



Certified Passive House Designer/Consultant Examination Regulations

Valid as of 01 July 2011

1 Introduction

The Passive House Institute (hereafter referred to as PHI) has developed the “Certified Passive House Designer/Consultant“ certificate so that special qualifications in the field of particularly energy-efficient construction can be substantiated.

The “Certified Passive House Designer” or “Certified Passive House Consultant” certificate can only be used by the certificate holder.

There two methods of attaining the Passive House Designer/Consultant certificate, which have been set out in Section 2 (Written Examination) and Section 3 (Qualification by means of a Passive House project).

In order to attain the “Passive House Designer” certificate, it is necessary to provide proof of a qualification that allows the holder to carry out planning of buildings or technical building services at his or her own responsibility (see Sections **Fehler! Verweisquelle konnte nicht gefunden werden.** and 3.4). Applicants who cannot provide proof of their qualifications or whose documents do not meet the requirements will receive the “Passive House Consultant” title. The PHI will decide whether to award the “Passive House Designer” or “Passive House Consultant” title.

The certified designers and consultants will be listed in a special publicly accessible website by the PHI. At the time of coming into effect of these Examination Regulations, this is as follows: www.passivhausplaner.eu.

The validity of each certificate is limited to 5 years (see Section 4). This may be renewed if the holder provides further proof as given in Section 5 .

2 Written Examination

The first alternative for attaining the “Certified Passive House Designer/Consultant” certificate is through completion of a written examination.

2.1 Examination dates

Examinations are offered at irregular intervals by institutions for further education that cooperate with the PHI under contract. All examination dates are set by the PHI and published on the internet (see Section 1), together with the names of the PHI-accredited examining institutions.

2.2 Requirements for participation in the examination

Every natural person can apply for any of the offered examination dates at any of the examining institutions. The institution providing the examination may limit the number of participants on a first come, first served basis according to the date on which the written application is received. The examining institutions are obliged to accept applications also from participants who have not attended a Passive House Designer Course. The examination may be repeated.

2.3 Location, time, number of participants, supervision

The examination location, number of participants and supervision shall be determined by the examining institution. The supervisors must be able to guarantee that the examination is carried out according to the rules laid out in these regulations.

2.4 Fees

Examination participation is subject to a fee. Every participant must pay a fee that shall be fixed by the institution organising the examination. This fee covers all expenses for the examination, marking and issue of the certificate (in case of successful completion of the examination), and for inclusion of the certified holder in the list on the www.passivhausplaner.eu website for a period of five years. The fees must be paid in advance and irrespective of examination success.

2.5 Examination questions and annulment

Examination questions will be compiled by the PHI according to the list of learning targets (Appendix I of these regulations) and forwarded to the examining institution one day before the examination. Examining bodies or other contracting parties that have been commissioned by the PHI with the translation of the examination in the respective country's language will receive the examination questions at least four days before the examination date. The correct number of documents with the examination questions required (one copy for each participant) shall be printed and tacked by the examining body who shall undertake to store these carefully and inaccessibly for participants. The examination questions may not be passed on to others or published, even after completion of the examination (e.g. for the purpose of examination preparation etc.).

If, in opposition to these regulations, it turns out that a participant has gained access to examination questions in advance of the examination date, the whole examination must be annulled. **In such a case examination fees will not be refunded. Any claims for damages on the part of the affected participants against the PHI are expressly excluded.** Participants who were involved in the attempted fraud will be barred from further examinations for at least one year. If the examining institution or any of its representatives is responsible for the fraud, it will be excluded from offering further examinations for at least one year and until credible evidence of reliability is produced. The PHI reserves the right to take further action.

2.6 Examination duration and procedure, written confirmation, permissible aids

The written examination will last three hours (processing time only).

The examining body must keep a record of the examination procedure. The original protocol must be handed over to the PHI together with the examination documents.

Participants must present proof of identity before the start of the examination.

Before the examination, every participant must present an application for admission to the “Certified Passive House Designer”/ “Consultant” Examination (Appendix II of these regulations) and accept the terms and conditions listed in these examination regulations by signing this. The original signed document must be handed over to the PHI by the examining institution together with the examination booklet.

A copy of the professional qualification must be provided on the date of the examination at the latest, if this has not already been done. This should also be handed over to the PHI together with the examination booklet.

A printed version of all written questions that have to be answered shall be handed to the participant at the time of the examination.

Each participant must answer the questions independently and without communicating with other persons. Only writing utensils with indelible ink may be used. In particular, the examining institution must ensure that no pencils are used. Every participant should ensure in his/her own interest that his/her writing is easily legible. Illegible parts will not be evaluated and will count as omissions.

As a rule, questions shall be answered in written form. Only the examination booklets provided by the examining institution shall be used. These will contain empty pages in case the space provided for answering the question is insufficient. Any other attachments are not allowed. Removal of papers is not permitted; however, the

participant may clearly strike out any of his work which he/she wishes to be disregarded. Immediately after the papers are submitted, the examining body shall check the examination booklets for completeness.

At the end of the written examination, all examination booklets which were provided to participants must be returned. There is no right of retention of the booklets.

Written confirmation of participation in the examination will be provided by the examining institution to each participant.

Permissible examination aids: Course documents and textbooks, calculator or other calculation aids.

Not permissible aids: Programmable calculators, mobile phones and all devices that allow connection to the internet or publishing of the examination questions afterwards.

2.7 Sample Solution

The PHI shall provide the examining institution with a sample solution with the number of points to be awarded. This sample solution will be made available solely to the first markers; the examining institution may not pass these on to anyone and they should be kept safely locked up. The PHI reserves the right to publish the sample solutions of completed examinations on the internet.

