



Dear Friends,

On behalf of the Green Advantage Board of Directors, Advisory Board, Certification Boards, staff, interns, and volunteers, it is my pleasure to introduce the **2017 Green Advantage Annual Report**.

This report showcases how Green Advantage continues to add value to all those who are engaged in the construction process by increasing built environment performance consistent with our organization's mission. Among our accomplishments in 2017, Green Advantage:

- **Maintained "ANSI Accreditation" for the Green Advantage Certified Practitioner™ (GACP™)**. Considered the "gold standard" for personnel credentialing, the American National Standards Institute (ANSI) renewed its accreditation of the GACP credential under the requirements defined in ANSI/ISO/IEC 17024: 2012. This internationally recognized, third-party accreditation considers Green Advantage as an organization and all dimensions of a given, specific credential.
- **Attained "ANSI Accreditation" for Green Advantage Certified Associate™ (GACA™) and Green Advantage Certified Curtainwall Installer™ (GAC|CI™)**. After a rigorous assessment, the American National Standards Institute (ANSI) accredited the GACA and the GAC|CI credentials under the requirements defined in ANSI/ISO/IEC 17024: 2012.
- **Attained "ANSI accreditation" for the Pre-construction Risk Assessment Certificate (PCRA) Program**. After another, separate, rigorous assessment, the American National Standards Institute (ANSI) became accredited to issue the PCRA Certificate Program targeted to healthcare facility construction personnel under ASTM E2659-09.
- **Continued Momentum on Disaster Recovery Construction Specialist Initiative**. A Disaster Recovery Construction Specialist Certification Board of leaders from academia, design, construction, and the disaster management fields in the United States and Canada was established to provide guidance and support in steering this important initiative and securing funding for its implementation.



I encourage you to read this report so you understand in greater detail the impressive strides Green Advantage has accomplished in the past year. We are committed to ensuring that Green Advantage Certified personnel are prepared to use state-of-the-art means, methods, and materials, chosen from hundreds of effective green construction approaches and integrate best practices in the construction of every project they undertake. Through the use of Green Advantage credentials we will make significant contributions that help move the design, construction and facilities industry another step closer to achieving higher performance in the buildings where we all live, work and play.

Wishing you a better future,

A handwritten signature in black ink, appearing to be "RK".

RK Stewart, FAIA, Hon. FRAIC, Hon. JIA, Hon. AIA, LEED® AP BD+C
Chair of the Board
Green Advantage, Inc.

GREEN ADVANTAGE[®], INC.
ANNUAL REPORT 2017

Organizational Description

Green Advantage[®], Inc. is a non-profit certification organization. As an independent, third-party certifying body that is non-industry affiliated, it develops and utilizes internationally recognized green building standards to provide certification opportunities to the construction sector.

Vision

Our vision is that the built environment throughout the world is constructed in an environmentally sensitive manner that supports social and economic sustainability.

Mission

The Green Advantage mission is to be an exemplary certifier of construction personnel, nationally and internationally.

Statement of Deliverables

Green Advantage produces certification standards and assessments that promote the use of sustainable construction practices and excellence in terms of construction products and processes.

Background & Attributes

Building personnel play a pivotal role in creating and shaping the emerging green economy for this and future generations. Given the continued growth of green building, it is essential that the construction industry workforce becomes knowledgeable regarding relevant principles, current techniques, best practices, and materials employed in green building design and construction. This material can be useful in identifying and mitigating risks related to green building, cost containment while still ensuring quality, team building, improved coordination, and overall attainment of environmental and health goals. Targeted to empower construction field personnel, Green Advantage Certification and its Certificate Program offers these practitioners an affordable opportunity to differentiate themselves within the workforce and to enhance their skills in the field of green building.

Established with grant funding from the United States Environmental Protection Agency and supported by contributions from The Nature Conservancy, Green Advantage was developed in collaboration with Science Applications International Corporation (SAIC), and the University of Florida. Green Advantage was piloted in 2001 in Florida.

