

# Introduction

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## About the LEED Credentialing Program

The Green Building Certification Institute (GBCI) offers credentialing opportunities to professionals who demonstrate knowledge of Leadership in Energy and Environmental Design (LEED) green building practices. *LEED O&M Practice Exams: Operations & Maintenance* prepares you for the LEED AP Operations & Maintenance exam and part one of each of the LEED Accredited Professional (AP) specialty exams.

GBCI's LEED credentialing program has three tiers. The first tier corresponds to the LEED Green Associate exam. According to the *LEED Green Associate Candidate Handbook*, this exam confirms that you have the knowledge and skills necessary to understand and support green design, construction, and operations. When you pass the LEED Green Associate exam, you will earn the LEED Green Associate credential.

The second tier, which corresponds to the LEED AP specialty exams, confirms your deeper and more specialized knowledge of green building practices. GBCI currently has planned five tracks for the LEED AP exams: LEED AP Homes, LEED AP Operations & Maintenance, LEED AP Building Design & Construction, LEED AP Interior Design & Construction, and LEED AP Neighborhood Development. The LEED AP exams are based on the corresponding LEED reference guide and rating systems and other references. When you pass the LEED Green Associate exam along with any LEED AP specialty exam, you will earn the LEED AP credential.

The third tier, called LEED AP Fellow, will distinguish professionals with an exceptional depth of knowledge, experience, and accomplishments with LEED green building practices. This distinction will be attainable through extensive LEED project experience, not by taking an exam.

For more information about LEED credentialing, visit [www.ppi2pass.com/LEEDhome](http://www.ppi2pass.com/LEEDhome).

## About the LEED AP Operations & Maintenance Exam

The LEED AP Operations & Maintenance exam (and the practice exam in this book) contains 200 problems. The first part of the exam (whose specifications are identical to those of the LEED Green Associate exam) contains 100 questions that test your knowledge of

green building practices and principles, as well as your familiarity with LEED requirements, resources, and processes. Accordingly, GBCI categorizes the exam questions into the following seven subject areas.

- *Synergistic Opportunities and LEED Application Process* (project requirements; costs; green resources; standards that support LEED credit; credit interactions; Credit Interpretation Requests and rulings; components of LEED online and project registration; components of LEED score card; components of letter templates; strategies to achieve credit; project boundary; LEED boundary; property boundary; prerequisites and/or minimum program requirements for LEED certification; preliminary rating; multiple certifications for same building; occupancy requirements; USGBC policies; requirements to earn LEED AP credit)
- *Project Site Factors* (community connectivity: transportation and pedestrian access; zoning requirements; development: heat islands)
- *Water Management* (types and quality of water; water management)
- *Project Systems and Energy Impacts* (environmental concerns; green power)
- *Acquisition, Installation, and Management of Project Materials* (recycled materials; regionally harvested and manufactured materials; construction waste management)
- *Stakeholder Involvement in Innovation* (integrated project team criteria; durability planning and management; innovative and regional design)
- *Project Surroundings and Public Outreach* (codes)

The second part of the exam contains an additional 100 questions that test your knowledge of subject areas unique to the operations and maintenance of a building. These are the subject areas covered in the second part of this book's practice exam. GBCI has identified these as follows.

- *Project Site Factors* (lighting development; green management; climate conditions)
- *Water Management* (water treatment; stormwater; irrigation demand; chemical management)
- *Project Systems and Energy Impacts* (energy performance policies; building components; on-site renewable energy; third-party relationships: requirements and alternate rating systems; energy performance measurement; energy tradeoffs; energy sources; energy usage; specialized equipment power needs)
- *Acquisition, Installation, and Management of Project Materials* (building reuse; rapidly renewable materials for facilities alterations and additions; food materials; materials acquisition; chemical management policy and audit; environmental management plan)
- *Improvements to the Indoor Environment* (minimum ventilation requirements; tobacco smoke control; indoor air quality: ventilation effectiveness, pre-construction, during construction, before occupancy, and during occupancy; low-emitting materials; indoor/outdoor chemical and pollutant control; lighting controls; thermal controls; views; types of building spaces)
- *Stakeholder Involvement in Innovation* (design workshop/charrette; earning credit through innovation; education of a building manager)
- *Project Surroundings and Public Outreach* (infrastructure; zoning requirements; government planning agencies; public-private partnership: incentives and opportunities; traffic studies; reduced parking methods; ADA/universal)

## Taking the LEED Credentialing Exams

To apply for a LEED credentialing exam, you must agree to the disciplinary policy and credential maintenance requirements and submit to an application audit. To be eligible to take the LEED Green Associate exam, one of the following must be true.