2.8 Correction

Correction will take place in accordance with the allocation of points as laid out by the PHI. The correctness of the answers shall be decisive for the awarding of points; these may differ from the sample solution, but must have the same worth as regards the contents. A point will be deducted for unclear representation. Spelling mistakes and phrasing errors etc. will be corrected; however they will incur a maximum deduction of 2 points from the overall result. The first correction shall be carried out on the original examination booklet in a manner that shall be clearly distinguishable from the examinee's work and shall be written for each part of the task in an easily comprehensible way with a coloured pen. The first correction of each examination booklet must be indicated clearly giving the name of the corrector on each booklet. The examining body shall carry out independent internal cross-checking of the first correction (four-eyes principle) for examinations which are not in German or English. This internal cross-checking must also be clearly indicated in each examination booklet giving the name of the corrector.

All first-marked examination booklets shall be sent to the PHI in the original, four weeks after the examination date at the latest, in a single batch together with the original application forms and the copies of the professional qualifications. The examining institution must ensure that the packet reaches the PHI safely, by choosing a suitable mode of dispatch. The examining institution may make copies of the first-marked examinations and keep them as an additional security. The examining institution will be responsible for the inaccessible and permanent safekeeping of these copies, in accordance with Section 2.5.

The PHI shall check the corrections within a further four weeks of receipt by the PHI of the complete examination documents and the completed processing chart in digital form.

2.9 Examination result, right for access

The examination shall be deemed to have been passed when at least 50% of the total possible marks have been achieved. Every participant shall be informed of his/her result via email (“pass” or “fail”) by the PHI.

In the event of varying correction results of the first correction and the second correction by the PHI, the result of the second correction by the PHI shall apply. In the case of any queries, the participant should refer to the examining institution. The PHI cannot deal with direct enquiries by examination participants.

In case of failure, the participant has the right to view the marked papers at the PHI within one year of the examination date, after making an appointment. The inspection shall last 45 minutes and shall take place individually. A separate fee will not be charged for this.

In the event that a journey to the PHI represents an unreasonable hardship, the papers may be viewed at the examining institution after agreement with the PHI; a copy of the finally corrected examination and a form for keeping a record of the procedure will be sent to the examining institution for this purpose. The examining institution shall ensure the confidential handling of these documents.

The examining institution shall also ensure that the inspection by the participant is supervised at all times by a person who is able to answer any questions about the examination contents and the correction procedure. The examining institution guarantees that no transcriptions, photographs or copying by any other means of the examination documents will be made during the inspection, which may enable publication of the examination later on. During the inspection, the participant may point out any assessments which are inappropriate in his/her view, of which a record will be made. Within two weeks the PHI shall decide whether any subsequent

correction is necessary (after receipt of the protocol by the PHI if the inspection took place at another location) and will carry these out within a further two weeks and will inform the examination participant of the result via e-mail (“pass” or “fail”). The correction made shall then be final and there will be no further right for access. Legal recourse is excluded.

2.10 Passive House Designer or Passive House Consultant

The PHI shall issue the “Passive House Designer” or “Passive House Consultant” certificate after successful completion of the examination.

In order to qualify for a certificate, evidence of a qualification in an appropriate professional field is required, which allows the holder to carry out planning of buildings or technical building services at his or her own responsibility. A copy of a letter (e.g. diploma, master craftsman’s diploma, or similar document, translated into German or English if applicable) proving this qualification must be provided to the examining institution. On the basis of these documents the examining institution shall decide whether to issue a Passive House Designer or Passive House Consultant certificate to the applicant upon successful completion and shall also recommend the professional title under which he/she will be listed on the internet later on. The examining institution shall forward a copy of the qualification document to the PHI, together with the original signed application and the examination booklet.

Applicants who cannot provide proof of their qualifications or whose documents do not meet the required conditions will receive the “Passive House Consultant” title.

The final decision regarding the award of the “Passive House Designer” or “Passive House Consultant” title will be made by the PHI .

3 Qualification through a Passive House model project

The qualification described in this Section is an alternative method of attaining the “Certified Passive House Designer/Consultant” certificate.

Credible proof that the applicant has exercised full responsibility for the project planning and design of the building is a prerequisite for achieving the title of a “Certified Passive House Designer/Consultant” by means of a Passive House model project.

3.1 Definition: Passive House model project

According to these regulations a Passive House model project is a building, which fulfils the following conditions:

- The building has been completed and is being used for residential purposes.
- The building is a Passive House which has been certified according to PHI criteria by a PHI-approved certification authority or a quality approved modernisation using Passive House components (EnerPHit) according to PHI criteria.
- The building is listed in the internet database “Built Passive House Projects”

3.2 Application procedure

The designer shall make an application to the PHI for the “Certified Passive House Designer/Consultant” certificate in accordance with Appendix IIa. This application should include the following:

- A copy of the building certificate of the model project including the name of the certifying authority
- A PHPP calculation for the Passive House model project in electronic form (unprotected Excel file)
- A detailed description of the object as laid out in Appendix III in German or English. This should be provided to the PHI in electronic form as a pdf **and** as Word file (please save as a “Word 2000” file or alternatively in the rtf file format). The PHI has the right to demand correction of this object description and to publish it on the internet.
- The project ID number of the building as listed in the online Passive House database (www.passivhausprojekte.de).
- A copy of a document (e.g. diploma, master craftsman’s diploma, or similar document, translated into German or English if applicable) proving the applicant’s qualifications (see Section 3.4).
- If the applicant is not the same as the designer of the building, an informal written explanation by the designer is necessary, to the effect that the applicant was responsible for the parts of the planning relevant for the Passive House (particularly the energy balance calculation with the PHPP and the planning of the details).

By signing the application form (Appendix IIa), the applicant confirms that he/she assumed full responsibility for planning of the Passive House model project described in the object documentation. The certificate will be revoked if this information should prove to be false. The PHI reserves the right to ban the applicant for an indefinite period of time.