Green Advantage[®] attributes include:

- A. Internationally recognized.** Green Advantage Certifications are recognized by the US Green Building Council, the Green Business Certification, Inc., the Veterans Administration, National Association of Home Builders, Associated Builders and Contractors, Finishing Trades International and others.
- B. Field focused.** Green Advantage credentials are created specifically for construction field personnel - contractors, subcontractors, project supervisors, trades people, project architects and engineers, facility managers, and code officials. The three certifications verify: 1) knowledge of best practices, techniques, approaches, and materials – the ‘how and what’ – needed to improve the green construction process and desired results as well as the rationale – the ‘why’ - of green building; 2) for the GAC|CI curtainwall specific best practices, means, and methods; 3) for the PCRA Certificate Program, assists construction personnel in meeting the intent and compliance requirements of the Joint Commission standard related to PCRA activity in health care facilities.
- C. Green Builder Certification Options.** Green Advantage offers two foundational construction personnel certifications that have been developed for use in the United States and Canada.

- **GA Certified Associate™ (GACA):** The GACA Exam™ focuses on basic construction field principles, means, and methods that help ensure successful green building projects. Candidates for GACA™ certification are responsible for understanding the application of 300+ green building best practices. The exam emphasizes meeting and exceeding green project goals related to building performance, worker and occupant health and safety, crew collaboration, and costs.

The GACA™ designation is valuable for tradespeople who wish to demonstrate their capability in green construction. The target audience for the GACA Exam™ also includes apprentices, construction students, and entry-level construction workers.

- **GA Certified Practitioner™ (GACP):** The GACP Exam™ focuses on green building field principles, means, and methods that help ensure successful green building projects and reduce risks associated with green building. Candidates for GACP™ certification are responsible for understanding the application of 800+ green building best practices. The exam emphasizes meeting and exceeding green project goals related to building performance, worker and occupant health and safety, crew collaboration, and costs.

The GACP™ designation is valuable for construction supervisory personnel who wish to demonstrate their capability in green construction. The target audience for the GACP Exam™ also includes architects, engineers, code officials, and advanced students.

Applicable to multiple green building systems. Green Advantage Certification requires general understanding of green building rating systems, standards, and codes including LEED, Green Globes, NAHB Green Building Certification, Passive House, Living Building Challenge, IgCC and ASHRAE 189.1.

Evidence-based. The favorable environmental, health, and crew collaboration effects of the use of Green Advantage personnel on projects were confirmed in research piloted by the University of Florida.¹

- D. A Trade-specific Certification – the Green Advantage Certified Curtainwall Installer™ (GAC|CI™).** Applicable in the United States and Canada, this certification verifies workers’

¹ <http://www.cce.ufl.edu/2009/08/green-advantage-certification-study/>

knowledge, skills, and abilities related to curtainwall installation. The Green Advantage Certified Practitioner Certification or Green Advantage Certified Associate Certification is a prerequisite for the Curtainwall Installer Certification.

- E. PCRA Certificate Program.** This credential is designed to ensure that personnel who demolish, deconstruct, renovate, or construct healthcare facilities are better prepared to comply with guidelines for pre-construction risk assessment that are issued by The Joint Commission. The Joint Commission accredits hospitals and other healthcare organizations throughout the United States.
- F. Standardized Specifications.** Two specification options are available to guide the effective use of Green Advantage Certified personnel. Both are LEED Innovation Credit compliant for eligible projects. Specification language is available on the Green Advantage website.²
 - The **GA30** is for supervisory personnel. The **GA30** requires that 30% of supervisory personnel be **GACP** prior to and throughout the project.
 - The **GA3030** is for both supervisory personnel and tradespeople. It has the same 30% supervisory personnel **GACP** requirement, but enhances the team building by requiring 30% of the aggregate non-supervisory tradespeople to be Green Advantage Certified – **GACA or GACP** - prior to their working on the job. A by-trade, 20% minimum helps ensure that Green Advantage Certified workers are represented on all of the trades working on a project.
- G. Committed to empowerment of minorities.** Green Advantage strives to advance user accessibility and include construction workers from ethnic and racial minority groups.
- H. Updated regularly; group or individual exam administration.** The Green Advantage Compendium (the standard upon which Green Advantage Certification Exams are based) is updated regularly in order to reflect the rapid changes in green building and curtainwall installation. Exams can be administered and proctored by Green Advantage in group settings or individually administered at local assessment centers throughout the US, Canada and other countries.

