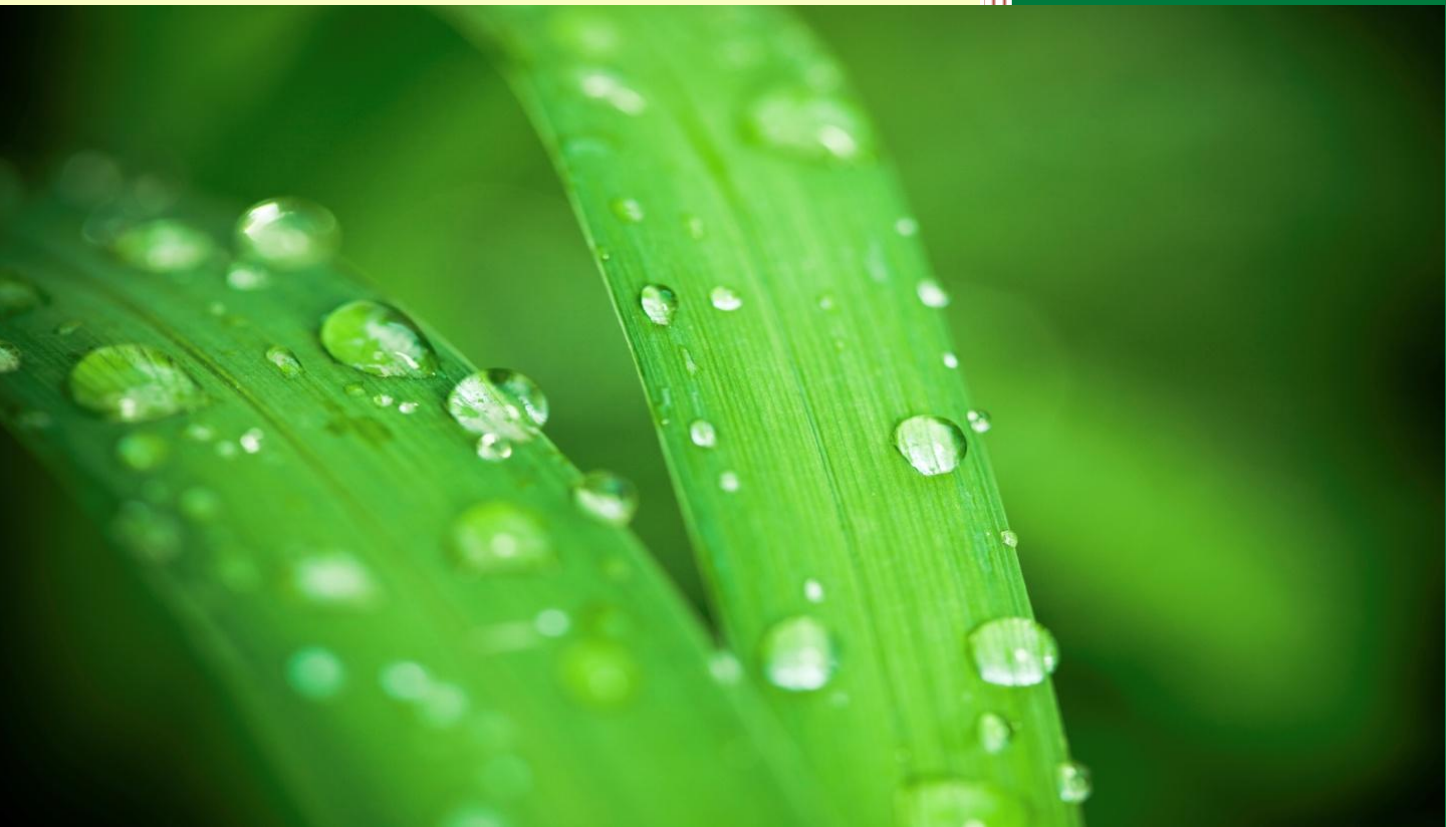




**GREEN ADVANTAGE<sup>®</sup>**  
ENVIRONMENTAL CERTIFICATION

## GA Exam Content Overview™

What is on the Green Advantage Exam?