3.3 Evaluation and fees

After receipt of the application, the PHI will make out an invoice for the evaluation fee according to the fee schedule (Appendix VI). This charge covers all services for grading, issue of the certificate (if applicable) and inclusion in the database (see Section **Fehler! Verweisquelle konnte nicht gefunden werden.**) for a period of five years. The fee is payable in advance; the certificate will only be issued if all requirements are fulfilled. The burden of proof rests with the applicant.

The PHI shall verify the documents upon receipt of the fee. The PHI reserves the right to obtain further information in order to verify the suitability of the respective Passive House project for certification as a Passive House Designer/Consultant. The PHI also reserves the right to demand changes in the documents, which must then be revised and resubmitted by the applicant. The applicant will be informed by the PHI if the building is suitable as a Passive House model project and shall publish the reviewed object documentation as well as the applicant on the internet (see Section 1) as a certified Passive House Designer Consultant.

3.4 Passive House Designer or Passive House Consultant

After the successful process of qualification through a Passive House model project, the PHI shall issue the “Certified Passive House Designer” or “Certified Passive House Consultant” certificate.

In order to attain the “Passive House Designer” certificate, it is necessary to provide proof of a qualification that allows the holder to carry out planning of buildings or technical building services at his or her own responsibility. A copy of a letter (e.g. diploma, master craftsman’s diploma, or similar document, translated into German or English if applicable) proving this qualification must be provided to the PHI.

Applicants who cannot provide proof of their qualifications or whose documents do not meet the required conditions will receive the “Passive House Consultant” title. The PHI will decide whether to award the “Passive House Designer” or “Passive House Consultant” title.

4 Issuance of the certificate, validity

After successful completion of the written examination (Section 2) or the successful completion of the process of qualification by means of a Passive House model project (Section 3), the PHI will issue the “Certified Passive House Designer” or “Certified Passive House Consultant” certificate and will automatically send it to the applicant. The applicant will be included in the list of “Certified Passive House Designers”, which will be published on a special website by the PHI. At the time of coming into effect of these Examination Regulations, this is: www.passivhausplaner.eu.

The certificate will be valid for a period of five years. The regulations for a possible renewal are laid out in Section 5.

The participant is permitted to use his/her certificate and the electronically conveyed logo (“Certified Passive House Designer/Consultant”) for advertising purposes and only in an unchanged form. The certificate and logo may only be used during the period of validity of the certificate. The PHI reserves the right to take legal action in the case of non-compliance.

The certified designer/consultant has no right to use other copyright symbols of the PHI unless this has been expressly agreed.

5 Renewal of the certificate “Certified Passive House Designer” / “Certified Passive House Consultant”

The certificate may only be renewed by means of a Passive House model project; renewal will be valid for another five years.

5.1 Application for renewal of the certificate

The application form for this is included in Appendix V of these Examination Regulations. Fees will be charged in accordance with Appendix VI for renewal of the certification for applications made within the validity period of the existing certificate. The date on which the full documents are received by the PHI will be decisive for the application. The fees applicable for a new application shall be charged if the application reaches the PHI after the expiry of the validity period of the certificate.

The application for renewal of the certificate must be accompanied by documentation for an as yet unsubmitted Passive House model project that has been realised within the last five years before the application is made, as described in Section 3.2.

5.2 Verification and fees for renewal

After receipt of the application for renewal, the PHI will make out an invoice for the verification fee according to the fee schedule (Appendix VI). This charge covers all services for the evaluation of the documents, the renewal of the certificate (if applicable) and inclusion of the certificate holder on the internet (see Section 4) for another five years. The fee is payable in advance; the certificate will only be renewed if all requirements have been fulfilled. The burden of proof rests with the applicant.

The PHI shall review the submitted documents upon receipt of the fee. The PHI reserves the right to demand changes to the documents, which must then be carried out and resubmitted by the applicant. If the building is eligible as a Passive House model project, the PHI will inform the applicant of this. After successful verification, the object documentation will be published on the internet and the "Passive House Designer" or "Passive House Consultant" certificate will be renewed.

6 Cases of fraud, annulment of certificate

Should it transpire that a participant has consciously provided incorrect information or violated any of the provisions in these Examination Regulations or should her/she commit an unlawful act or breach of the professional ethics, thereby jeopardising the image of Certified Passive House Designers or the Passive House concept, the PHI may revoke his/her certificate. He/she will be informed of this in writing. In such a case, the participant must cease using the "Certified Passive House Designer" logo with immediate effect, and must also remove it from all distributed documents and appearances (e.g. internet). In serious cases the PHI reserves the right to take legal action and to ban the participant from further examinations indefinitely.

7 Written form, acknowledgement of the examination regulations, validity period of the present Examination Regulations, severability clause, court of jurisdiction

All agreements between the applicant, the examining institution, and the PHI must be made in written form.

With this application for admission to the examination or the application for qualification through a Passive House model project, the applicant acknowledges the provisions of these Examination Regulations, in particular the exclusion of legal action regarding the correction of the examination and verification of the Passive House model projects.

This agreement comes into effect on 01.07.2011 and is valid indefinitely until a new version becomes effective. The validity of all older examination regulations expires with the coming into effect of the present version of the Examination Regulations. The participants are bound by the provisions of these Examination Regulations for the duration of the agreed period.

The PHI reserves the right to make any changes which will be published before their coming into effect.

If a provision of this contract becomes invalid, this shall not affect the validity of the remaining provisions. The invalid provision shall be replaced by another provision that comes closest to the purpose of this agreement.

The place of jurisdiction is Darmstadt.

Appendix I

List of learning targets

“Certified Passive House Designer”

This list of learning targets is based on the assumption that the aspiring Certified Passive House Designers are already familiar with the conventional practices of construction.