2017 Governing Board

The Green Advantage Board of Directors defines the organization's strategic plan, budget, and certification activities. It appoints the Advisory Board, Certification Boards, and the Chief Executive Officer. It ensures objectivity and impartiality, and manages conflict of interest throughout the organization. Board members include:

[RK Stewart, Chair](#)

[James Mayer, Vice Chair](#)

[Tina Dortch, Secretary](#)

[Barbara Englehart, Treasurer](#)

[Chris Haddox](#)

[Dean Rodeheaver](#)

[Grady O'Rear, President/CEO](#)

² <http://www.greenadvantage.org/ga-industry-programs/ga-field-personnel-standard>

2017 Advisory Board

The Advisory Board provides expert organizational guidance to Green Advantage. Four Advisory Board members served in this capacity in 2016.

[Denis Hayes](#)

[Amory Lovins](#)

[Susan Maxman](#)

[Mona Sahlin](#)

2017 International Green Builder Certification Board

The International Green Builder Certification Board is responsible for ensuring the integrity, impartiality, and fairness of the standards documented in the Compendium, from which green builder certification exams are drawn. This Board also approves certification requisites and exam specifications appropriate for the Green Advantage Certified Associate (GACA) and the Green Advantage Certified Practitioner (GACP).

[James Scott Brew](#)

[Paul Brosnahan](#)

[Daniel Castro-Lacouture](#)

[Lance Davis](#)

[Richard Dooley](#)

[David Eisenberg](#)

[Bruce Hammond](#)

[Rob Holsten](#)

[Werner Jager](#) (ex-officio)

[Scott Kelting](#)

[Jim Kerr](#)

[Dave Metzger](#)

[Chuck Miccolis](#)

[Georg Reichard](#)

[Keith Robinson](#)

[Chris Rotenberry](#)

[Kevin Stack](#)

[James Sullivan](#)

[Maruja Torres-Antonini](#)

[Jim Touey](#) (ex-officio)

[Darryl Williford](#)

2017 International Glazier Certification Board

The International Glazier Certification Board is responsible for ensuring the integrity, impartiality, and fairness of the standards documented in the Compendium, from which the Curtainwall Installer certification exam will be drawn. This Board also approves certification requisites and exam specifications appropriate for Green Advantage Certified Curtainwall Installer (GAC/CI).

[Quincy Alexander](#)

[Andy Bordick](#)

[Patrick Byrne](#)
[Robert Clarke](#)
[Jeremy Cromer](#)
[Don Ghent](#)
[Werner Jager](#) (ex-officio)
[Mike Laughlin](#)
[Mike Metz](#)
[Dave Metzger](#)
[Chuck Miccolis](#)
[Peter Neudorf](#)
[Mic Patterson](#)
[Leonard Pianalto](#)
[Keith Robinson](#)
[Chris Rotenberry](#)
[Urmilla Sowell](#)
[Tim Stricker](#)
[Bruce Toman](#)
[Jim Touey](#) (ex-officio)
[Vivian Volz](#)
[Andrew Williams](#)

2017 Pre-Construction Risk Assessment (PCRA) Subject Matter Experts

Pre-Construction Risk Assessment Subject Matter Experts oversee the quality of certificate standards that form the basis for Green Advantage Pre-construction Risk Assessment (PCRA) for Health Care Facilities certificate program for construction personnel. The purpose of the Certificate Program is to prepare construction personnel across trades, regardless of whether serving in a supervisory or non-supervisory capacity, foundational principles that promote understanding about and successful delivery of PCRA related activity. Subject Matter Expert participation helps ensure the relevance, integrity, impartiality, and fairness of the Certificate Program. Members of this body include:

[Cathryn Balestrieri](#)
[Sheila Bosch](#)
[Daniel Castro-Lacouture](#)
[Michael Compton](#)
[Mike Gonzalez](#)
[Kenneth Haber](#)
[Joe MacInness](#)
[Anna Marshall-Baker](#)
[Patrick Smith](#)
[Tyler White](#)

2017 Accomplishments

Below are some of the highlights of the many achievements made possible through the efforts of the Green Advantage Governing Board, Advisory Board, Certification Board, and other volunteers, staff, and, of course, Green Advantage Certified Associates and Green Advantage Certified Practitioners:

Maintained ANSI Accreditation

In 2017 the American National Standards Institute Personnel Certification Accreditation Committee granted Green Advantage continued accreditation under ISO/IEC 17024: 2012 for the Green Advantage Certified Practitioner (GACP) program.

Considered the “gold standard” for personnel certifications in the industry, ANSI Accreditation requires Green Advantage management, financial, and certification processes to be thoroughly reviewed and approved against rigorous ANSI standards by ANSI auditors.

