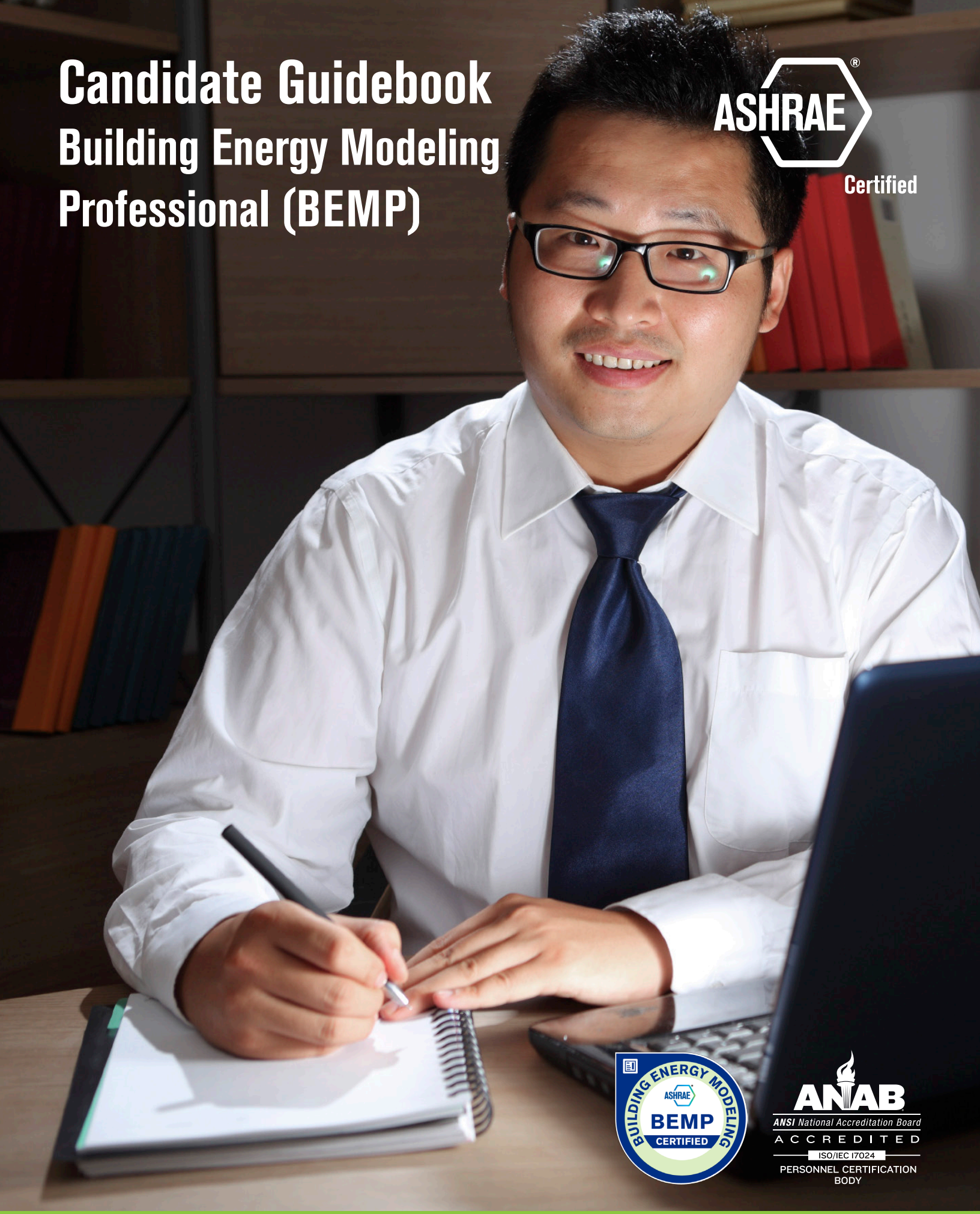
Candidate Guidebook
Building Energy Modeling Professional (BEMP)

ASHRAE® Certified



ANAB
ANSI National Accreditation Board
ACCREDITED
ISO/IEC 17024
PERSONNEL CERTIFICATION BODY

Table of Contents

I. About ASHRAE

The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) is an international membership society committed to the advancement of the arts and sciences of heating, ventilation, air conditioning and refrigeration to serve humanity and promote a sustainable world. The Building Energy Modeling Professional (BEMP) certification program supports this Mission by validating job competency as understood in internationally recognized technical information, reflecting the best practices that lead our industry.

ASHRAE does not discriminate on the basis of race, color, sex, religion, disability, or national or ethnic origin in its policies, procedures, or eligibility requirements for its programs.

Purpose of the BEMP Certification

The BEMP certification program, an ANSI National Accreditation Board (ANAB) accredited personnel certification program under ISO/IEC 17024 (#1139), validates competency to *model new and existing buildings and systems with the full range of physics, and evaluate, select, use, calibrate, and interpret the results of energy modeling software where applied to buildings and systems energy performance, economics, and environmental impacts.*

Value

As of March 2025, nearly 4,500 ASHRAE certifications have been earned in these key built-environment fields: Building Operations I Commissioning I Decarbonization | Energy Assessment I Energy Modeling I Healthcare Facility Design I High-Performance Building Design I HVAC Design. ASHRAE certifications increasingly have become the must-have credential for built-environment professionals, employers and building owners.

With unique candidate metadata embedded, the BEMP digital badge shares information about a candidate's knowledge and skills while guaranteeing enhanced visibility and recognition in electronic media.

About the Candidate Guidebook

The purpose of this guidebook is to provide information about the ASHRAE BEMP certification program. No information or material in this guide creates a contract between ASHRAE and an individual customer or organization. ASHRAE will do its best to apply the principles and provisions contained within this guidebook as written, but reserves the right to change those principles and provisions without actual notice. Nevertheless, ASHRAE will make reasonable efforts to notify customers of any changes.