1. Definition of a Passive House

- Knowledge of the climate independent definition of a Passive House and the principles it is based on: The maximum heating load must not exceed the amount of heat that can be supplied to the building via the fresh air required for good indoor air quality. $\{p_{\max, \text{heat}} \leq 10 \text{ W/m}^2 \text{ for residential buildings}\}$
- Knowledge of the hygiene criteria, fresh air requirement per person, extract air volumes and minimum air change rates; understanding of the relationship between relative indoor air humidity and the effective air exchange; for cool temperate climates especially under cold weather conditions

2. Passive House criteria

Heating load	$p_{\max, \text{heat}} \leq p_{\text{supply air, max}}$	{all climates}
Annual space heating demand	$q_{\max, \text{heat}} \leq 15 \text{ kWh}/(\text{m}^2\text{a})$	{climate dependent}
Annual space cooling demand	$q_{\max, \text{cool}} \leq 15 \text{ kWh}/(\text{m}^2\text{a})$	{climate dependent}
Airtightness Why is this a separate criterion?	$n_{50} \leq 0.6 \text{ h}^{-1}$	{all climates}
Annual primary energy demand Which energy services are included in the definition of $e_{\max, \text{prim}}$?	$e_{\max, \text{prim}} \leq 120 \text{ kWh}/(\text{m}^2\text{a})$	{all climates}
Frequency of overheating	$t_{\max, \vartheta > 25^\circ\text{C}} \leq 10\% t_{\text{use}}$	{all climates}

- Thorough understanding of the meaning and use of the terms heating load, annual space heating demand, n_{50} -value, primary energy, final energy, energy

services, frequency of overheating; understanding of the significance of the treated floor area A_{TFA} . What is the definition of the reference area for a Passive House?

3. Basic principles of planning a Passive House

3.1 Thermal insulation – basics

- Understanding of the principle of thermal envelopes, including a good perception of the heat insulation qualities required for a Passive House in terms of both the insulation thickness and quality and the prevention of thermal bridges as well as the relationship between extensive and complex thermal envelopes and the respective building costs.
- Understanding of the link between U-values and internal surface temperatures
- Familiarity with typical U-values of opaque building structures for Passive Houses in cool temperate climates
- Knowledge of typical lightweight and solid structures suitable for Passive Houses in cool temperate climates
- Acquaintance with thermal bridge coefficients (exterior and interior dimensions) and qualitative analyses of building envelopes in terms of potential thermal bridges.
- Understanding of the principle of thermal bridge free construction.
- Quantitative evaluation of basic thermal bridges
- Knowledge of suitable insulating materials and their main characteristics.

3.2 Airtight envelopes – basics

- Understanding of the principle of a “single airtight envelope”; why is airtightness so important?
- Knowledge of suitable lightweight and solid structures in terms of airtightness;
- Knowledge of suitable airtight joints for lightweight, solid and mixed constructions
- Knowledge of suitable air sealing solutions in case of leakages at intersections
- Awareness of potential weak spots
- Awareness of the significance of the planning task “airtightness”
- Knowledge of test procedures (airtightness test) and requirements
- Understanding of basic leakages (e.g. holes from nails, power sockets, window connection joints, unrendered exterior wall surfaces, loose foil, unsealed openings, unsealed downpipes)
- Knowledge of permanent solutions for fixing simple leakages

- Assessment of difficult leakages (timber flooring in solid constructions, unrendered exterior walls behind interior linings (e.g. stairs), regular penetrations (e.g. continuous rafters))
- Knowledge of how problematic leakages can be avoided

3.3 Transparent exterior components – basics

3.3.1 Window U-values according to EN 10077

- Acquaintance with U_g , U_f , and Ψ_g values and the installation-based thermal bridge coefficient (Ψ_{mount})
- Difference between “Certified Passive House windows” and “approved (window) connection details”
- Understanding of the thermal quality parameters for curtain wall systems;
- Understanding of the comfort criterion (interior surface temperature of Passive House suitable windows)
- Estimation and determination of frame ratios
- Understanding of triple low-e glazing systems and knowledge of the main heat transfer mechanisms in windows. (Heat conduction through the filling gas, radiation of heat and low-e coating, convection)
- Understanding of the design and purpose of a window’s glass edge system
- Why is a thermally optimised glass edge system (warm-edge) important?
- What solutions are there for reducing the thermal bridge coefficient at the edge of the glazing? (warm-edge, deep glazing rebate)
- What properties are required for a Passive House window? (knowledge of all specific values, if necessary compensating radiators)
- Acquaintance with the PHPP window sheet

3.3.2 Heat gain through windows according to PHPP

- Knowledge of the g-value definition according to EN 410, g-values expressed to two significant figures
- What is the difference between the g-value and light transmittance (ISO 9050)?
- Knowledge of typical values for different types of glazing
- What other factors reduce the solar energy gain? (Angle of incidence, dirt, frame ratio, shading, reflection)
- Estimation and determination of frame ratios
- Simple examples of energy transmission through windows (cold day, heating period, summer)

- Knowledge of the energy criterion for glazing ($U_g - 1.6 \text{ W}/(\text{m}^2\text{K}) \cdot g \leq 0$) and its application;
- Knowledge of the influence of a building's orientation on the solar energy supply
- Knowledge of typical self-shading effects of buildings on their solar energy supply
- Acquaintance with the PHPP shading sheet

3.3.3 Impact on summer comfort

- Solar heat loads during summer months: why is this value so high?
- The connection between a building's orientation and solar heat loads during summer months (qualitative understanding)
- Effective ways to counter high heat loads (qualitative analysis)
- Knowledge of limitations for transparent surfaces without temporary shading
- Knowledge of the difference between internal and external temporary shading
- Acquaintance with the PHPP summer shading sheet

4. Ventilation in a Passive House – basics

4.1 Why is ventilation essential?

- Knowledge of the most important air contaminants in buildings
- Knowledge of the CO₂ criterion
- Determination of fresh air flow rates for adequate ventilation [Pfluger 2003]
- Relationship between the relative indoor air humidity and sources of humidity inside the building, the rate of fresh air supply and the external temperature
- Why does the air flow need to be limited even during winter? What can be done when higher ventilation rates are required for other urgent reasons?

