

Candidate Guidebook High-Performance Building Design Professional (HBDP)



ISO/IEC 17024
Personnel Certification Program
#1139

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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 High-Performance Building Design Professional (HBDP) 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 HBDP Certification

The HBDP certification program, an ANSI-Accredited Personnel Certification Program under ISO/IEC 17024 (#1139), validates competency *to design and integrate sustainable HVAC&R systems into high performing buildings.*

Value

As of July, 2020, over 3,000 ASHRAE certifications have been earned in these key built-environment fields: Building Operations | Commissioning | Energy Assessment | Energy Modeling | Healthcare Facility Design | High-Performance Building Design | HVAC Design. Recognized by over 35 national, state and local government bodies, ASHRAE certifications increasingly have become the must-have credential for built-environment professionals, employers and building owners.

Updated HBDP Certification Exam Requirements in 2020

Beginning August 15, 2020, to ensure continued relevancy and validity ASHRAE's High-Performance Building Design Professional (HBDP) certification program will validate competency against updated certification exam requirements. The updates were made by the HBDP Exam Subcommittee following a survey of HBDPs in which ASHRAE researched the importance of the tasks in the Detailed Content Outline for the HBDP exam as they related to the successful performance of survey respondents' current job.

With unique candidate metadata embedded, the HBDP [digital badge](#) shares information about a candidate's knowledge, skills and abilities, while guaranteeing enhanced visibility and recognition in electronic media.



To review the updated Detailed Content Outline, please see Appendix A.

ANSI Accreditation



The HBDP certification is an ANSI accredited certification program to help ensure quality. For more than 125 years, ASHRAE resources have earned respect worldwide. The HBDP certification serves to reinforce that reputation.

About the Candidate Guidebook

The purpose of this guidebook is to provide information about the ASHRAE HBDP 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.

II. Eligibility & Application

Who Can Participate

Participation in the ASHRAE HBDP 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 High-Performance Building Design Professional (HBDP) program, a candidate must complete and submit an application. The application fee includes the fee to sit for the certification exam. Within a week after receiving an 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 HBDP Eligibility Requirements

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

Detailed Eligibility Requirements: HBDP Certification

1. Education and Word Experience

Any individual who submits a completed application and meets one of the following sets of education and work experience requirements will be eligible to take the examination for the HBDP certification.

- Government-issued or government-recognized license as a professional engineer OR
- Minimum of Bachelor's degree in engineering or a related field from an accredited institution of higher learning and a minimum of five years' experience in HVAC&R design 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 years' experience in HVAC&R design OR
- High School diploma or equivalent and a minimum of ten years' experience in HVAC&R design

2. Code of Ethics

As a condition of earning and maintaining certification, applicants for the Building Energy Auditor 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 HBDP Certification Exam

The HBDP 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 HBDP examination is provided in Appendices A and B.

The three cognitive levels tested on the HBDP 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 HBDP Candidate Guidebook for additional related information.

Application Fees

ASHRAE Member: \$395.00; Nonmember: \$595.00

ASHRAE Member Exam Retake: \$175.00; Nonmember: \$225.00

ASHRAE Member Second Exam Retake \$395.00; Nonmember \$595.00

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 High-Performance Building Design 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 PSI Services Inc. (PSI) will have access to ASHRAE certification exam candidate personal data. In the event Certification applicant personal data must be transferred to and from a testing location inside the European Union, PSI Services Inc. (PSI) is self-certified under the Privacy Shield Framework to ensure consistency with General Data Protection Regulation requirements.

III. About the Examination

Examination Preparation

Neither participating in a preparatory activity nor purchasing a publication is a requirement for participating in the HBDP program or for enrolling to take the HBDP 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 HBDP examination include, but are not limited to, the following:

Practice Exam

- ASHRAE HBDP Practice Exam

Design Guides

- ASHRAE GreenGuide: The Design, Construction, and Operation of Sustainable Buildings
- Advanced Energy Design Guide for Small to Medium Office Buildings: Achieving 50% Energy Savings Toward a Net Zero Energy Building
- Advanced Energy Design Guide for Small Retail Buildings: Achieving 30% Energy Savings Toward a Net Zero Energy Building