End-user License

Download of ASHRAE Certification Scheme requirements in a Candidate Guidebook is pursuant to an end-user license expressly prohibiting the end-user from: i) creating derivative works based upon, or modifying, the Certification Scheme; ii) selling, reselling, renting or otherwise using the Certification Scheme for user's own commercial purposes; and iii) further licensing or sub-licensing the Certification Scheme to other persons or organizations. ASHRAE is the developer, publisher of and holder of copyright in ASHRAE Certification Schemes.

II. Eligibility & Application

Who Can Participate

Participation in the ASHRAE BEMP program requires that an applicant meet education and work experience eligibility requirements and successfully complete the program's examination. Membership in ASHRAE is not a prerequisite to participate in the program.

Completing and Submitting the Application

To participate in the ASHRAE Building Energy Modeling Professional (BEMP) program, a candidate must complete and submit an application. The application fee includes the fee to sit for the certification exam. Up to 10 business days after receiving a complete application, ASHRAE will notify the applicant by email either of acceptance and approval of the application or of denial of approval and the reason thereof.

Note: candidates must schedule and take the examination within 90 days of approval.

Overview of BEMP Eligibility Requirements

1. Education and Work Experience
2. Code of Ethics
3. Pass BEMP Certification Exam

Detailed Eligibility Requirements: BEMP Certification

1. Education and Work Experience:

- Government-issued or government-recognized license as a professional engineer or architect and a minimum of two (2) years' building energy modeling experience, OR
- Minimum of Bachelor's degree in engineering or a related field (e.g., building science, architecture, physics, or mathematics) from an accredited institution of higher learning and a minimum of five (5) years' energy-related HVAC, architecture, lighting, or renewable energy experience, including a minimum of two (2) years' building energy modeling experience; up to two years of graduate studies at an accredited institution of higher learning can be counted toward the five (5) years' experience in this category, OR
- Associate's degree or Technical degree or certificate in design, construction, or a related field from an accredited institution of higher learning and a minimum of seven (7) years' energy-related HVAC, architecture, lighting, or renewable energy experience, including a minimum of two (2) years' building energy modeling experience, OR
- High School diploma or equivalent and a minimum of ten (10) years' energy-related HVAC, architecture, lighting, or renewable energy experience, including a minimum of two (2) years' building energy modeling experience.

2. Code of Ethics

As a condition of earning and maintaining certification, applicants for the Building Energy Modeling Professional (BEMP) certification must agree to uphold and abide by a Code of Ethics, the tenets of which are set forth as follows:

1. Exercise a reasonable industry standard of care in the performance of professional duties.
2. Perform professional duties with trust, integrity, and honesty.
3. Hold paramount the health and safety of the public in the performance of professional duties.
4. Work in a manner consistent with all applicable laws and regulations; demonstrate integrity, honesty, and fairness in all activities; and strive for excellence in all matters of ethical conduct.
5. Act with integrity in any relationship that involves an employer or client and disclose fully to an affected employer or client any conflicts-of-interest resulting from business affiliations or personal interests.
6. Represent qualifications accurately and honestly.
7. Offer products and services only in areas where competence and expertise will satisfy the client and public need.

8. Agree to comply with and uphold all policies, procedures, guidelines, and requirements of the certification program; use the designation as authorized and only in the approved manner; acknowledge that the certificate and marks are the property of their respective owners; and return the certificate and discontinue use of the designation and marks when required to do so.
9. Accept responsibility for maintaining the credential through recertification and continuously uphold the Code of Ethics.
10. Voluntarily and immediately report any felony convictions or other legal dispositions that would constitute violations of this Code of Ethics that have not already been disclosed, regardless of when they occurred, and report any conditions that prohibit fulfillment of duties as set forth in the competency requirements.

3. Pass BEMP Certification Exam

The BEMP certification examination is a proctored, closed book/closed notes, two and one-half hours (2.5), 115-item multiple-choice exam. Applicants who self-attest that they are a non-native English speaker will receive an additional 30 minutes of testing time. These applicants will be asked to declare their native language and provide the name and email of a professional reference who can confirm the applicant is a non-native English speaker.

A candidate's score is based on 100 of the items; the other 15 items, which are interspersed throughout the examination, are included for trial purposes and are not scored.

The exam detailed content outline for the BEMP examination is provided in Appendix A .

The three cognitive levels tested on the BEMP examination are as follows:

1. Recall: The ability to remember or recognize specific information
2. Application: The ability to comprehend, relate, or apply knowledge to new or changing situations
3. Analysis: The ability to synthesize information from a variety of sources, determine solutions, and/or evaluate the usefulness of a solution

Please review sections III. Examination" and IV. "Scheduling an Examination" of the BEMP Candidate Guidebook for additional related information.

Application Fees

ASHRAE Member: $495.00; Nonmember: $745.00
ASHRAE Member Exam Retake: $220.00; Nonmember: $285.00
ASHRAE Member Second Exam Retake $495.00; Nonmember $745.00

ASHRAE Developing Economies Member: $295
ASHRAE Developing Economies Member Exam Retake: $130
ASHRAE Developing Economies Member Second Exam Retake: $295

If an application is declined by ASHRAE or cancelled by the applicant, the amount of the fee, less $50 to cover administrative costs, will be refunded to the applicant.

ASHRAE retains the right to audit any and all applications at any time. If, at any time, the application information submitted is found to be incomplete or inaccurate, it may be rejected, examination results may be delayed or voided, and a certification may be rescinded.

Candidate Responsibilities

Each candidate for ASHRAE Building Energy Modeling Professional certification is responsible for the following:

- Submit a completed, signed application form and the application fee,
- Schedule an examination appointment within the 90-day eligibility period,
- Pay a reschedule or cancellation fee if the candidate chooses to cancel or reschedule an exam appointment,
- Comply with the rules for examination,
- Immediately notify ASHRAE of any suspected violations of the rules for examination,
- In the event of certification, successful candidates are required to inform the Certification Committee body, without delay, of matters that can affect their capability to continue to fulfill the certification requirements, or risk suspension or withdrawal of the certification,
- In the event a certificant's certification is suspended or revoked, she/he must return the certificate to ASHRAE. The certificant also must refrain from any further promotion of themselves as an ASHRAE Certified Professional and from future use of all references to an ASHRAE Certified status.