**2012**

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# GA Exam Content Overview™

This exam preparation resource may be downloaded and utilized for individual use. Along with the material in the GA Open Book Exam Reference (provided upon exam registration) a detailed review of this Overview is an important component to exam preparation.

**All Green Advantage (GA) Certification Exams cover material from the following six topics.**

## **1. Rationale for and Basic Understanding of Sustainability and Green Building**

This topic includes the foundational concepts of sustainability and the role that the built environment plays in either perpetuating unsustainable practices or contributing to more sustainable living patterns. It details how buildings affect the environment throughout their life cycles – from construction and operation to deconstruction or demolition. Major building certification rating systems or standards, such as LEED, Green Globes, NAHB National Green Building Certification and Living Building Challenge, as well as green building operations and maintenance, options for green personnel credentialing and certification are important to this topic.

- Identify and review the vocabulary shown in the glossary of the Green Advantage® Open Book Exam Reference relating to the rationale for sustainability and green building
- Define and discuss the vocabulary shown in the glossary of the Green Advantage® Open Book Exam Reference relating to the rationale for sustainability and green building
- Explain why green building is important from environmental, economic, and human perspectives
- Discuss some of the environmental and health problems related to conventional building practices and how green building can address these problems
- Discuss why successful green building requires team work among and between various trades and subcontractors and some ways that this team work can be encouraged
- List some general construction personnel team practices that can help ensure successful completion of a green building
- Explore what to do when a building practitioner does something that could undermine the green building process or product in design or in the field
- Explain the importance of keeping abreast of changes in green construction best practices, techniques, and certifications
- Describe some of the major testing approaches that are important to ensuring the performance of a green building and the role of commissioning
- Explain some of the primary performance indicators of a successful green building project
- Explain how green building techniques differ from conventional building techniques in the areas of design, construction, operation, and decommissioning
- Describe the importance of integrated design and construction
- Discuss what Green Advantage® Certification is and its benefits
- Compare and contrast the major national and regional green building certifications and differentiate them from practitioner certifications
- Be familiar with the LEED rating system and how construction personnel can assist in attaining LEED certification for different types of projects

- Explain the differences between LEED and other national and regional building certifications such as Green Globes, NAHB National Green Building Certification and Living Building Challenge, Passive House, Build It Green, Earth Craft, etc.
- Differentiate between Green Advantage® Certification and the US Green Building Council's LEED accreditations (LEED Associate, LEED AP, and LEED AP+)
- Differentiate between Green Advantage® Certification and other third-party certification programs
- Be aware of some of the marketing opportunities and techniques that green building presents to building practitioners and organizations

## 2. Site and Land Use

**This topic focuses on the concepts and best practices associated with site and land use in the building process. It addresses a) choosing a building site, b) locating the proposed building on the site, and c) developing the property so as to cause the least amount of environmental damage or provide the greatest amount of ecological benefit to human and natural environments. The topic also includes some of the problems associated with conventional site and land use design and practice and how they can be addressed through green building.**

- Identify and review the vocabulary in the Open Book Exam Reference that relates to the building site and land use in the context of green building
- Define and discuss the vocabulary in the Open Book Exam Reference that relates to selecting and developing a building site and using land in the context of green building
- Explain why site planning and land development are important aspects of green building
- Identify the major considerations that architects and other building design practitioners need to take into account regarding site design and land development
- Explain the impact that construction personnel have on site and land use during the construction process
- Describe some of the best green practices that construction personnel can use to ensure meeting green standards in site and land use
- Discuss how building occupants affect the building site and larger ecosystems through procurement, operations, and maintenance activities

## 3. Water

**This topic explores the importance of water quality and conservation both inside and outside the building. It addresses opportunities for environmentally friendly use of incoming and outgoing indoor water quality and quantity. Additionally, it focuses on some of the best practices used to reduce the demand for water, capture and handle rainwater, recycle water, and ensure good water quality outdoors.**

- Identify and review the vocabulary shown in the glossary of the Green Advantage® Open Book Exam Reference relating to water in the context of green building
- Define and discuss the vocabulary shown in the glossary of the Green Advantage® Open Book Exam Reference relating to water in the context of green building
- Discuss why water is an important aspect of green building