4.2 Natural ventilation

- Understanding of driving forces of natural (non-mechanical) ventilation (qualitative understanding)
- Knowledge of types of natural ventilation: joints and cracks, tilted windows, open windows
- Understanding of factors that will influence natural ventilation effects; typical air change rates (qualitative understanding)
- Why is non-mechanical ventilation not suitable for Passive Houses located in regions with a considerable amount of heating degree days? (unreliability,

heat losses)

4.3 Exhaust systems

- Understanding of the general layout of an exhaust ventilation system (residential buildings): areas for air supply, air transfer and air extraction (ability to identify these zones in floor plans)
- Knowledge of essential components: air inlets, extract air outlets, exhaust air fan, filters
- Identification of advantages of air extraction devices over non-mechanical ventilation
- Why should air extraction devices not be used in Passive Houses in regions with a considerable amount of heating degree days? (heat losses)

4.4 Balanced supply and exhaust air systems with heat recovery

- Understanding of the general layout of a supply and extraction device (residential buildings): areas for air supply, air transfer and air extraction (ability to identify these zones in floor plans)
- Knowledge of essential components: supply air inlets, supply air ducts, air transfer openings, extract air outlet, extract air ducts, silencers, fresh and extract air filters, central unit (and its components)
- Knowledge of the typical dimensions of such ventilation devices [PHPP]
- Knowledge of air circulation effects: mixing of indoor air
- Knowledge of the Coanda effect
- Knowledge of the potential and limits of decentralised systems
- Knowledge and assessment of typical solutions
- Ability to mark supply and extraction points in floor plans
- Knowledge of the required filter qualities and why these are necessary
- Knowledge of the hygiene requirements for Passive House ventilation systems (no cooling, no active dehumidification and humidification, continuous/dry operation, upstream fresh air filter EU-class F7 or better) and reasons for these requirements; Literature: [AkkP 23]
- Exterior air inlets: what factors need to be taken into account? (filters, hygiene (location of the exterior air inlet), weather, condensation and frost protection, sound proofing)
- Knowledge of suitable duct systems. Basics of planning ducts (short pathways, smooth surfaces, fittings, typical cross sections, air-tightness)

- Under which conditions do ducts need to be insulated and how is it done properly? (generally: cold ducts in warm rooms, in case of reheating or recooling, protection from condensation)
- Knowledge of the requirements for Passive Houses suitable central ventilation units.
- Significance and calculation of effective (dry) heat recovery rates
- Significance and calculation of the specific electricity use
- Basic knowledge on how to set up central ventilation units
- Basic knowledge of noise protection principles
- Acquaintance with entering a ventilation unit in the PHPP
- Understanding of flow rate adjustment in ventilation systems; significance of balancing settings; how to adjust / balance a ventilation system?

5. Principles of heating systems for Passive Houses

- Knowledge of the heating load criterion; what is the difference between “heating load” and “space heating demand”?
- Knowledge of the thermal comfort requirements [ISO 7730]
- What is the “operative temperature”?
- How significant are draughts?
- What is the maximum difference between the air temperature and average surface temperature in a Passive House? (ability to calculate a simplified example and make qualitative estimations)
- Why is thermal comfort in a Passive House largely independent of the means of heat/cold distribution?
- Knowledge of typical heating loads
- Knowledge of typical heat distribution systems suitable for Passive Houses
- Under what conditions are radiators required beneath windows?
- Ability to sketch a heat distribution system in the floor plan of a Passive House
- What factors need to be taken into account when considering air heater coils? (effective heating capacity based on the air flow rate; downstream duct insulation)
- Why can't the supply air flow rate be increased?
- How does the PHPP deal with heating loads [Bisanz 1999]?
- What factors need to be taken into consideration when designing the heat distribution system and the central heat generator? (the total heating load must be accounted for)
- How and to what extent can temperature differences be achieved within a Passive House?

- To what extent is the maximum heating load influenced by the following factors: large leakages, constantly tilted windows, temporary opening of windows, opening of the front door
- Knowledge of the limitations of supply air heat distribution systems (disconnected rooms, extract rooms); solutions for these cases
- Correct positioning of a thermostat within a dwelling unit

6. Summer comfort – basics

- Knowledge of thermal comfort standards [ISO 7730]
- Understanding of comfort factors during the summer period (qualitative understanding):
 - Air exchange – assessment methods; how can it be increased?
 - Solar load: significance, dependence on the building's orientation and the transparent surfaces, shading, temporary shading, effectiveness of internal and external blinds
 - Impact of interior heat sources; how can they be reduced?
 - Impact of exterior colours [Kah 2005]
 - Impact of thermal insulation [Kah 2005]
 - Impact of thermal masses inside the building [Feist 1999]; what happens in the case of strongly fluctuating internal loads [Kah 2006]?

7. Electrical energy

- Characteristics of electric energy (versatile and effective, high primary energy input associated with its generation)
- Why is energy efficiency especially important when it comes to electrical energy?
- Typical electrical consumption of a Passive House's building services (auxiliary electricity)
- Energy efficiency requirements for auxiliary power consumption
- Typical electrical appliances in homes
- Improving the energy efficiency of domestic appliances
- Typical electrical appliances in offices (interior lighting, IT)
- Improving energy efficiency in offices; why is this such an important issue?