Personal Data

ASHRAE collects and maintains personal data in order to identify certification applicants, validate that the requirements for certification have been fulfilled and to maintain the security of the intellectual property in its exam item banks. Personal data will be maintained until which time it is no longer necessary in order to establish, exercise or defend legal claims.

ASHRAE aggregates exam candidate item responses for exam development and exam security purposes. Examinee responses to ASHRAE exam items are considered to be ASHRAE intellectual property with test security implications; therefore, such derived data are not subject to access, rectification, erasure or portability.

The exam development and delivery employees of ASHRAE vendor Kryterion will have access to ASHRAE certification exam candidate personal data. As a full-service test development and delivery company, Kryterion is fully committed to complying with the requirements of global data protection laws and regulations. Kryterion manage its privacy and data protection obligations under the following privacy frameworks: General Data Protection Regulation (GDPR), California Consumer Privacy Act (CCPA), and Personal Information Protection and Electronic Documents Act (PIPEDA).

Candidate Rights

Consistent with ASHRAE Certification program policies, the following rights are conferred upon applicants, candidates, certificants and the public:

- Applicants may declare a request for accommodation of special needs. ASHRAE complies with the Americans with Disabilities Act of 1990 (ADA). Therefore, ASHRAE will make reasonable accommodations for certification exam candidates when appropriate, and consistent with ADA requirements. ASHRAE will consider requests for testing accommodations from certification candidates with a documented disability that limits the candidate's ability to participate in an examination.
- ASHRAE shall maintain the confidentiality of all information pertaining to an individual's application and exam. When the Certification Committee is required by law to release confidential information, the person concerned shall, unless prohibited by law, be notified as to what information will be provided.
- Certificants may appeal decisions on certification and recertification, including suspension and revocation decisions. Denied applicants may appeal decisions on certification, in the event they believe that the eligibility criteria have been inaccurately, inconsistently, or unfairly applied.
- Applicants, candidates, certificants and the public may lodge complaints that relate to the certification activities for which the Certification Committee is responsible, including complaints against certified persons.

The Certification Committee shall receive, evaluate and make decisions on complaints in a constructive, impartial and timely manner that treats all parties fairly and equitably. In addition, the complaints-handling process shall be subject to requirements for confidentiality, as it relates to the complainant and to the subject of the complaint.

Further related information on these key policies may be found on this ASHRAE Certification webpage: https://www.ashrae.org/professional-development/ashrae-certification/certification-forms.

III. About the Examination

Examination Preparation

Neither participating in a preparatory activity nor purchasing a publication is a requirement for participating in the BEMP program or for enrolling to take the BEMP examination. However, candidates who choose to participate in preparatory activities or to purchase publications are responsible for ensuring that the timing of the activity or purchase aligns with the timing of the examination session for which the candidate has enrolled.

Resources available to help prepare for the BEMP examination include, but are not limited to, the following:

Study Guide

Certification Study Guide: Building Energy Modeling Professional (BEMP)

Practice Exam

- ASHRAE BEMP Practice Exam

ASHRAE Publications

- ASHRAE Handbook—Fundamentals (SI) (includes CD in dual units)
- ASHRAE Handbook—Fundamentals (I-P) (includes CD in dual units)
- ANSI/ASHRAE Standard 55 - Thermal Environmental Conditions for Human Occupancy
- ANSI/ASHRAE Standard 62.1 - Ventilation for Acceptable Indoor Air Quality
- Standard 90.1- (SI) - Energy Standard for Buildings except Low-Rise Residential Buildings (ANSI Approved; IESNA Co-Sponsored)
- Standard 90.1- (I-P) - Energy Standard for Buildings except Low-Rise Residential Buildings (ANSI Approved; IESNA Co-Sponsored)
- User's Manual for ANSI/ASHRAE/IESNA Standard 90.1
- ANSI/ASHRAE/IESNA Standard 100 - Energy Conservation in Existing Buildings
- ANSI/ASHRAE Standard 140 - Standard Method of Test for the Evaluation of Building Energy Analysis Computer Programs
- ASHRAE Standard 209 - Energy Simulation Aided Design for Buildings except Low-Rise Residential Buildings
- ANSI/ASHRAE Standard 228 - Standard Method of Evaluating Zero Net Energy and Zero Net Carbon Building Performance
- ASHRAE Guideline 14 - Measurement of Energy and Demand Savings
- Grid-Interactive Buildings for Decarbonization: Design and Operation Resource Guide

ASHRAE Learning Institute (ALI) & eLearning Center Courses

The ASHRAE Learning Institute (ALI) and ASHRAE eLearning offer a wide range of professional development seminars and short courses.

ASHRAE does not warrant that participation in or use of any of the above resources will guarantee successful completion of the examination. Nor does ASHRAE warrant that all information presented in all of the above resources is non-contradictory. However, ASHRAE will do its best to avoid testing contradictory, out-of-date, or inaccurate information.

Copyrighted Examination Questions

All examination questions are the copyrighted property of ASHRAE. It is forbidden under federal copyright law to copy, reproduce, record, distribute or display these examination questions by any means, in whole or in part. Doing so may subject you to severe civil and criminal penalties.

Score Report

Immediately following submission of their exam, all examinees receive on screen a report, which indicates a "Pass" or "Fail" result and a numerical score of questions correct per domain. All examinees as well will receive an email from donotreply@webassessor.com with the same report. Examinees may also log in to their Kryterion Webassessor account to view this report.