- Your line of work is in a sustainable field.
- You have documented experience supporting a LEED-registered project.
- You have attended an education program that addresses green building principles.

To be eligible to take a LEED AP exam, you must have documented experience with a LEED Registered Project within the three years prior to your application submittal.

The LEED credentialing exams are administered by computer at Prometric test sites. Prometric is a third party testing agency with over 250 testing locations in the United States and hundreds of centers globally. To schedule an exam, you must first apply at [www.gbci.org](http://www.gbci.org) to receive an eligibility ID number. Then, you must go to the Prometric website at [www.prometric.com/gbci](http://www.prometric.com/gbci) to schedule and pay for the exam. If you need to reschedule or cancel your exam, you must do so directly through Prometric.

The LEED credentialing exam questions are multiple choice with four or more answer options for each question. If more than one option must be selected to correctly answer a question, the question stem will indicate how many options you must choose. Each 100-question exam lasts two hours, giving you a bit more than one and a half minutes per question. The bulk of the questions are non-numerical. Because calculators are not allowed or provided, only basic math is needed to correctly solve any quantitative questions. No reference materials or other supplies may be brought into the exam room, though a pencil and scratch paper will be provided by the testing center. (References are not provided.) The only thing you need to bring with you on exam day is your identification.

Your testing experience begins with an optional brief tutorial to introduce you to the testing computer's functions. When you've finished the tutorial, questions and answer options are shown on a computer screen, and the computer keeps track of which options you choose. Because points are not deducted for incorrectly answered questions, you should mark an answer to every question. For answers you are unsure of, make your best guess and flag the question for later review. If you decide on a different answer later, you can change it, but if you run out of time before getting to all your flagged questions, you still will have given a response to each one. Be sure to mark the correct number of options for each question. There is no partial credit for incomplete answers (or for selecting only some of the correct options).

If you are taking both the first tier (LEED Green Associate) and the second tier (LEED AP) exams on the same day, at the end of your first session the computer will ask you if you are ready to take the second tier. You can take a short break at this time. The second tier's two hours begins when you click "yes" to indicate that you are ready.

To ensure that all candidates' chances of passing remain constant regardless of the difficulty of the specific questions administered on any given exam, GBCI converts the raw exam score to a scaled score, with the total number of points set at 200 and a minimum passing score of 170. In this way, you are not penalized if the exam taken is more difficult than another exam. Instead, in such a case, fewer questions must be answered correctly to achieve a passing score. Your scaled score (or scores, if you are taking both tiers on the same day) is reported on the screen upon completing the exam. A brief optional exit survey completes the exam experience.

When you pass the LEED Green Associate exam, a LEED Green Associate certificate will be sent to you in the mail. If you take and pass both exams, a LEED AP certificate will be sent to you in the mail. If you take both exams but pass only the LEED AP exam, you will need to reregister, retake, and pass the LEED Green Associate exam before you receive any LEED credential.

## **How to Use This Book**

There are a few ways you can use this book's practice exam. You can do an untimed review of the questions and answers to familiarize yourself with the exam format and content, determine which subjects you are weak in, and use the information as a guide for studying. (Use the materials identified in this book's "References" section as the basis for your exam review.) Or you can use the exam to simulate the exam experience, either before you begin your study (as a pre-test) or when you think you are fully prepared.

To simulate the exam experience, don't look at the questions or answers ahead of time. Put away your study materials and references, set a timer for two hours, and solve as many questions as you can within the time limit. Practice exam-like time management. Fill in the provided bubble sheet with your best guess on every question regardless of your certainty and mark the answers to revisit if time permits. If you finish before the time is up, review your work. If you are unable to complete the exam within the time limit, make a note of where you were after two hours; but, continue on to complete the exam. Keep track of your time to see how much faster you will need to work to finish the actual exam within two hours.

After taking a practice exam, check your answers against the answer key. Consider a problem correctly answered only if you have selected all of the required options (and no others). Calculate the percent correct. Though the actual exam score will be scaled, aim for getting at least 70% (70 questions) of the practice exam's questions correct. The fully explained solutions are a learning tool. In addition to reading the solutions to the questions you answered incorrectly, read the explanations to those you answered correctly. Categorize your incorrect responses by exam subject to help you determine the areas you need to study. Use the references list to guide your preparation. Though this exam reflects the breadth and depth of the content on the actual exam, use your best judgment when determining the subjects you need to review.