemblies

**Presenter: Glenn Acomb, FASLA, Senior Lecturer, Department of Landscape Architecture**

Glenn Acomb, FASLA, teaches courses in sustainable construction and green roof technology. In 2006, he designed and manages UF's Green Roof, and conducts research in plants and media for green roofs in hot-humid climates, as well as wind uplift research. He recently received the FRSA/Earl Blank Fellowship in roof technology.

### 2. Designing Arid-Appropriate Green Roofs to Provide Ecosystem Services

We are testing how green roofs may function in arid environments using model scale houses located at Biosphere 2. Our experimental design looks at the interaction of plant species, soil type, and irrigation regime on soil water availability, plant function and health, and building energy budgets.

**Presenter: Mitchell Pavao-Zukerman, Assistant Research Professor, University of Arizona**

My work focuses on the ecology of cities, focusing on ecosystem services of green infrastructure. I work at the interface of science and public outreach, using citizen science to investigate questions relating to environmental literacy. I have experience with field and lab techniques in soil ecology, physiological ecology, and biogeochemistry.

### 3. Bronx River Revitalization: The Ranaqua Green Roof Project

The Ranaqua Green Roof project is grant funded by the New York State Attorney General's office and the National Fish and Wildlife Foundation with the main intent of providing hydrology modeling data to the scientific community at large. This project, which will apply native vegetation to ¼ of a 7,200ft<sup>2</sup> roof, simultaneously aims to bioremediate runoff and inhibit large stormwater volumes from flowing into the adjacent Bronx River.

**Co-Presenter: Elizabeth Bowler, Ranaqua Green Roof Project Manager, GreenApple Corps, New York City Parks Department**

Elizabeth Bowler holds a BS degree of landscape architecture from UC Davis. She has previously worked for NYC Parks as a field-based crew leader and now manages the Ranaqua Green Roof Project. She is also currently a candidate for Pratt Institute's MS in Urban Environmental Systems Management.

**Co-Presenter: Nathan D. Griswold, ASLA, GRP Senior Garden Roof Technical Sales Coordinator, American Hydrotech, Inc**

## On the Roof With (5G)

## Session 5 – Beyond the Aesthetics: Understanding Performance of Green Wall Technologies

Chair: Reuben Freed, Green Wall Project Consultant, Director of Research, GreenScreen

Panel: Denise Eichmann, Senior Project Manager, Ambius Project Development North America

12:00 NOON – 2:00 PM

**10<sup>th</sup> Anniversary AWARDS OF EXCELLENCE LUNCHEON** (Included with full delegate registration)

Come celebrate and learn more about this year's award winning green roof and wall projects from across North America!

MC: Michael Krause, Chair, Green Infrastructure Foundation

2:30 PM – 4:00 PM

**SESSION 6 (Two Research Tracks included in this session)**

## Research Track (6R<sub>1</sub>)

## Session 6 – Biodiversity Opportunities in Green Roofs and Walls

### 1. Effect of Green Facades on Arthropod Habitat on Buildings in the Washington, D.C. Metro Area

Green facades have only recently been incorporated into the American green building industry and are particularly relevant in urban areas where ground-level space is limited and vegetation is scarce. Increased wildlife habitat is often proposed as a benefit of the technology, but little experimental data exist to understand the magnitude and quality of the benefit. Research findings from an observational field study examined wildlife habitat potential of green facades in the Washington, D.C. metro area to test whether green facades had a higher number of arthropods and a more diverse assemblage of arthropods than non-vegetated building facades.

**Presenter: Dr. David Tilley, University of Maryland**

David Tilley is an Associate Professor of Ecological Engineering in the Department of Environmental Science and Technology at the University of Maryland. Dr. Tilley defines ecological engineering as "the emerging field that combines natural and applied sciences, especially systems ecology, with the discipline of engineering to design, build, and operate new ecosystem-types that connect society with nature for the benefit of both." Dr. Tilley's Ecosystem Engineering Design Lab has partnered with Green Roofs for Healthy Cities to determine the thermal properties of various green wall designs.

### 2. New Light Weight Solutions for Green Roofs and Biodiversity

Swiss research programs are working on functional green roof technologies with light weight approaches combining the issue of storm water management and biodiversity. Different systems are developed and compared as well as specific habitat conditions proved for various animal groups.