Successful Examinees

Successful examinees will be invited to claim their BEMP digital badge, which is the "certificate of certification", within six weeks of their exam, and will be recognized on the ASHRAE website. Scores are not reported over the telephone, by electronic mail, or by facsimile.

The "certificate of certification" issued to successful examinees is the sole property of ASHRAE Certification; therefore, should a certification be suspended or revoked, the certificate shall be returned to ASHRAE Certification.

Successful examinees agree to the following conditions:

- Inform the Certification Committee, without delay, of matters that can affect their capability to continue to fulfill the certification requirements, or risk suspension or withdrawal of the certification.
- Make claims regarding "BEMP" certification only within the scope of the "BEMP" certification,
- Not to use the certification in such a manner as to bring ASHRAE certification into disrepute,
- Not to use the certificate in a misleading manner.

Examination Passing Score

When the BEMP Exam Subcommittee conducts a passing point study, the expert judgments of subject matter experts are used to produce and interpret results, and set the exam passing score.

Score Needed to Pass BEMP Certification Exam: TBD by July 31
Life-to-Date BEMP Exam Pass Rate through 12/2024: 55%

Results Cancelled by ASHRAE

ASHRAE is responsible for the validity and integrity of the results it reports. On occasion, occurrences such as computer malfunction or misconduct by a candidate may cause a result to be suspect. ASHRAE reserves the right to void or withhold examination results if, upon investigation, violation of its regulations is discovered.

Exam Retakes

Examinees who do not pass their exam may retake their exam after a three-month wait period. The fee to apply to retake an ASHRAE certification examination is discounted at $220 for ASHRAE members, $130 for Developing Economies members, and $285 for non-members. The fee for successive ASHRAE member and nonmember examination retakes will be at the full application fee amount.

Confidentiality

Information about candidates for testing and their examination results are considered confidential. Studies and reports concerning candidates will contain no information identifying any candidate, unless authorized by the candidate.
By participating in the BEMP program, each person who earns and maintains this certification agrees to be listed on the ASHRAE public website. Only those individuals who are active BEMP certificants will be listed on the site.

IV. Scheduling an Examination

Upon approval of your certification application, you will receive the following emails:

1. The first email will come from ASHRAE notifying you that your application has been approved. This email will include the deadline by which you must schedule and sit for your exam, provide detailed instructions for creating a test taker account in Kryterion's Webassessor platform, as well as a unique voucher code, which you will need in order to schedule your exam in Kryterion's Webassessor platform. Note: a candidate's voucher code is unique and may not be transferred to another candidate.
2. The second email will come from donotreply@webassessor.com. This is a "Candidate Account Confirmation" email confirming that you have successfully created your exam candidate account in Kryterion's Webassessor platform.
3. To schedule your exam, log into your Webassessor account and use the voucher code provided by ASHRAE. Note: candidates who use their voucher code to schedule the incorrect exam will forfeit their certification application fee and will have to reapply at the full application fee in order to sit for the correct examination. Once your exam has been scheduled, you will receive an "Exam Registration Confirmation" email from Kryterion confirming that your exam has been scheduled and containing a Candidate Authorization Code. Later, you will have to present this Candidate Authorization Code at the Test Center in order to launch your exam.

Candidates will be allowed to take only the examination for which the appointment has been made. No changes in examination type will be made at the Test Center. **UNSCHEDULED CANDIDATES (WALK-INS) WILL NOT BE ADMITTED** to the Test Center.

Test Center Locations

Examinations are administered by computer at over 1,000 test center locations worldwide: https://www.kryterion.com/locate-test-center/.

Holidays

No exams will be administered on these days: January 1 and December 25.

Accommodations for Candidates with Disabilities

ASHRAE complies with the Americans with Disabilities Act and strives to ensure that no individual with a disability is deprived of the opportunity to take the examination solely by reason of that disability. ASHRAE will provide reasonable accommodations for candidates with disabilities. Candidates requesting special accommodations must submit a completed "Request for Testing Accommodations" form found on the "ASHRAE Certification Forms" webpage at https://www.ashrae.org/education--certification/certification/ashrae-certification-forms. ASHRAE recommends that Requests for Testing Accommodations be submitted by candidates prior to their applying for certification.

Cancellations, Reschedules and No-shows

Candidates may cancel or reschedule an exam through their Webassessor portal with no additional fee up to 72 hours prior to the scheduled exam time. Cancellations and Reschedules within 72 hours of a scheduled exam time will incur a USD $90.00 fee. A no-show will result in the forfeiture of the exam fee altogether. In such cases, candidates will have to reapply at the "first retake" fee amount in order to schedule and sit for the exam.

Requesting an Extension

To request a 45-day extension of the 90-day deadline toschedule and take an exam, candidates must submit an application on the "Get Exam Ready" tab of their certification landing page on ashrae.org at least five business days prior to the end of the 90-day deadline. The administrative fee to initiate the extension is $50.00.

Inclement Weather, Power Failure or Emergency

In the event of inclement weather or unforeseen emergencies on the day of an examination, Kryterion will determine whether circumstances warrant the cancellation, and subsequent rescheduling, of an examination. In most cases, Test Center staff will contact any scheduled candidates impacted.

If power to a Test Center is temporarily interrupted during an administration, your examination will restart where you left off and you may continue the examination.

Candidates may contact Kryterion via live chat prior to the examination to determine if Kryterion has been advised that any Test Centers have been closed.

In order for Kryterion to be able to reschedule an exam missed due to sudden illness, exam candidates must provide a doctor's note. Examination absences due to work commitments may not be rescheduled, nor will they be refunded.

V. On the Day of Your Examination

It is recommended that candidates report to the testing location at least 15 minutes in advance of their scheduled testing time. A CANDIDATE WHO ARRIVES MORE THAN 15 MINUTES AFTER THE SCHEDULED TESTING TIME MAY BE MARKED AS ABSENT, THEREBY FORFEITING THE ABILITY TO SIT FOR THE EXAM. SUCH ABSENT CANDIDATES WILL HAVE TO REAPPLY AT THE "FIRST RETAKE" FEE FOR ANOTHER OPPORTUNITY TO SIT FOR THE EXAM.