8. Principles of energy balancing (PHPP)

- Principles of energy balancing: volumes and dimensions for energy balances, equations
- Energy losses: transmission, ventilation
- Energy gains: internal heat sources, passive solar gains, heating
- Calculation of transmission and ventilation losses; estimating their significance
- Calculation of a window's U-value according to PHPP; calculation of solar heat gains, especially taking into account shading.
- Significance of internal heat sources.
- Calculation of the heating load according to PHPP: why calculate the heating load based on two different design days? [Bisanz 1999]
- Determining the required capacity of a ventilation system according to PHPP
- Heat dissipation of hot water pipes and storage tanks
- Compact building services units in the PHPP
- How to deal with products that are not certified (guarantee of accuracy of specified values, plausibility check)

9. Basics of economic efficiency calculation

- Payback period, present value method, annuity method [Feist 2005][VDI 2067], application of the annuity method to simple examples
- Correct determination of excess investment
- Life cycle assessment
- Cost-effective insulation levels [Feist 2005]
- Advantages of calculating the price of each kilowatt hour saved (independently of energy prices)

10. Invitations to tender and allocation

- Detailed specification of all services and products (specific values!) and categorisation based on types of services / trades
- Allocation of responsibilities
- Clarification of trades interfaces, especially for complex interfaces; what factors need to be taken into account (e.g. order of execution taking into account all trades involved)?
- Liabilities e.g. concerning the implementation of an airtight construction involving several trades

11. Construction site management and quality assurance

- Which trade sectors are concerned?
- Initial instructions for craftsmen
- Special requirements concerning the work itinerary (e.g. application of interior plaster before installation of building services, application of screed after internal plaster)
- Materials and services to be inspected and quality assurance methods:
 - Airtightness of surfaces and connection details / intersections
 - Thermal bridge free design, avoiding penetrations that do not figure in the plans
 - Window installation; frame and glazing qualities
 - Thermal insulation, thermal conductivity of insulation materials, elimination of joints, application without air gaps.
 - Air ducts: no leakages, layout / dimensions in accordance with plans, insulation, prevention of condensation and protection against construction dirt, antistatic
 - Ventilation unit: installation according to plans, flow rate check / adjustment
 - Space heating system: installation according to plans, complete insulation of heated pipes (including fixtures, pumps, etc.), running times of pumps, test run
 - Hot water system: installation according to plans, complete insulation of heated pipes (including fixtures, pumps, etc.), running times of pumps, test run
- Required quality assurance procedures (pressure test [appropriate timing], specific dates for the quality assurance for the window installation, airtight layer, insulation, air ducts, inspection of the ventilation unit)
- Handing over the building at an appropriate interior temperature (warm in winter and cool in summer periods).

12. Information and support for occupants

- What kind of information do occupants of Passive Houses need?
- Opening windows: effect during winter and summer periods.
- Temporary shading: effect during winter and summer periods.
- Ventilation unit: it is not an air conditioning system; maintenance requirements: changing filters; permanent use or shutdown with dry filters.
- How to avoid dry air in winter.

- Who do I ask if I have any questions?

13. Refurbishments using Passive House components

- Certification criteria for refurbishments with Passive House components (EnerPHit) for cool temperate climates
 - Annual space heating demand: $q_{\max, \text{heat}} \leq 15 \text{ kWh}/(\text{m}^2\text{a})$
 - OR: Components according to the cost optimum (life cycle based), standard values
 - Airtightness: target value: $n_{50} \leq 0.6 \text{ h}^{-1}$ | required value: $n_{50} \leq 1.0 \text{ h}^{-1}$
- Advantages of using Passive House components [AkkP 24]
- Examples of completed Passive House renovation projects
- Typical thermal bridges and effective solutions
- Special challenges concerning interior insulation (humidity) [AkkP 32]

14. Calculation, quantities, units

- Acquaintance with the metric system and decimals
- Acquaintance with standard symbols, quantities and units, in particular the consistent use of units throughout the calculation process
- Ability to make a clear distinction between different physical quantities such as work and power, or temperature and heat, etc.

15. Non-residential buildings

- Characteristics of common non-residential Passive House buildings such as offices and schools (intermittent use, significant internal heat loads from appliances and due to high occupation rates)

16. Literature

[AkkP 5] Energy Balance and Temperature Characteristics; Protocol Volume No. 5 of the Working Group Cost-efficient Passive Houses, 1st Edition, Passive House Institute, Darmstadt 1997

[AkkP 9] Usage Patterns, Protocol Volume No. 9 of the Working Group Cost-efficient Passive Houses Phase II; 1st Edition, Passive House Institute, Darmstadt 1997.

[AkkP 14] Passive House Windows, Protocol Volume No. 14, 1st Edition, Passive House Institute, Darmstadt 1998

[AkkP 16] Thermal-bridge-free Designing; Protocol Volume No. 16 of the Working Group Cost-efficient Passive Houses, 1st Edition, Passive House Institute, Darmstadt 1999

[AkkP 20] Passive House Supply Engineering; Protocol Volume No. 20 of the Working Group Cost-efficient Passive Houses, 1st Edition, Passive House Institute, Darmstadt 2000

[AkkP 21] Architectural Examples: Residential Buildings, Protocol Volume No. 21 of the Working Group Cost-efficient Passive Houses Phase III; Passive House Institute, Darmstadt 2002.

[AkkP 23] Influence of the Ventilation Strategy on the Concentration and Spread of Harmful Substances in Rooms, Protocol Volume No. 23 of the Working Group Cost-efficient Passive Houses Phase III; Passive House Institute; Darmstadt 2003.

[AkkP 24] Application of Passive House Technologies in Renovation of Older Housing; Protocol Volume No. 24 of the Working Group Cost-efficient Passive Houses Phase III; Passive House Institute; Darmstadt 2003.

[AkkP 25] Temperature Differentiation in the Home, Protocol Volume No. 25 of the Working Group Cost-efficient Passive Houses Phase III; Passive House Institute; Darmstadt 2003.

[AkkP 27] Heat Losses through the Ground, Protocol Volume No. 27 of the Working Group Cost-efficient Passive Houses Phase III; Passive House Institute; Darmstadt 2004.