**Presenter: Dr. Stephan Brenneisen (Invited,) Zurich University of Applied Sciences**

Head of Green roof Competence Center Zurich University of Applied Sciences President of Swiss norm committee developing green roof norms Consulting Swiss cities

(Basel, Zurich) regarding building codes/requirements for green roofs. Leading several biodiversity research projects Research in developing new green roof technologies

## Research Track (6R<sub>2</sub>)

## Session 6 – New Rooftop Vegetable Garden Technology

### 1. Vegetable Production on an Extensive Green Roofs Food

The evaluation of six vegetable and herb species for production in an extensive green roof systems and management practices to minimize the impact on green roof benefits.

**Presenter: Leigh L. Whittinghill, Graduate Research Assistant, Michigan State University**

Leigh Whittinghill received a BA in biology from Middlebury College in 2006. She is now a PhD candidate at Michigan State University. Her research interests included the use of green roofs to sequester carbon and examining the use of green roofs to grow vegetables.

### 2. Fertility Management for Vegetables On An Extensive Green Roof

This study covers two years of data on a cool season crop of leaf lettuce, radishes, and two years of data on a warm season crop of tomatoes from fall 2010 till summer 2012

**Presenter: Nick A. Ouellette, Graduate Student, Southern Illinois University**

Second year master's student at Southern Illinois University in Carbondale (SIUC), Bachelor in Plant and Soil Science Currently active in sustainability council, Hold an assistant ship co-managing around 7 acres of vegetable production at the university farms, TA home gardening, landscape design, and crop physiology also helped establish and manage campus green roof.

## Design Track (6D)

## Session 6 – Reviewing Performance - Chicago City Hall and Peggy Notebaert Nature Museum and the Top Ten Trends

### 1. The Performance of the Chicago City Hall Green Roof and the Peggy Notebaert Nature Museum Green Roof and Wall

Chicago City is an iconic green roof which launched the City of Chicago's green roof policy and programs in 2001. Find out how it and the award winning Peggy Notebaert Museum have evolved and performed over the past ten years.

**Presenter: David J. Yocca, RLA, FASLA, AICP, LEED AP, Principal Conservation Design Forum**

David Yocca directs the landscape architectural and planning disciplines at Conservation Design Forum ([www.cdfinc.com](http://www.cdfinc.com)) and has led a wide array of planning and design efforts. In his role at CDF, he has developed master plans for conservation villages, parks, urban neighborhoods, and communities as well as participating in the visioning, design, entitlement, and implementation process for numerous sustainable sites, including schools, hospitals, museums, interpretive centers, churches, homes, and businesses. Mr. Yocca has helped to pioneer the integration and application of infiltration-based, green infrastructure practices and materials in the United States, including ecological green roof systems, porous pavement, and constructed bioretention/rain garden/bioswale elements.

### 2. Top 10 Trends in Green Roof and Green Wall Design

Greenroofs.com has been compiling our fast-paced Top 10 List of Hot Trends in Green roof & Green wall Design now for six years, and 2012 has some familiar topics as well as some real stunners! As once only conceptual über-sustainable "eco-fantasy" buildings become "eco-solution" realities, we find designers' imaginations are running even more rampant in their quest for greening the built environment. And for the first time with the new format, we'll be able to slow the pace down and delve deeper into each highlighted project, including short video interviews with selected designers!

**Co-Presenter: Linda S. Velazquez, ASLA Associate, LEED AP, GRP, Greenroofs.com Publisher & Design Consultant, Greenroofs.com**

Linda S. Velazquez, ASLA Associate, LEED AP, GRP, holds a Bachelor's of Landscape Architecture and is founder and publisher of Greenroofs.com, the international green roof industry's resource and online information portal.

**Co-Presenter: Haven Kiers, LEED AP, GRP, Green Roof Consultant and Designer, Greenroofs.com**

Haven Kiers, LEED AP, GRP, holds a Master's of Landscape Architecture from UC Berkeley and an undergraduate degree from Brown University. Haven designs and presents nationally about green roofs. She has been a trainer with Green Roofs for Healthy Cities for eight years. Haven also teaches the UC Davis Extension course "Practical Applications for Green Roofs and Living Walls." As the Design Editor on Greenroofs.com, she writes the column "Chic Sustainability." She is a principal and co-founder of GreenSwell, a green infrastructure planning and design firm in Northern California.