When checking in to their Test Center exam, ASHRAE candidates must present their Exam Authorization Code. The Exam Authorization Code is needed to launch the exam. *Failure to present the Exam Authorization Code will cause the exam session to be forfeited without refund.*

You must bring two (2) forms of identification.

One must be a government issued photo ID. Secondary identification must include your printed name such as a credit card, bank debit card, or employee identification card.

Acceptable forms of government issued photo ID include a Driver's License, Identity card (non-driver license), Passport, Passport card, Green Card, Alien registration, Permanent resident card, or National identification card. The name on the identification presented must match the exact name on the candidate's certification exam registration.

Failure to bring the two required forms of acceptable identification, unfortunately, will result in you not being able to sit for your exam, and forfeiture of your application fee.

Military IDs and social security cards are not accepted.

Candidates are prohibited from misrepresenting their identities or falsifying information to obtain admission to the testing room.

Materials

You may bring to your exam administration a basic, standard function, non-scientific, non-graphing calculator.

Scratch paper and pencil will be provided to candidates by test center personnel.

Kryterion will provide U.S. examinees with ear plugs, upon request. International examinees may bring their own earplugs, though the proctor will need to inspect them.

Security

ASHRAE and Kryterion maintain examination administration and security measures that are designed to ensure that all candidates are provided the same opportunity to demonstrate their abilities.

The following security procedures apply during a Test Center examination:

- No cameras, notes, tape recorders, pagers, or cellular/smart phones are allowed in the testing room.
- You are encouraged to bring a basic, standard function, non-scientific, non-graphing calculator for the BCxP examination. Only basic, standard function, non-scientific, non-graphing calculators are permitted, but they will not be provided for you.
- No guests, visitors, or family members are allowed in the testing room or reception areas.
- No personal items, valuables, or weapons are allowed in the testing room. Only keys and wallets may be taken into the testing room and securely stored in the soft locker provided at the Test Center. You are responsible for items left in other areas.
- No personal belongings will be allowed in the testing room. Use of a cellular/smart phone or other electronic device is strictly prohibited and will result in dismissal from the examination.
- You will be provided with scratch paper and a pencil to use during the examination. You must sign and return the scratch paper to the supervisor at the completion of testing.. No documents or notes of any kind may be removed from the examination room. If you need a second piece of scratch paper, you need to ask the test proctor for another piece of paper and turn in the one you used before.
- Kryterion will provide U.S. examinees with ear plugs. International examinees may bring their own earplugs, though the proctor will need to inspect them.
- No questions concerning the content of the examination may be asked during the examination.
- Eating, drinking, or smoking will not be permitted in the testing room.
- You may take a break whenever you wish, but you will not be allowed additional time to make up for time lost during breaks.

Misconduct

Individuals who engage in any of the following types of conduct, either in the testing room or during a break, may be dismissed from the examination, in which case their scores will not be reported, and their examination fees will not be refunded. Examples of misconduct are when a candidate does the following:

- Creates a disturbance, is abusive, or is otherwise uncooperative,
- Displays and/or uses electronic communications equipment such as pagers, or cellular/smart phones,
- Gives or receives help or is suspected of doing so,
- Attempts to record examination questions or make notes,
- Attempts to take the examination for someone else,
- Or is observed with notes, books, or other unauthorized test aids.

Certification Examination Tips

Here are a few points to remember:

- Only one examination question is presented at a time. You may change your answer as many times as you wish during the examination time limit.
- If more than one answer seems correct, choose the best answer.
- Be sure to answer all questions, and bookmark the ones you want to double check later.
- Monitor your time.

Candidate Feedback

During the examination, candidates are permitted to submit online comments on any question. Comments will be reviewed, but individual responses will not be provided.

At the conclusion of their exam, candidates will be invited to provide any additional comments.

VI. BEMP Recertification: Eligibility & Application

Purpose

The purpose of recertification is to ensure that Certificants maintain a level of continuing competence through acceptable professional development and other in subject matter related to their certification.

Who Can Participate

Each BEMP certificant is required to renew their certification every three years. Membership in ASHRAE is not a prerequisite to recertify.

Deadlines

The renewal deadline is December 31 of the third year of certification. For example, a Certificant who earns a certification anytime in 2026 will have a renewal deadline of December 31, 2029.

The certification of individuals who fail to submit renewal fees and a completed application by the December 31 deadline will expire. Individuals with expired certifications will be advised to cease using the specific certification designation after their names. The names of non-renewing Certificants will be removed from the list of Certificants on the ASHRAE website, and BEMP digital badges will appear as "expired."

Non-renewing Certificants, however, may recertify during the three-month grace period from January 1 through March 31 immediately following the expiration of their certification. To do so, they must submit a completed recertification application.

Note: during the three-month grace period, PDHs may not be earned and applied toward the previous three-year certification period. After March 31, the grace period will conclude, non-renewing Certificants will no longer be able to renew their certification and the only way to regain the certification will be to reapply and pass the examination. Requests for a limited extension of the March 31 grace period deadline will be considered on a case-by-case basis; however, these requests must be submitted by the December 31 certification expiration date.

Completing and Submitting the Application

To be eligible for renewal, BEMP Certificants must submit a completed application, which documents on the application to having met eligibility requirements, together with an application fee. Up to 10 business days after receiving a complete application, ASHRAE will notify the applicant by email either of acceptance and approval of the application or of denial of approval and the reason thereof.