Standards and Guidelines

- ASHRAE Standard 55: Thermal Environmental Conditions for Human Occupancy

- ANSI/ASHRAE Standard 62.1: Ventilation for Acceptable Indoor Air Quality
- ANSI/ASHRAE/IESNA Standard 90.1 (I-P): Energy Standard for Buildings Except Low-Rise Residential Buildings
- ANSI/ASHRAE/IESNA Standard 90.1 (SI): Energy Standard for Buildings Except Low-Rise Residential Buildings
- ANSI/ASHRAE/IESNA Standard 90.2: Energy Efficient Design of Low-Rise Residential Buildings
- ANSI/ASHRAE/USGBC/IES Standard 189.1: Standard for the Design of High-Performance Green Buildings
- ASHRAE Guideline 0: The Commissioning Process
- ASHRAE Guideline 1.1
- ASHRAE Guideline 4: Preparation of Operating and Maintenance Documentation for Building Systems
- ASHRAE Guideline 14: Measurement of Energy and Demand Savings
- ANSI/ASHRAE/IESNA Standard 90.1 User's Manual

ASHRAE e-Learning

- Fundamentals of ANSI/ASHRAE/IESNA Standard 90.1

ASHRAE Learning Institute

- Fundamentals of ASHRAE Standard 62.1
- Fundamentals of Sustainable Buildings and High Performance Systems Design (GREENGUIDE)
- Advanced Energy Design Guide for Small Retail Buildings
- Advanced Energy Design Guide for Small Office Buildings
- Complying with Standard 90.1
- The Commissioning Process in New and Existing Buildings
- Complying with Requirements of ASHRAE Standard 62.1

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

All examinees receive a Score Report, which indicates a "Pass" or "Did Not Pass" result and a numerical score. U.S. examinees receive a paper Score Report immediately following the examination. Within five business days of taking their exam, international computer-based examinees will receive email notification from PSI Services, ASHRAE's exam delivery partner, that an unofficial Score Report is available for download. Pencil-and-paper examinees will receive such email notification within 4-6 weeks of taking their exam.

Successful Examinees

Successful examinees will be invited to claim their HBDP digital badge, which is the "certificate of certification," which includes a certificate, 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 “HBDP” certification only within the scope of the “HBDP” 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 HBDP 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 HBDP Certification Exam: 63/100

Life-to-Date Pass Rate for First-Time Examinees through 6/2020: 62%

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 \$175 for ASHRAE members and \$225 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 HBDP program, each person who earns and maintains this certification agrees to be listed on the ASHRAE public website. Only those individuals who are active HBDP certificants will be listed on the site.

Duplicate Score Report

Candidates may purchase additional copies of their Score Reports at a cost of \$25 per copy. Requests must be submitted to ASHRAE, in writing. The request must include the candidate's name, identification number, mailing address, telephone number, date of examination and examination taken. Submit this information with the required fee payable to ASHRAE in the form of a check, money order or cashier's check. Duplicate Score Reports will be mailed within approximately two weeks after receipt of the request and fee.

IV. Scheduling an Examination

When receiving email notification that your application has been approved, you also will receive instructions on how to schedule an examination appointment. Candidates may schedule their exam at a computer-based testing location, or as a remote online proctored exam at their home or office

ASHRAE [Remote Online Proctored](#) examination is a safe, secure and convenient way to schedule and sit for your certification exam.

Refer to the chart below for Test Center scheduling.

If you schedule by 3:00 p.m. Central Time on...	Depending on availability, your examination may be scheduled as early as...
Monday	Wednesday
Tuesday	Thursday
Wednesday	Friday/Saturday
Thursday	Monday
Friday	Tuesday

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 more than 300 Test Center locations in over 40 countries. Test Center locations are available at <https://www.ashrae.org/professional-development/ashrae-certification/certification-types>.

Holidays

No exams will be scheduled or administered on these United States holidays.

New Year's Day	Independence Day (July 4)	Christmas Eve Day
Martin Luther King Day	Labor Day	Christmas Day
Memorial Day	Thanksgiving Day (and the following Friday)	

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 complete a "Request for Testing Accommodations" form found on the "ASHRAE Certification Forms" webpage at [ashrae.org/education--certification/certification/ashrae-certification-forms](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.

Rescheduling an Examination Appointment

Candidates may reschedule an appointment for an examination at least two business days prior to the scheduled testing session. (See following table.)

If the examination is scheduled on . . .	The candidate must reschedule the examination by the previous . . .
Monday	Wednesday
Tuesday	Thursday
Wednesday	Friday
Thursday	Monday
Friday	Tuesday

The first reschedule request with a two-day notice will be free; any additional reschedules will be at the full certification application fee. A candidate who wishes to reschedule their examination appointment, but fails to contact PSI/AMP at least two business days prior to the scheduled date, will forfeit the certification application fee and must reapply to sit for the examination.

Likewise, exam candidates who are absent for their scheduled examination appointment will forfeit the certification application fee and must reapply to sit for the examination.