## On the Roof With (6G)

## Session 6 – Best Strategies for Securing Green Roof and Wall Maintenance

Chair: Andy Creath, LEED AP, Owner, Green Roofs of Colorado.

Panel: Nathan Griswold, GRP, Associate ASLA, Garden Roof Technical Sales Coordinator, American Hydrotech.

Kevin Crist, GRP, Lead Project Manager, Intrinsic Landscaping.

Chris Brunner. Partner, New York Green Roofs

4:30 PM – 5:30PM

CLOSING PLENARY

5:30 PM – 7:00 PM

Networking Reception

## Saturday October 20 - *CITIESALIVE* TOURS

### 9:00 AM– 1:00 PM ½ Day Walking Tour

*CitiesAlive* Tours are your opportunity to explore unique and exclusive green roof and wall locations across the city, in the company of experienced professionals and featuring special guests on site. In honor of Chicago's renowned elevated train system "The El", the *CitiesAlive* Chicago Green Roof and Wall tours are named after the El Lines. (Locations subject to change)

Space is limited, register today!

#### Orange Line

##### Tour Sites

1. Aqua - 225 North Columbus Dr.
2. Chicago City Hall - 121 North LaSalle Blvd.
3. Gallery 37 - 66 East Randolph St.
4. Lurie Garden - Michigan & Monroe St.
5. Chicago Cultural Center - 77 East Randolph St.

### 10:00 AM-5:30 PM Full Day Tours

#### Purple Line

##### Tour Sites

1. Tyner Center – 2400 Compass Road, Glenview, IL
2. Chicago Botanic Garden – 1000 Lake Cook Road, Glencoe
3. Church Street Station - 1640 Maple Ave, Evanston
4. Uncommon Ground – 1401 Devon Avenue
5. Loyola – Lake Shore Campus Rogers Park



#### Chicago Botanic Gardens

Photo courtesy of Robin Carlson, CBG

#### Green Line

##### Tour Sites:

1. Lake Point Tower – 505 North Lake Shore Drive
2. Peggy Notebaert Museum – 2430 North Cannon Drive
3. Walmart – North Avenue, Chicago
4. Chicago Centre for Green Technology – 445 North Sacramento Boulevard
5. St. Mary of Nazareth Hospital Center – 22233 West Division Street, Wicker Park
6. Embassy Hotel Downtown



#### Peggy Notebaert Nature Museum

Photo courtesy of Emily Shelton, Green Roof Gardens

#### Blue Line

##### Tour Sites

1. Schwab Rehabilitation Hospital – 1401 South California Boulevard
2. Gary Comer Youth Center – 7200 South Ingleside Avenue
3. University of Chicago Theological Seminary – 1407 East 60<sup>th</sup>, Chicago, IL