Overview of Recertification Eligibility Requirements

1. Forty-five (45) Professional Development Hours (PDHs)
2. Code of Ethics

Detailed Recertification Eligibility Requirements

1. Forty-five (45) Professional Development Hours (PDHs)

Professional Development is a process used by certified persons to maintain and advance their competency. To recertify, BEMPs must earn 45 professional development hours (PDHs) in subject matter related to their certification. Up to 24 of these PDHs may be earned from taking part in energy modeling projects. Acceptable PDHs may be earned in any country and language. Forty-five (45) PDHs must be earned from any combination of the PDH activities described in Appendix B.

2. Code of Ethics:

Applicants must agree to uphold and abide by a Code of Ethics, the tenets of which are set forth as follows:

1. Exercise a reasonable industry standard of care in the performance of professional duties.
2. Perform professional duties with trust, integrity, and honesty.
3. Hold paramount the health and safety of the public in the performance of professional duties.
4. Work in a manner consistent with all applicable laws and regulations; demonstrate integrity, honesty, and fairness in all activities; and strive for excellence in all matters of ethical conduct.
5. Act with integrity in any relationship that involves an employer or client and disclose fully to an affected employer or client any conflicts-of-interest resulting from business affiliations or personal interests.
6. Represent qualifications accurately and honestly.
7. Offer products and services only in areas where competence and expertise will satisfy the client and public need.
8. Agree to comply with and uphold all policies, procedures, guidelines, and requirements of the certification program; use the designation as authorized and only in the approved manner; acknowledge that the certificate and marks are the property of their respective owners; and return the certificate and discontinue use of the designation and marks when required to do so.
9. Accept responsibility for maintaining the credential through recertification and continuously uphold the Code of Ethics.
10. Voluntarily and immediately report any felony convictions or other legal dispositions that would constitute violations of this Code of Ethics that have not already been disclosed, regardless of when they occurred, and report any conditions that prohibit fulfillment of duties as set forth in the competency requirements.

Application Fees

On-time Discount (Application Received by Dec. 31)

ASHRAE Member: $245.00; Developing Economies Member: $145; Nonmember: $375.00

Grace Period (Application Received Jan. 1 - March 31)

ASHRAE Member: $375.00; Developing Economies Member: $225; Nonmember: $495.00

If an application is declined by ASHRAE, the amount of the fee, less $50 to cover administrative costs, will be refunded to the applicant.

ASHRAE retains the right to audit at any time the recertification applications of renewed certificants. In such cases, certificants will be requested to provide supporting documentation of PDHs earned. Acceptable documentation is issued by a third-party, for example a certificate of workshop completion, a copy of a publication or a college transcript. Certificates of participation or attendance must include the name of the certificant, the date earned, the number of clock hours of participation, and a title indicating the subject matter. In the event the renewed certificant is unable to document having earned 45 acceptable PDHs, the renewed certification will be revoked and the recertification application fee will not be refunded.

Candidate Responsibilities

Each candidate for ASHRAE Building Energy Modeling Professional (BEMP) recertification is responsible for the following:

- Submit a completed, signed application form and the application fee,
- In the event of recertification, successful candidates are required to inform the Certification Committee body, without delay, of matters that can affect their capability to continue to fulfill the certification requirements, or risk suspension or withdrawal of the certification,
- In the event a certificant's certification is suspended or revoked, she/he must return the certificate to ASHRAE. The certificant also must refrain from any further promotion of themselves as an ASHRAE Certified Professional and from future use of all references to an ASHRAE Certified status.

Appendix A: BEMP Content Outline

ASHRAE Building Energy Modeling Professional (BEMP) Certification Exam Content Outline

Section I: BEMP Exam Weightings by Domain
Section II: BEMP Exam Weightings by Subdomain
Section III: BEMP Exam Tasks

Section I: BEMP Exam Weightings by Domain	Weighting	# Items
Domain 1: Establishing the Modeling Scope	17%	17
Domain 2: Components of Building and Energy Systems	29%	29
Domain 3: Applications of Energy Models for Buildings	27%	27
Domain 4: Interpretations of Energy Model Results	27%	27
TOTAL	100%	100

Section II: BEMP Exam Weightings by Subdomain

Domain 1: Establishing the Modeling Scope		*Complexity Level and Number of Items*			
Subdomain	**Description**	*Recall*	*Application*	*Analysis*	*TOTAL*
1.1	Modeling Objectives	1	2	2	5
1.2	Analysis Methodologies	1	2	2	5
1.3	Software and Tool Selection	1	2	1	4
1.4	Project Scheduling and Budget Considerations	0	2	1	3
	TOTALS	**3**	**8**	**6**	**17**

Domain 2: Components of Building and Energy Systems		Complexity Level and Number of Items			
Subdomain	**Description**	*Recall*	*Application*	*Analysis*	*TOTAL*
2.1	Location and Climate Definition	1	1	1	3
2.2	Building Envelope and Partitions	1	2	2	5
2.3	Building HVAC and Domestic Hot Water Systems	1	2	2	5
2.4	Lighting Systems	1	2	1	4
2.5	Other Internal and Process Loads	1	1	1	3
2.6	District Energy Systems	1	1	0	2
2.7	Renewable Energy Systems	0	1	1	2
2.8	Controls	1	2	2	5
	TOTALS	**7**	**12**	**10**	**29**

Domain 3: Applications of Energy Models for Buildings		Complexity Level and Number of Items			
Subdomain	**Description**	*Recall*	*Application*	*Analysis*	*TOTAL*
3.1	Defining Appropriate Key Performance Indicators (KPIs)	2	3	3	8
3.2	Simulation Comparisons	2	3	4	9
3.3	Evolution of Simulation Techniques to Meet Project Methods	0	3	2	5
3.4	Baseline Building Models	2	2	1	5
	TOTALS	**6**	**11**	**10**	**27**

Domain 4: Interpretations of Energy Model Results		Complexity Level and Number of Items			
Subdomain	**Description**	*Recall*	*Application*	*Analysis*	*TOTAL*
4.1	Verification and Troubleshooting of the Simulation	1	2	3	6
4.2	Analyzing and Comparing Modeling Results	1	2	3	6
4.3	Greenhouse Gas (GHG) Emissions Analyses	1	1	1	3
4.4	Economic Analyses	1	1	1	3
4.5	Sensitivity Analyses	1	2	3	6
4.6	Project Deliverables	1	1	1	3
	TOTALS	**6**	**9**	**12**	**27**