Requesting an Extension

A candidate can extend the 90-day deadline for scheduling and taking an exam by emailing certification@ashrae.org at least two business days prior to the end of the 90-day deadline. ASHRAE will provide an extension of up to 45 days.

Inclement Weather, Power Failure or Emergency

In the event of inclement weather or unforeseen emergencies on the day of an examination, PSI/AMP will determine whether circumstances warrant the cancellation, and subsequent rescheduling, of an examination. 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.

In order for PSI/AMP 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.

Candidates may contact the Weather Hotline at 800-380-5416 (24 hours/day) or visit www.goAMP.com and select "Candidates" prior to the examination to determine if it has been advised that any Test Centers are closed.

V. On the Day of Your Examination

It is recommended that candidates report to the testing location or log in to their remote online proctored exam 15 minutes in advance of their scheduled testing time. **A CANDIDATE WHO ARRIVES MORE THAN 15 MINUTES AFTER THE SCHEDULED TESTING TIME WILL NOT BE ADMITTED.**

When checking in to their Remote Online Proctored or Test Center exam, ASHRAE candidates must present a single, valid government-issued (either state, province or federal) identification card with current photograph and signature.

Acceptable forms of identification include: 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 name on the candidate's certification exam registration.

Military IDs are not accepted.

Note: an admission photo will be taken prior to the exam session.

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

Security

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

While the exam administration and security measures for Test Center and Remote Online Proctored exams are largely identical, there are some differences.

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 non-programmable scientific calculator for the HBDP examination. Only silent, non-programmable 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.
- Candidates may be subjected to a metal detection scan upon entering the examination room.
- 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, or you will not receive a score report. 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.
- PSI/AMP will provide U.S. examinees with ear plugs. International and pencil-and-paper 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.

The following security procedures apply during a Remote Online Proctored examination:

- No cameras, notes, tape recorders, pagers, or cellular/smart phones are allowed in the testing room.
- The wall behind the examinee and opposite the monitor must be bare, empty of pictures, open bookshelves or uncovered windows. Bookshelves may be covered with a plain sheet.
- You are encouraged to bring a silent, non-programmable scientific calculator for the HBDP examination.

- No visitors or family members are 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.
- Candidates may not use real paper as scratch paper. Instead, they may use a handheld, dry erase lapboard and marker, which must be erased at the conclusion of the exam. No documents or notes of any kind may be removed from the examination room.
- Candidates may not use ear plugs.
- 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.
- One (1) break up to five minutes long is allowed. The proctor must be notified and the clock will continue to run.

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, their scores will not be reported, and their application 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 aids.

Prior to attempting the certification examination, you will be given the opportunity to practice taking practice questions on the computer. The time you use for these practice questions is NOT counted as part of your certification examination time or result. When you are comfortable with the computer testing process, you may quit the practice session and begin the timed examination.

Certification Examination Tips

The practice questions should prepare you to navigate through the computer-based certification exam. Here are a few additional 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, computer-based testing candidates will be invited to complete a survey. Pencil-and-paper examinees wishing to complete the survey, however, must do so during the allotted examination time.

VI. HBDP 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 HBDP 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 2020 will have a renewal deadline of December 31, 2023.

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 HBDP 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. Extenuating circumstances, however, will be reviewed on a case-by-case basis by the Certification Committee.

Completing and Submitting the Application

To be eligible for renewal, HBDP Certificants must submit a completed application, which documents on the application to having met eligibility requirements, together with an application fee. Within a week of receiving an 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, HBDPs must earn 45 professional development hours (PDHs) in subject matter related to their certification. 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 C.

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: \$195.00; Nonmember: \$295.00

Grace Period (Application Received Jan. 1 - March 31)
ASHRAE Member: \$295.00; Nonmember: \$395.00

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 may be a certificate of workshop completion, a copy of a publication or a college transcript. 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 High-Performance Building Design Professional (HBDP) 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