ANSI is the U.S. representative of the International Organization for Standardization (ISO). The ISO is a worldwide federation of national standards bodies from more than 145 countries, one from each country. Its mission is to promote the development of standardization and related activities in the world with a view to facilitating the international exchange of goods and services, and to developing cooperation in the spheres of intellectual, scientific, technological, and economic activity. ISO's work results in international agreements that are published as International Standards and other types of ISO documents.³

ANSI accreditation is recognized nationally and internationally and has become the hallmark of a quality certification program.

Attained ANSI Accreditation for Green Advantage Certified Associate™ (GACA™) and Green Advantage Certified Curtainwall Installer™ (GAC|CI™).

After a rigorous assessment, the American National Standards Institute (ANSI) accredited the GACA and the GAC|CI credentials under the requirements defined in ANSI/ISO/IEC 17024: 2012.

The International Glazier Certification Board developed and approved the body of knowledge that forms the basis for a curtainwall installer certification for the US and Canada – the Green Advantage Certified Curtainwall Installer. From these standards it approved both written and performance exam protocols and passing scores and approved the Green Advantage Certified Practitioner or Green Advantage Certified Associate Certification as a prerequisite. Over 100 candidates participated in a pilot that concluded in 2017.

To achieve the Green Advantage Certified Curtainwall Installer (GAC|CI) certification construction personnel must pass both a written and performance exam that demonstrates knowledge, skills, and abilities related to safely laying out, fastening, erecting, installing, and replacing or dismantling curtainwall systems. Types of systems include stick-built curtainwall systems, unitized curtainwall systems, and similar building envelope systems.

The written and performance exams require demonstrated competencies applicable to curtainwall technologies, materials, methods, and best practices including:

- advanced fastening systems
- framework and metal extrusions

³ http://www.ansi.org/standards_activities/iso_programs/overview.aspx#UXRkoLWG28A

- structural glass
- glass
- sealants
- panels and other curtainwall components
- specialized layout equipment (e.g. Total Stations, Theodolites and Builder's Levels)
- power tools and specialty glazing tools
- hoisting and rigging equipment
- glass manipulators and other glass setting devices, including power/suction cups.

In addition, GAC|CI certification emphasizes promotion of green technology such as passive and active solar, and sustainability (e.g. building envelope integrity, durability, waste reduction, and energy efficient weatherization) as it applies to curtainwall installation. GAC|CIs demonstrate curtainwall installer-specific competencies related to health and safety practices, disaster preparedness/resistance, and high quality, cost effective project delivery.

Attained ANSI Accreditation for the Pre-construction Risk Assessment Certificate (PCRA) Program

After another, separate, rigorous assessment, the American National Standards Institute (ANSI) became accredited to issue the PCRA Certificate under ASTM E2659-09 in 2017.

This credential is designed to ensure that personnel who demolish, deconstruct, renovate, or construct healthcare facilities are better prepared to comply with guidelines for pre-construction risk assessment that are issued by The Joint Commission. The Joint Commission accredits hospitals and other healthcare organizations throughout the United States.

The PCRA Certificate Program was developed to help construction workers become familiar with the means, methods, materials and best practices associated with health care facility risk assessment and basic infection control. To mitigate *Health-care Associated Infections (HAIs)* and other potential risks, for licensing purposes, healthcare facilities are required to have a Pre-construction Risk Assessment (PCRA) process established. The PCRA is used for any planned or unplanned demolition, construction or renovation. It is a formal protocol used to identify these potential risks and create mitigation strategies to reduce or eliminate them.

Over 50 health care and construction professionals participated in a pilot based on learning objectives, assessments and protocols developed and approved by a distinguished panel of subject matter experts from health care environmental health and safety, academia, construction education and training, and experienced PCRA construction supervisory personnel. The two day training concludes with an exam. Those attending the training and passing the exam are awarded the PCRA Certificate.

Continued Momentum on Disaster Recovery Construction Specialist Initiative

During 2017 additional progress was made in building on the momentum from the work accomplished at the three-day Development and Research Planning Forum at the American Institute of Architects headquarters in Washington held in November of 2015. Convened by [Green Advantage](#), the [International Code Council \(ICC\)](#), and [Antioch University New England Center for Academic Innovation](#), those gathered agreed that construction personnel perform a critical role in the wake of

catastrophes. Their knowledge, skills, and abilities are essential to community reconstruction. Moreover, it is important that their work utilize sustainable construction techniques to ensure the performance, safety, and long-term cost-effectiveness of building recovery.