ASHRAE BEMP Content Outline

Domain & Sub-Domains		Knowledge / Task (KT) Statements
Domain 1	**Establishing the Modeling Scope**	
A	Modeling Objectives	
	1	Define the purpose of the modeling study
	2	Interpret the design and operational intent of the project
	3	Evaluate the suitability of available design and operational information
	4	Link required project deliverables to goals of the modeling study
B	Analysis Methodologies	
	1	Differentiate among calculation methods within available software and tools. For thermal simulations, differentiate: a. Time neutral: bin method, degree day b. Time-sequencing: heat balance, weighting factor, thermal network, parametric
	2	Evaluate mathematical modeling methods for building components (e.g., empirical, first-principle)
	3	Translate a project into an energy model (e.g., Simplify building physics to a mathematical model; Anticipate the impact of simplification and model deficiencies; Translate BIM data into an energy model)
C	Software and Tool Selection	
	1	Evaluate the appropriateness of the methodology by characteristics of the project (e.g., project phase, project scope, climate, building type)
	2	Select the optimal software and tools to meet output data needs of the project (e.g., life-cycle cost analysis, energy code compliance, energy use and demand, parametric capabilities, individual component, performance, limitations of the modeling software)
D	Project Scheduling and Budget Considerations	
	1	Customize the modeling strategy to the design phase scope (e.g., conceptual, mid-design, design benchmarking, post-occupancy verification)
	2	Recognize budget implications of and on modeling methodology
	3	Make approximations targeted towards specific model limitations

Domain & Sub-Domains		Knowledge / Task (KT) Statements
Domain 2 Components of Building and Energy Systems		
A	Location and Climate Definition	
	1	Use commonly available data about the local climate (e.g., temperature, humidity, precipitation, solar, elevation, wind)
	2	Choose the appropriate source of weather data for a project (e.g., long-term representative, geographically equivalent, constructed, historical for a time period, future climate impacts, extreme weather years)
	3	Identify site characteristics (e.g., microclimates, orientation, adjacent buildings, shading, reflectance, vegetation effects)
B	Building Envelope and Partitions	
	1	Model exterior and interior opaque surface performance (e.g., geometry, boundary conditions, thermal transmission, thermal bridging of clear field, linear, and point transmittances, and capacitance)
	2	Model ground-coupled surface performance
	3	Model fenestrations (e.g., solar heat gain, shading, reflectance, glazing, framing, spectral)
	4	Model envelope infiltration (e.g., air-tightness, driving forces of infiltration)
C	Building HVAC and Domestic Hot Water Systems	
	1	Interpret HVAC and domestic hot water systems and translate into an energy model
	2	Model terminal equipment as per design (e.g., perimeter heating, fan coil units, heated/chilled radiant slabs, VAV/CAV boxes, fan curve, fan power) and model controls as per sequence of operation
	3	Model distribution systems (e.g., air, water, refrigerant)
	4	Model primary energy systems (e.g., chillers, boilers, heat rejection, thermal storage, combined heat and power, energy/heat recovery, heat pump including air, water, and ground source) and evaluate the sequence of operations
	5	Model packaged systems (e.g., split, roof-top, packaged thermal air-conditioner)
	6	Model ventilation (e.g., mechanical, natural, mixed-mode, energy recovery)
D	Lighting Systems	
	1	Model interior and exterior lighting system
	2	Model daylighting parameters
	3	Distribute lighting heat gain among room, return, and plenum

E	Other Internal and Process Loads	
	1	Differentiate between internal and process loads
	2	Model loads as sensible, latent, or radiant fractions and thermal distribution (e.g., occupants, water heating, plug loads, appliances, vertical transportation, commercial refrigeration, external lighting, special processes)
F	District Energy Systems	
	1	Model purchased energy
	2	Model shared energy systems (e.g., district steam, combined heat and power, etc.) including annual average efficiency
G	Renewable Energy Systems	
	1	Model solar thermal systems
	2	Model onsite power generation
H	Controls	
	1	Model HVAC controls: a. Temperature b. Humidification and de-humidification c. Supply air variation (e.g., supply pressure variation, supply temperature variation, supply pressure and temperature coordination) d. Outside air ventilation (e.g., quantity, quality, humidity, temperature, demand-control, heat recovery (single or dual to avoid reheat)) e. Supply and return flow (e.g., economizers, exhaust, maximum and minimum air flow requirements, capacity control) f. Central heating and cooling plant controls (e.g., water temperature reset)
	2	Model lighting controls (e.g., illuminance, occupancy, time-based, glare considerations, dimming)
	3	Model controls for miscellaneous equipment; (e.g., service hot water, process equipment, vertical transportation)
	4	Describe basic control sequences (e.g., 2-position, scheduled)
	5	Sequence equipment to manage loads (e.g., pumps, fans, large plant equipment)
	6	Model active solar control systems (e.g., electrochromic glazing, automated blinds)
Domain 3 Applications of Energy Models for Buildings		
A	Defining Appropriate Key Performance Indicators (KPIs)	
	1	Select whole-building metrics (e.g., cost, source energy consumption, emissions, site energy consumption, demand, PCI, EUI) to communicate project performance
	2	Select component metrics (e.g., equipment usage, component performance, equipment sizes) to assist with systems design
	3	Select metrics for indoor environmental conditions (e.g., temperature, ventilation rate, humidity, daylighting) to communicate impact on project performance