High-Performance Building Design Professional Certification Examination Content Outline	Complexity Level and Number of Items			
	Recall	Application	Analysis	TOTALS
I. BACKGROUND INFORMATION	6	10	2	18
A. Sustainability Concepts	3	3	0	6
1. Define energy efficiency concepts.				
2. Explain the following:				
a. commissioning (e.g., owner’s-project requirements, commissioning process, measurement and verification, retrocommissioning).				
b. the design process (e.g., integration, team formation, team dynamics, documentation requirements, building information modeling).				
c. water usage efficiency.				
d. environmental impact (e.g., emissions, solid and fluid waste disposal).				
3. Demonstrate indoor environmental quality elements (e.g., thermal comfort parameters, ventilation, acoustics, chemical and human pollutants, lighting, biological contaminants).				
4. Analyze the building envelope.				
5. Consider capital equipment options.				
6. Define net-zero energy building concepts.				
7. Understand the definition of life cycle analysis:				
a. explain life cycle.				
b. identify benefits and limitations of analysis methods.				
B. HVAC Processes	3	2	0	5
1. Obtain the owner’s project requirements (OPR).				
2. Identify and evaluate alternative systems:				
a. selection.				
b. optimization.				
c. operability.				
d. maintainability.				
3. Comply with codes and standards in the design and construction documents.				
4. Utilize incentives offered, as applicable.				
5. Design hydronic and air distribution systems to minimize energy consumption.				

High-Performance Building Design Professional Certification Examination Content Outline	Complexity Level and Number of Items			
	Recall	Application	Analysis	TOTALS
<i>B. Sustainable Processes</i>	0	4	2	6
1. Utilization of natural resources.				
2. Analyze alternative/renewable energy sources:				
a. solar assisted DHW heating.				
b. photovoltaic.				
c. air to water heat pumps.				
d. air to air heat pumps.				
e. ground source heat pumps.				
3. Evaluate feasibility/options for a net-zero energy building.				
4. Explain implications of siting.				
<i>C. Environmental Improvement Programs and Rating Systems</i>	0	1	0	1
1. Advise customers on available programs and systems.				
2. Distinguish among programs and systems (pros, cons, costs).				
II. ENERGY ANALYSIS	6	8	8	22
<i>A. Envelope / Massing / Orientation Optimization</i>	0	2	2	4
1. Perform tradeoffs on the cost/benefit of alternatives.				
2. Determine the impact of climate on design.				
3. Analyze thermal mass effect.				
4. Analyze effect of envelope decisions on building pressurization.				
<i>B. Initial Assessment</i>	2	2	2	6
1. Identify facility parameters.				
2. Calculate preliminary building loads.				
3. Determine alternative system concepts.				
4. Identify interrelated processes and systems, and perform synergy analysis.				
5. Analyze energy consumption for different options (e.g., modeling).				
6. Compare alternative systems.				
<i>C. Ventilation</i>	2	2	4	8
1. Natural:				
a. analyze benefits and consequences of alternatives.				
b. apply thermal gradient theories (e.g., stack effect, buoyancy).				

<p style="text-align: center;">High-Performance Building Design Professional Certification Examination Content Outline</p>	Complexity Level and Number of Items			
	Recall	Application	Analysis	TOTALS
2. Mechanical:				
a. analyze benefits and consequences of alternatives.				
b. optimize zone loading with the mechanical system.				
3. Integrate natural and mechanical ventilation into hybrid systems.				
4. Identify key reference documents.				
5. Determine appropriate energy recovery methods.				
6. Assess cross contamination risk.				
C. Energy Compliance Modeling	2	2	0	4
1. Apply modeling techniques to predict the following with respect to established targets:				
a. code compliance.				
b. energy consumption.				
c. emissions impact.				
2. Distinguish among modeling techniques.				
3. Define energy modeling limitations and alternative calculation methods.				
III. INDOOR and SITE ENVIRONMENT	6	7	4	17
A. Thermal Comfort	1	4	2	7
1. Identify:				
a. comfort variables that affect the occupant (e.g., operative temperature, clo value, metabolic rate).				
b. key reference documents.				
c. thermal comfort requirements of individuals and groups.				
2. Zone the building and determine building pressurization requirements to optimize comfort and energy efficiency.				
3. Plan individual control and zoning strategies.				
B. Air Quality	3	2	1	6
1. Control indoor air contaminants/pollutants.				
2. Identify outdoor air ventilation requirements.				
3. Analyze air quality strategies.				
4. Recognize applications requiring governmental and regulatory codes.				
5. Recognize impact of external environment.				