- Identify the water-related considerations that architects and other design-based building practitioners need to take into account when designing a green building
- Explain the impact that builders and other building design practitioners have on water during the construction process
- Describe some of the best practices that construction personnel can use related to meeting water use standards
- Discuss how building occupants affect water through procurement, operations, and maintenance activities

## 4. Energy and Atmosphere

**This topic focuses on the energy and atmospheric impacts of buildings and building products and how field personnel can contribute to energy performance in the planning and construction process. It examines the green building techniques and products that are often used and it addresses the connection between buildings and greenhouse gas emissions. Passive and active solar as well as other renewable energy alternatives and their applications are important to this area. The role of commissioning and energy-related testing techniques and methods are emphasized.**

- Identify and review the vocabulary shown in the glossary of the Green Advantage® Open Book Exam Reference relating to energy and atmosphere in the context of green building
- Define and discuss the vocabulary shown in the glossary of the Green Advantage® Open Book Exam Reference relating to energy and atmosphere in the context of green building
- Explain how energy and atmosphere are related to one another
- Identify energy-saving materials, systems and techniques that are utilized in green buildings
- Identify the ways in which the energy use in a building can create air pollution and discuss how energy-related green building approaches reduce these kinds of pollution
- Identify the energy- and atmosphere-related considerations that architects and other building design practitioners need to take into account when designing a green building
- Understand the impact that builders and other field-based building practitioners have on energy and atmosphere during the construction process
- Describe some of the best practices that construction personnel can use to ensure meeting green standards related to energy and atmosphere
- Discuss how building occupants affect energy and atmosphere through procurement, operations, and maintenance activities

## 5. Materials

**This topic focuses on the environmental and human health impacts of materials that are used throughout the building life cycle. It explores the role that materials selection and use plays in green building and examines how to identify, select and procure green materials.**

- Identify and review the vocabulary shown in the glossary of the Green Advantage® Open Book Exam Reference relating to materials in the context of green building
- Define and discuss the vocabulary shown in the glossary of the Green Advantage® Open Book Exam Reference relating to materials and green building
- Explain why materials and sourcing of green materials are important aspects of green building  
Provide examples of local, rapidly renewable, high-recycled-content materials

- Identify how green materials and building procedures prevent or reduce the release of toxic materials into the ground, water, and air
- Identify the considerations that architects, landscape architects, and other building design practitioners need to take into account when selecting materials
- Understand the impact that builders and other field-based building practitioners have in their use of materials
- Discuss the potential for the reuse of materials with the decommissioning of building systems and deconstruction at the end of the building's useful life
- Describe waste management (reduce, recycle, reuse) as it applies to green building
- Describe some of the best practices that construction personnel can apply to ensure meeting green standards related to materials selection, purchase and use
- Discuss how building occupants affect materials selection, purchase and use through procurement, operations, and maintenance activities

## 6. Indoor Environmental Quality

**This topic explores how green building construction, maintenance, and renovation can result in improved indoor environmental quality (IEQ). It includes air quality-related problems (e.g., sick building syndrome, multiple chemical sensitivity, building-related illness), which can result from chemical or biological contaminants and poorly designed or poorly functioning ventilation in conventionally designed and constructed buildings. In addition to air quality, IEQ includes the quality of water, lighting, color, texture, thermal comfort, odor, and sound.**

- Identify and review the vocabulary shown in the glossary of the Green Advantage® Open Book Exam Reference relating to IEQ in the context of green building
- Define and discuss the vocabulary shown in the glossary of the Green Advantage® Open Book Exam Reference relating to IEQ in the context of green building
- Explain why IEQ is an important aspect of green building Discuss what constitutes good IEQ
- Detail many of the common sources of poor IEQ and how to avoid them
- Identify the considerations that architects and other building design practitioners need to take into account when designing for a healthy building
- Understand the impact that builders and other field-based building practitioners have on the health of the building
- Describe some of the best practices that construction personnel can use to ensure meeting IEQ green standards
- Discuss how building occupants affect IEQ through procurement, operations, and maintenance activities

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