[AkkP 29] Superinsulated Roof Constructions, Working Group Cost-efficient Passive Houses Phase III, Protocol Volume No. 29. Passive House Institute, Darmstadt, 2005.

[AkkP 32] Passive House Components and Interior Insulation, Protocol Volume No. 32, Passive House Institute, Darmstadt

[Bisanz 1999]: Heat Load Dimensioning in the Low-energy House and Passive House, 1st Working Group Cost-efficient Passive Houses Edition, Darmstadt, January 1999

[DIN 1946] Ventilation

[EN 10077] Window-U-Value

[Feist 1999] Feist, Wolfgang (Publisher.): Passive House Summer Case; Protocol Volume No. 15 Working Group Cost-efficient Passive Houses; Passive House Institute, 1st Edition, Darmstadt 1999.

[Feist 2005] Feist, Wolfgang: Economic Efficiency of Thermal Insulation for Roofs; Protocol Volume No. 29 Working Group Cost-efficient Passive Houses; Passive House Institute, 1st Edition, Darmstadt 2005.

[ISO 7730] DIN EN ISO 7730: Moderate Ambient Temperature; Beuth Verlag, Berlin 1987.

[Kah/Fest 2005] Economic Efficiency of Thermal Insulation, Passive House Institute, published on the internet www.passiv.de

[Kah 2005] Kah, Oliver: The radiation balance of the roof surface and other influencing values of the roof construction on the summer and winter characteristics; in Protocol Volume No. 29 Working Group Cost-efficient Passive Houses; Passive House Institute, 1st Edition, Darmstadt 2005.

[Kah 2006] Kah, Oliver: Schools in the Passive House Standard: Planning Aspects, in Protocol Volume No. 33 Working Group Cost-efficient Passive Houses; Passive House Institute, 1st Edition, Darmstadt 2006

[Peper 1999] Peper, Sören: Airtight Project Planning of Passive Houses. Technical Information PHI-1999/6, CEPHEUS Project Information No. 7, Passive House Institute, Darmstadt 1999

[PHPP 2007] Feist, W.; Pfluger, R.; Kaufmann, B.; Schnieders, J.; Kah, O.: Passive House Project Planning Package 2007, Passive House Institute Darmstadt, 2007

[Kah 2010] Kah, Oliver: Energy efficiency guide for educational buildings (pdf 4,54 MB)
http://www.passiv.de/04_pub/Literatur/Leitfaden_Bildungsgebaeude/Leitfaden_Bildungsgebaeude_PHI.pdf

Published on behalf of the Ministry for the Environment, Energy, Agriculture and Consumer protection of the State of Hesse, Wiesbaden

[Bastian 2010] Bastian, Zeno: Handbook. Modernisation of old buildings using Passive House components (pdf 8,10 MB)
http://www.passiv.de/04_pub/Literatur/Altbauhandbuch/Altbauhandbuch_PHI.pdf

Published on behalf of the Ministry for the Environment, Energy, Agriculture and Consumer protection of the State of Hesse, Wiesbaden

[Kaufmann/Peper 2009] Dr. Kaufmann, Berthold/Peper, Sören: Renovation with Passive House components – [Tevesstraße Frankfurt a.M.](#)
[http://www.passiv.de/04 pub/Literatur/Tevestr/Tevestr F.htm](http://www.passiv.de/04_pub/Literatur/Tevestr/Tevestr_F.htm)

Published on behalf of the Ministry for the Environment, Energy, Agriculture and Consumer protection of the State of Hesse, Wiesbaden

www.passipedia.org – the Passive House resource

Attachment II

Application for the “Certified Passive House Designer/Consultant” Examination

Rheinstr. 44/46
D-64283
Darmstadt
mail@passiv.de



A1 – Personal details for the certification process:		Male. <input type="checkbox"/> Female <input type="checkbox"/>
Family name	<input type="radio"/> <input type="checkbox"/>	
Given name	<input type="radio"/> <input type="checkbox"/>	
Nationality	<input type="radio"/>	
Street, number (private)	<input type="radio"/>	
Postal code, city (private)	<input type="radio"/>	
Country	<input type="radio"/>	
Telephone number (private)	<input type="radio"/>	
Email address (private)	<input type="radio"/>	
Title	<input type="radio"/> <input type="checkbox"/>	
Profession	<input type="radio"/> <input type="checkbox"/>	

A2 – Details for publication on the website by the Passive House Institute and for the certificate:		
Company name	<input type="checkbox"/>	
Street, number	<input type="radio"/> <input type="checkbox"/>	
Postal code, city	<input type="radio"/> <input type="checkbox"/>	
Country	<input type="radio"/> <input type="checkbox"/>	
Telephone number		
Email, (direct contact only)	<input type="radio"/> <input type="checkbox"/>	
Website		
iPHA / iPHA Affiliate (as listed on www.passivehouse-international.org) member?	<input type="checkbox"/>	<input type="checkbox"/> Yes, iPHA only <input type="checkbox"/> No
		<input type="checkbox"/> Yes, through the following iPHA Affiliate: _____

A3 – I hereby apply for the “Certified Passive House Designer/Consultant” Certificate to be issued by the Passive House Institute and to be listed, for a period of five years, on the respective internet database.

- By signing this document, I acknowledge the Examination Regulations as of 01 July 2011.
- In particular, I acknowledge that the final marking of the written examination (carried out by the Passive House Institute) shall be final and binding.
- I affirm that the information provided above is correct.
- I have paid or intend to pay the examination fees as set out in the Examination Regulations.
- I affirm that the documents provided by me constitute my own intellectual property.

Place, date:	Signature:
--------------	------------

A4 – I hereby consent to the publication and distribution of my details as described below:

- The examination body shall forward the original version of this application as well as an electronic version of the data it contains to the Passive House Institute, where this data will be stored for internal use.
- The information marked with shall be published on the website intended for this purpose by the Passive House Institute.