High-Performance Building Design Professional Certification Examination Content Outline	Complexity Level and Number of Items			
	Recall	Application	Analysis	TOTALS
<i>D. Lighting</i>	2	1	1	4
1. Integrate the occupant's mission with lighting requirements.				
2. Analyze visual quality of the lighted space.				
3. Integrate daylighting and lighting.				
4. Assess site lighting goals.				
IV. CONTROLS and MONITORING	5	7	2	14
<i>A. Control Hardware</i>	2	1	0	3
1. Establish sensors, instrumentation, and calibration requirements.				
2. Define the control functions of the equipment.				
3. Determine the need for central monitoring and control such as:				
a. trending (logging intervals, storage capacity).				
b. alarms.				
c. remote access.				
<i>B. Control Strategies</i>	3	6	2	11
1. Establish control sequences that meet the owner's objectives.				
2. Integrate controls with equipment and systems.				
3. Instruct building operators in system functions.				
4. Establish:				
a. operator training requirements.				
b. operating and maintenance procedures.				
c. reporting requirements.				
5. Incorporate energy reporting capabilities.				
6. Optimize control sequences for energy conservation.				
V. BENCHMARKING WITH PERFORMANCE METRICS	1	4	2	7
<i>B. Project Performance Measurement</i>	0	1	0	1
1. Assess the efficiency of information transfer on high-performance requirements.				
2. Assess financial and time impact of implementing sustainable principles.				
<i>C. Energy Performance Verification</i>	1	2	1	4
1. Measure the performance of a building.				
2. Normalize performance data and trends.				
3. Compare the performance of a building against:				
a. projections.				
b. similar buildings.				

High-Performance Building Design Professional Certification Examination Content Outline	Complexity Level and Number of Items			
	Recall	Application	Analysis	TOTALS
<i>D. Environmental Performance Measurement</i>	0	1	1	2
1. Compare emissions measures to goals.				
2. Compare utility consumption to goals.				
3. Compare occupant satisfaction measures to goals.				
VI. WATER CONSERVATION	3	4	1	8
<i>E. Storm Water Management</i>	1	2	0	3
1. Analyze feasibility of harvesting options and uses.				
2. Define:				
a. storage methods and quantities.				
b. treatment options.				
3. Calculate optimum capacity and use.				
4. Apply best management practices.				
<i>F. Domestic Water Management</i>	1	2	1	4
1. Analyze fixture selection impact.				
2. Determine irrigation reductions.				
3. Develop strategies to reduce potable water consumption for:				
a. reclaimed water.				
b. non-potable water harvesting.				
c. irrigation optimization.				
d. types of vegetation and planting.				
<i>G. Process / Wastewater Management</i>	1	0	0	1
1. Condition and reuse processed and wastewater.				
2. Comply with federal regulations.				
VII. COMMISSIONING IN SUSTAINABLE CONSTRUCTION	3	3	1	7
<i>H. Documentation</i>	2	1	0	3
1. Identify unique requirements for sustainable construction.				
2. Determine the owner's objectives and criteria.				
3. Define commissioning scope.				
4. Specify systems and operations.				
5. Identify the sequence of operations.				

High-Performance Building Design Professional Certification Examination Content Outline	Complexity Level and Number of Items			
	Recall	Application	Analysis	TOTALS
<i>I. Commissioning Process</i>	1	2	1	4
1. Integrate quality control into design and construction.				
2. Verify quality assurance in design and construction.				
3. Evaluate post-occupancy performance.				
4. Develop a feedback/corrective action methodology.				
5. Implement corrective actions (e.g., recommissioning, retrocommissioning).				
<i>I. ENERGY and MATERIALS USE and MANAGEMENT</i>	4	3	0	7
1. Encourage the owner to hire an energy manager.				
2. Identify needed competencies of staff who will service a building.				
3. Implement a maintenance plan.				
4. Recommend sustainable practices for:				
a. housekeeping and site management.				
b. renovation projects.				
<i>Totals</i>	34	46	20	100

Appendix B

Acceptable Professional Development Activities and PDHs Earned

Activity	PDHs
Completion of short courses, workshops and seminars in a related field	1 PDH for each hour of documented attendance
Attendance at meetings and conferences (e.g. National, Annual, Regional) or special conferences in a related field	1 PDH for each hour of documented attendance
Successful completion of a course in a related field from an accredited institution of higher learning <i>Note: To qualify for this credit, a course must be offered regularly and must conclude with a test that sets a passing grade.</i>	15 PDHs per credit hour (semester system) OR 10 PDHs (quarter system)
Patent in a related field <i>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.</i>	10 PDHs per patent
Publication of article/paper/book in a recognized, peer reviewed journal in a related field (max. 3 per year). <i>Note: A "news" article in a technical or professional bulletin is not considered a published paper.</i>	10 PDHs per published item
Active participation in a professional or technical society in a related field <i>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.</i>	2 PDHs per year per organization
Write ASHRAE certification exam items in a related field	5 PDHs per 10 acceptable exam questions, annually
Pass ASHRAE certification exam (E.g. HBDP should pass HBDP 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 Certification Coordinator at certification@ASHRAE.org.