**REGISTER NOW!**

<p><b>Best Price Delegate Package</b>                  This is the lowest price option for delegates who want to access all core conference programming - sessions, trade show and meals on the trade show floor, Opening Plenary and Local Host receptions, Awards of Excellence luncheon - plus receive post-conference proceedings. CEU credits apply.</p> <p>Includes: all sessions and plenaries (11.25 professional development hours), trade show, hospitality (Opening Reception; coffee breaks &amp; lunch on trade show floor; Local Host Committee Gala; Awards of Excellence Luncheon) + conference proceedings (30+ hours of audio recordings - every session - synched with presentation slides, plus 20 PDF conference papers)</p>		
	<b>GRHC Member</b>	<b>Non-Member</b>
<b>Early Bird Rate (Register before September 15<sup>th</sup>)</b>	<b>\$519</b>	<b>\$619</b>
<p><b>VIP Deluxe 10<sup>th</sup> Anniversary Delegate Package (Limited Availability)</b>                  This limited availability package has all the 'bells and whistles' for our industry VIP's. Attend an exclusive wine &amp; cheese reception in the President's Suite on Tuesday October 16th. Receive a personalized signed copy of "The Rise of Living Architecture", a gorgeous coffee table book debuting at <i>CitiesAlive</i> that commemorates the 10th Anniversary of GRHC and features more than 50 industry leaders. VIP's will enjoy 'front of the line' access to all <i>CitiesAlive</i> programming and hospitality events - sessions, trade show and meals on the trade show floor, Opening Plenary and Local Host receptions, Awards of Excellence luncheon - even a fancy VIP ribbon on your registration nametag. Plus receive post-conference proceedings. CEU credits apply.</p>		
	<b>GRHC Member</b>	<b>Non-Member</b>
<b>Rate</b>	<b>\$699</b>	<b>\$799</b>
<p><b>Green Roof Professional (GRP) and Emerging Professional Package</b>                  Specially designed for Green Roof Professionals and those in the process of attaining GRP designation, this value-priced package includes half day training course &amp; reference manual, GRP exclusive networking event, plus all core conference programming - sessions, trade show and meals on the trade show floor, Opening Plenary and Local Host receptions, Awards of Excellence luncheon - plus receive post-conference proceedings. CEU credits apply.</p>		
	<b>GRHC Member</b>	<b>Non-Member</b>
<b>Rate</b>	<b>\$749</b>	<b>\$849</b>
<p><b>Delegate Pass Only</b></p>		
	<b>GRHC Member</b>	<b>Non-Member</b>
<b>Early Bird Rate (Ends September 15<sup>th</sup>)</b>	<b>\$459</b>	<b>\$559</b>
<b>One Day Pass (Oct 18<sup>th</sup> or 19<sup>th</sup>)</b> includes all speaker sessions and hospitality events; plus trade show (on October 18 <sup>th</sup> only)		<b>\$299</b>
<b>Student Delegate</b> Includes: all sessions + trade show		<b>\$99</b>
<p><b>A la carte Registration Options</b></p>		
<b>Opening Plenary &amp; Reception on trade show floor (Oct 17<sup>th</sup>)</b>		<b>\$75</b>
<b>Trade Show Only (Oct 18<sup>th</sup>)</b>		<b>\$49</b>
<b>Local Host Reception (Oct 18<sup>th</sup>)</b>		<b>\$100</b>
<b>Awards of Excellence Luncheon (Oct 19<sup>th</sup>)</b>		<b>\$100</b>
<b>Rise of Living Architecture Book</b>		<b>\$59.99</b>
<p><b>Conference Proceedings</b>                  Includes: 30+ hours of audio recordings - every session - synched with presentation slides, plus 20 PDF conference papers</p>		
	<b>Full Delegates</b>	<b>Non-Delegates</b>
<b>Pre-Conference</b>	<b>\$129</b>	<b>\$129</b>
<b>Post Conference</b>	<b>\$199</b>	<b>\$199</b>
<p><b>Pre Conference Education Program</b></p>		
<b>Half Day Courses (Oct 17<sup>th</sup>)</b> Includes: resource manual		<b>Rate</b>
Integrated Water Management for Buildings and Sites		<b>\$225</b>
Integrated Water Management for Buildings and Sites III		<b>\$225</b>
Advanced Green Roof Maintenance		<b>\$225</b>
Green Walls 101: Systems Overview and Design		<b>\$225</b>
Introduction to Rooftop Urban Agriculture		<b>\$225</b>
<b>Full Day Courses (Oct 17<sup>th</sup>)</b> Includes: lunch and manual		<b>Rate</b>
Green Roof Design 101: Introductory Course		<b>\$399</b>
Green Roof Infrastructure: Design & Installation 201		<b>\$399</b>

<b>Tours (space is limited)</b> ½ day tours includes exclusive destinations, guided by green roof professionals Full day tours includes transportation, boxed lunch, guided by green roof professionals	<b>Rate</b>
<b>Half Day Walking Tours</b>	
Orange Line (Oct 17 <sup>th</sup> and Oct 20 <sup>th</sup> )	\$65
Brown Line (Oct 17 <sup>th</sup> )	\$65
<b>Full Day Bus Tours</b>	
Red Line (Oct 17 <sup>th</sup> )	\$155
Purple Line (Oct 20 <sup>th</sup> )	\$155
Green Line (Oct 20 <sup>th</sup> )	\$155
Blue Line (Oct 20 <sup>th</sup> )	\$155

For more information and to register online please go to:

[www.citiesalive.org](http://www.citiesalive.org)

Thank you to our sponsors:

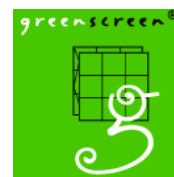
**Gold Sponsors**



**Silver Sponsors**



**Bronze Sponsors**



**Association Partners**