In addition to significant progress made toward the development of a proof of concept for a Disaster Recovery Construction Specialist, greater clarity was achieved related to developing a computer-simulated platform with gaming features for the certification, as well as development of an app that would enhance information dissemination and provide a user-engaging mechanism with gaming features for verifying and archiving delivery of best practices through photography. Further, it was acknowledged that these latter two aspects of the initiative -- the computer-simulated platform with gaming features for the certification and development of the app -- could have application to the construction industry in general.

Thanks to these advocates launching the initiative, additional advances continue to move its three parts toward the goal line. Examples of these activities include: strong letters of support from key national and international leaders; involvement of experts in pursuit of funding; engagement and guidance from a growing pool of experts in the disaster recovery, gaming, and computer simulation fields.

In 2017 a Disaster Recovery Construction Specialist Certification Board of leaders from academia, design, construction and the disaster management fields in the United States and Canada was established to provide guidance and support in steering the initiative and securing funding for its implementation.

- Bob Berkebile, Founding Chairman of the American Institute of Architect's Environmental Committee, Founder, BNIM Architecture, known as the "Father of LEED"
- Stuart Brodsky, Founder of Energy Star Commercial and Director for the Sustainable Built Environment, NYU
- Daniel Castro, Professor and Chair School of Building Construction, Georgia Tech
- Randy Keiser, National Healthcare Director, Turner Construction Company
- Charles Kibert, Holland Professor of the M.E. Rinker Sr. School of Building Construction at the University of Florida and Director of the Powell Center for Construction and the Environment
- Bryan Koon, Vice President of Homeland Security and Emergency Management at IEM, former Director of the Florida Division of Emergency Management, past President of the National Emergency Management Association, and Vice-Chairman of the Multi-Hazard Mitigation Council of the National Institute of Building Sciences
- John Martinez, Chairman of the Board, National Hispanic Construction Association, President, Regional Hispanic Contractors Association
- Margot McDonald, Professor of Architecture and Department Head, Cal Poly-San Luis Obispo
- Renée Gratton, Founding President, Construction Resource Initiatives Council, Ottawa, Canada

Administered Over 14,000 Exams

During 2017 the cumulative number of Green Advantage exams administered since the organization's inception exceeded 14,000.

Commitment to the Triple Bottom Line

Achievements in reducing Environmental, Social, & Economic Impacts of Green Advantage as an Organization 2017

- Reduced vehicular & air miles
 - Only one management team meeting during the year occurred face-to-face; otherwise meetings occurred via teleconference
 - CEO travel largely by public transit; CO₂ offsets purchased for plane travel
 - Board meeting (with committee meetings) via teleconference
 - Vast majority of work with consultants occurs through electronic and telecommunications, carpooling occurs whenever possible (e.g. Disaster Recovery Forum)
- 2017 use of electronic communications, striving for “paperless” offices
 - Reduced “hard” mailings through electronic mailings of Study Guide and certification awards
 - When printing needed, used double sided copying
 - Used recycled office paper products for notebook dividers and collateral Forum facilitation materials
- Products/services purchases from companies that are local and/or independently certified by Green Seal, FSC, Fair Trade, Equal Exchange, B Corporation, USDA Organic Certification, Oregon Tilth Certified Organic, or other high quality certifications
 - Purchased and used high recycled content paper (50%-100% recycled)
 - Purchased and used “Greenline Paper” products for letterhead and envelopes; 100% recycled; minimum 40% post-consumer from a company within 500 miles (York, PA)
 - At Forum, prioritized purchasing organic plant food; used recyclable plates and utensils; provided organic food for reception
- Emphasis on diversity in hiring, board appointments, volunteer placements, outreach to exam candidate sectors;
 - Governing Board, 28% female, 28% racial/ethnic minority
 - International Green Builder Certification Board, 15% racial/ethnic minority
 - International Glazier Certification Board, 9% racial/ethnic minority
- Creation of corporate environment that is highly flexible; supportive of family and community life
 - Virtual office permits much of the work to be done at home
 - Flexible hours

Financial Overview 2017

Expenses and Net Income