B	Simulation Comparisons	
	1	Compare alternative simulation results (e.g., code compliance, parametric studies, performance relative to standards, equipment and component selection)
	2	Compare a simulation to measured data: a. Statistical models b. Calibrated building-specific data (e.g., forensics, utility bills, measurement and verification)
	3	Compare Energy Use Intensity and Environmental Impacts to appropriate benchmark data sets and targets
	4	Evaluate the technical and financial feasibility of design solutions
C	Evolution of Simulation Techniques to Meet Project Methods and Objectives	
	1	Adapt simulations to the project phase
	2	Customize simulations for changes in building use
	3	Customize simulations for future conditions (e.g., future climate, future electrical grid)
D	Baseline Building Models	
	1	Distinguish between regulated and non-regulated energy use
	2	Define model inputs that are the same for both the baseline and proposed design models (neutral independent and neutral dependent) and those that can be different

Domain 3 Applications of Energy Models for Buildings

A	Defining Appropriate Key Performance Indicators (KPIs)	
	1	Select whole-building metrics (e.g., cost, source energy consumption, emissions, site energy consumption, demand, PCI, EUI) to communicate project performance
	2	Select component metrics (e.g., equipment usage, component performance, equipment sizes) to assist with systems design
	3	Select metrics for indoor environmental conditions (e.g., temperature, ventilation rate, humidity, daylighting) to communicate impact on project performance
B	Simulation Comparisons	
	1	Compare alternative simulation results (e.g., code compliance, parametric studies, performance relative to standards, equipment and component selection)
	2	Compare a simulation to measured data: a. Statistical models b. Calibrated building-specific data (e.g., forensics, utility bills, measurement and verification)
	3	Compare Energy Use Intensity and Environmental Impacts to appropriate benchmark data sets and targets
	4	Evaluate the technical and financial feasibility of design solutions

C	Evolution of Simulation Techniques to Meet Project Methods and Objectives	
	1	Adapt simulations to the project phase
	2	Customize simulations for changes in building use
	3	Customize simulations for future conditions (e.g., future climate, future electrical grid)
D	Baseline Building Models	
	1	Distinguish between regulated and non-regulated energy use
	2	Define model inputs that are the same for both the baseline and proposed design models (neutral independent and neutral dependent) and those that can be different
Domain 4 Interpretations of Energy Model Results		
A	Verification and Troubleshooting of the Simulation	
	1	Perform reality check (e.g., hand calculations, conformance with expected, mass and energy balance values)
	2	Perform software check to verify correct inputs are used in the model (e.g., metering, hourly reports, input files)
	3	Perform parametric bracketing to verify model sensitivity
	4	Review data for anomalies
	5	Reconcile anomalies using single time-step reports
	6	Examine unmet hours to determine if a design issue or modeling error
B	Analyzing and Comparing Modeling Results	
	1	Analyze simulation outputs (e.g., component metrics, whole-building metric, energy use intensity)
	2	Compare outputs to targets (e.g., rating programs, building labelling programs, codes)
C	Greenhouse Gas (GHG) Emissions Analyses	
	1	Conduct GHG emissions analyses
	2	Identify GHG emissions factors for applicable energy sources
D	Economic Analyses	
	1	Determine effects of utility rate structures and regulations on costs
	2	Calculate financial metrics (e.g., life-cycling costing, investment performance, effects of incentives)
E	Sensitivity Analyses	
	1	Perform a sensitivity analysis on modeling assumptions
	2	Identify critical synergistic interactions of building components (e.g., internal loads on heating/cooling performance; impact of SHGC on heating loads; effect of window-to-wall ratio on daylighting and thermal loads)

F	Project Deliverables	
	1	Communicate results
	2	Communicate methodology and assumptions on which results are based
	3	Submit documentation that affirms the accuracy and completeness of results
	4	Recommend actions
End of Content Outline		

Appendix B

Acceptable Professional Development Activities and PDHs Earned

Activity	PDHs
Participation in an energy modeling project. Two (2) PDHs may be earned for work in each Domain (see Appendix A), up to 8 total PDHs per project (2 PDHs x 4 Domains total).	Up to 24 PDHs total may be earned from taking part in energy modeling projects.
Completion of short courses, workshops and seminars in a related field	1 PDH for each hour of documented attendance
Attendance at meetings (e.g. a Standard Committee meeting) in a related field	1 PDH per hour of documented attendance (5 per year max)
Attendance at conferences (e.g. National, Annual, Regional) in a related field	1 PDH per hour of documented attendance
Successful completion of a course in a related field from an accredited institution of higher learning **Note:** *To qualify for this credit, a course must be offered regularly and must conclude with a test that sets a passing grade.*	15 PDHs per credit hour (semester system) OR 10 PDHs (quarter system)
Patent in a related field **Note:** *PDHs can be claimed after a patent is issued and the inventor submits details to the board. The invention must be related to engineering.*	10 PDHs per patent
Publication of article/paper/book in a recognized, peer reviewed journal in a related field (max. 3 per year). **Note:** *A "news" article in a technical or professional bulletin is not considered a published paper.*	10 PDHs per published item
Active participation in a professional or technical society in a related field **Note:** *The certificant must serve as an officer and/or must actively participate in a committee of the organization. PDHs are earned at the end of each year of service.*	2 PDHs per year per organization
Write ASHRAE certification exam items in a related field	5 PDHs per 10 acceptable exam questions, annually
Retake and pass BEMP certification exam	45 PDHs
Accreditation Visit Evaluator	3 PDHs, annually
Professional awards	2 PDHs per award
Teach courses and workshops in a related field. Faculty performing regular duties may earn PDHs.	2 PDHs per hour taught for the first presentation, then 1 per hour for subsequent equivalent presentations.

Certificants are not required to submit a report of Professional Development activities as part of the recertification application; however, a percentage of Certificants are randomly chosen for audit each year. If audited, a report of continuing professional development with documentation must be submitted to the Certification Coordinator for review.

For questions about any of the information about ASHRAE certification renewal requirements, including clarification of acceptable and reportable qualifying activities, please contact ASHRAE at certification@ASHRAE.org.

Revised 3/2025