

Request for Research Proposals Green Wall Research Fund July 14, 2008

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INTRODUCTION

The purpose of this request for proposals is to identify interest in the research community to undertake research and to produce research data on, but not limited to, the aspects of exterior green walls identified below.

The Green Walls Group (GWG) is a Corporate Member sub-committee of Green Roofs for Healthy Cities – North America, Inc. (GRHC), a non-profit industry association whose mission is to increase the awareness of the economic, social and environmental benefits of green roofs and green walls and other forms of living architecture through education, advocacy, professional development and celebrations of excellence. The Green Wall Group has established a Green Wall Research Fund, in order to produce new research on the benefits of **green facade** and **living wall** green wall systems.

SPONSORS

The corporate members of Green Roofs for Healthy Cities' Green Wall Group are:

- Carl Stahl–DecorCable Innovations LLC.
- Elevated Landscape Technologies Inc.
- Green Living Technologies, LLC.
- **greenscreen**
- Jakob-USA

DEFINITIONS

Green walls are understood to mean both wall-mounted and freestanding vegetated green façade and living wall systems as defined by the Green Walls 101 course of Green Roofs for Healthy Cities.

A **green façade** is a system for supporting vines and climbing plants in a vertical, horizontal or angled plane on a trellis structure particular to the manufacturer, in which the vegetation is rooted in soil beds or containers at the base or at elevated levels in relation to the façade.

A **living wall** is a system for supporting a variety of plant species in a vertical plane in which the vegetation, growing medium, irrigation and drainage are integrated and supported by a structural system particular to the manufacturer.

PURPOSE OF THE FUND

The sponsors of the fund and Green Roofs for Healthy Cities are aware of the growing need for research data on green walls. This need has been expressed in the form of enquiries from landscape architects and architects at trade shows and seminars as well as from participants to the introductory Green Walls 101 course provided by Green Roofs for Healthy Cities in locations across North America. These groups express the awareness and needs of their constituencies as well builders and users of our urban environments. Green walls research in North America is at this

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moment limited in quantity, scope and depth. The intent of the Green Wall Research Fund is to create new and original research in specific areas that leverages on-going funded studies and expertise associated with the collection, promotion and performance benefits of green walls. Our goal is to have the research projects established by the spring of 2009.

The Objectives of research are:

1. To establish by scientific methods knowledge and information that supports (or refutes) any existing analyses of empirical data and assumptions about the performance of green walls.
2. To publish this research in the form of papers at upcoming GRHC conferences as well as in other academic and green building industry media and venues.

The research will be available to the Green Walls Group and others in the *Tree of Knowledge* database developed and managed by Green Roofs for Healthy Cities.

PROPOSED RESEARCH: BENEFITS OF GREEN WALLS

The Primary area of interest is the **thermal performance** of green walls. The secondary focus areas are seen as targets of opportunity that may become available in the process of performing the core research by enlarging the scope of work. Applicants are expected to include the Primary and some Secondary focus areas in their proposals. Inclusion of Secondary focus areas in a proposal will be regarded highly in the evaluation and award process.

Primary focus:

THERMAL PERFORMANCE: Urban Heat Island and energy conservation issues in association with inhabited structures including observations of the following:

- A. Heat transfer in summer and/or winter;
- B. Differences in ambient temperatures and effects on surrounding micro climates;
- C. Orientation to the sun;
- D. Humidity;
- E. Shading coefficients of leaf area coverage;
- F. Evaporative cooling and transpiration in the summer
- G. Reduction of wind speed in the winter
- H. Trade-offs between reduction of wind speed and shading in the winter

Secondary focus areas:

1. WATER FLOWS: runoff quantity and quality, rates of flow and collection for irrigation;
1. ACOUSTIC PERFORMANCE: values in association with inhabited structures
2. HUMAN FACTORS PERFORMANCE: effect on physiological comfort, visual aspect and prospect values, day lighting, glare, privacy, healing, health and well-being values.
3. BIODIVERSITY PERFORMANCE: effects on flora and fauna

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FUND STRUCTURE AND DISTRIBUTION

A minimum of \$50,000 of funding will be allocated between no more than two (2) successful respondents over three (3) years. Additional funding will be considered based on the merit of the successful applications.

In addition to the financial support, Fund Sponsor members will provide:

1. Green wall system materials to a minimum of 200 square feet for living wall system and 400 square feet for cable and panel systems. Additional material donations will be considered based on the merit of the successful applications.
2. Support on the choice of plant materials
3. Information to correctly install, operate and maintain the systems and properly establish plant materials.

Successful applicants will be expected to install the green wall and provide:

1. Installation labor
2. Engineering calculations if required
3. Plant materials, irrigation water and nutrients
4. Growing media if required by the systems
5. Insurance coverage against injury, structural failure and force majeure.

QUALIFICATION OF PROPONENTS AND PROPOSALS

Application to this Fund is limited to non-profit institutions, Universities and affiliated Colleges. Preference will be given to research groups who can leverage funds from other sources as well as contribute value through facilities and resources already in place.

Consideration will be given to evidence of applications submitted for other sources of funding. Proposals will be evaluated on a point-matrix with weight given to the following areas:

- Value of leveraged funds 25 points
- Methodology, size and scope – detailed description of approach, schedule, metric plan and orientation as applied to **both** living wall and green façade systems 20 points
- In-kind resources – site facilities, equipment, support resources 20 points
- Scope with respect to Secondary focus areas 20 points
- Team credentials – members’ qualified research experience 15 points

All proposals must be in electronic form (pdf) and **no more** than ten (10) pages in length plus attachments and have a 1-page executive summary, including the following:

- Budget based on the template provided
- Critical path projection with noted milestone stages
- Principal researcher contact information and CV
- References to previous completed research projects.

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INFORMATION AND UPDATES

For further information or enquiries about this RFP, please contact [Reuben Freed](#) of **greenscreen®**. Any addenda or changes to the RFP will be posted on the GRHC web site at least a week prior to the deadline. www.greenroofs.org

PROPOSAL EVALUATION TEAM MEMBERS

Laura Barker, *Elevated Landscape Technologies (ELT Easy Green)*,
Brad Bass, *University of Toronto*
Shane Debisingh, *Jakob-USA*
Reuben Freed, **greenscreen®**
George Irwin, *Green Living Technologies*
Patrick Kelly, *Carl Stahl-DecorCable Innovations*
Steven Peck, *Green Roofs for Healthy Cities*

TIMELINES OF RESPONSE PROCESS

October 13, 2008: Proposals Due to Green Walls Group c/o Green Roofs for Healthy Cities in PDF format, emailed to speck@greenroofs.org by no later than 12:00 midnight EST.
November 12, 2008: Notification of Respondents
November 26, 2008: Letter of Intent and Contract submitted.

See attached budget template.