Place, date:	Signature:
--------------	------------

B – To be completed by the examination body	
Recommendation Designer or Consultant	Place and date of examination:
Recommended profession on the website	Examination body:

C - To be completed by the Passive House Institute		
Designer or Consultant	Included on website	Certificate sent

Attachment IIa
Application for the “Certified Passive House Designer/Consultant” Certificate by presenting a Quality Approved Passive House construction project

Rheinstr. 44/46
 D-64283
 Darmstadt
 mail@passiv.de



A1 - Personal details for the certification process:		Male. <input type="checkbox"/> Female <input type="checkbox"/>
Family name	<input type="radio"/> <input type="checkbox"/>	
Given name	<input type="radio"/> <input type="checkbox"/>	
Nationality	<input type="radio"/>	
Street, number (private)	<input type="radio"/>	
Postal code, city (private)	<input type="radio"/>	
Country	<input type="radio"/>	
Telephone number (private)	<input type="radio"/>	
Email address (private)	<input type="radio"/>	
Title	<input type="radio"/> <input type="checkbox"/>	
Profession	<input type="radio"/> <input type="checkbox"/>	

A2 - Details for publication on the website by the Passive House Institute and for the certificate:		
Company name	<input type="checkbox"/>	
Street, number	<input type="radio"/> <input type="checkbox"/>	
Postal code, city	<input type="radio"/> <input type="checkbox"/>	
Country	<input type="radio"/> <input type="checkbox"/>	
Telephone number		
Email, (direct contact only)	<input type="radio"/> <input type="checkbox"/>	
Website		
iPHA / iPHA Affiliate (as listed on www.passivehouse-international.org) member?	<input type="checkbox"/>	<input type="checkbox"/> Yes, iPHA only <input type="checkbox"/> No <input type="checkbox"/> Yes, through the following iPHA Affiliate: _____

A3 – The following documents are enclosed (see Section 3.2 of the Examination Regulations):
<input type="checkbox"/> Project documentation for the following Passive House model project (file) <input type="checkbox"/> PHPP calculation for this project (Excel file) <input type="checkbox"/> A copy of the building certificate <input type="checkbox"/> The project ID number as indicated in the online Passive House database www.passivhausprojekte.de <input type="checkbox"/> Proof of qualification(s) (e.g. copy of university certificate etc.) <input type="checkbox"/> If applicable, written declaration to the effect that the Passive House relevant parts of the project have been planned responsibly by the applicant himself/herself

A4 – I hereby apply for the evaluation of the enclosed documents for the purpose of attaining the “Certified Passive House Designer/Consultant” Certificate to be issued by the Passive House Institute, and to be listed, for a period of five years, on the respective internet database.
<ul style="list-style-type: none"> • By signing this document, I acknowledge the Examination Regulations as of 01 July 2011. • In particular, I acknowledge that the results of the evaluation of my documents (carried out by the Passive House Institute) shall be final and binding. • I affirm that the information provided above is correct and that the enclosed documents constitute my own intellectual property . • I have paid or intend to pay the evaluation fees as set out in the Examination Regulations.
Place, date: _____ Signature: _____

A5 – I hereby consent to the publication of my details as described below:
<ul style="list-style-type: none"> • The information marked with <input type="checkbox"/> and the project documentation for the Passive House model project submitted will be published on the website intended for this purpose by the Passive House Institute. • The Passive House Institute reserves the right to publish the project documentation both online and in print.
Place, date: _____ Signature: _____

B - To be completed by the Passive House Institute		
Designer or Consultant	Included on website	Certificate sent

Attachment III

Requirements for Project Documentation



Rheinstr. 44
D-64283 Darmstadt
mail@passiv.de

1 General requirements

The following structural outline is suggested for the Passive House model projects in accordance with Section 3.1 of the Examination Regulations for the Certified Passive House Designer Certificate. The *data provided in the outline must be included in the document*; additional information may also be included as long as it is relevant for the Passive House. The sequence may be changed (except for the cover page). The number of pages should not exceed 12 pages (except for large projects).

The information provided in the documentation must be *based on the truth to the best of your knowledge*. The Passive House Institute (PHI) reserves the right to carry out any verification.

The documentation may not contain any advertisements and logos of companies or market participants. Documentation should not contain any links to internet websites besides the relevant designer's website.

The names of products and their manufacturers may be mentioned (once only) in the documentation.

The PHI may demand *changes to be made to the documentation* and may make the attainment of certification as a Passive House Designer / Consultant dependent on the implementation of these changes. This applies to the removal of advertisements and the correction of inaccurate information in particular.

The complete object documentation will be published as a PDF file on the website intended for this purpose by the PHI. In addition, the PHI reserves the right use the project documentation for further online or print publications thereby referencing the author's copyright.

2 Indispensable contents of object documentation

2.1 Cover page based on the given example.

2.2 Short description of the construction task

- 2.3 Pictures of elevations from all accessible sides (at least 300 dpi, 7cm x 10cm)
- 2.4 Sample picture of the interior
- 2.5 Cross section of the implementation plan
- 2.6 Floor plans (for large objects: typical floor layouts are sufficient)
- 2.7 Construction details of the Passive House envelope and building services
 - 2.7.1 Construction including insulation of the floor slab or basement ceiling with exterior and interior wall connections
 - 2.7.2 Construction including insulation of the exterior walls with connections to other walls
 - 2.7.3 Construction including insulation of the roof or the attic floor with exterior and interior wall connections
 - 2.7.4 Cross sections of windows including installation sketch (to a recognisable scale) type of window / specific values
 - 2.7.5 Description of the airtight envelope; documentation of the pressure test
 - 2.7.6 Ventilation plan for the ductwork (example)
 - 2.7.7 Ventilation plan for the central unit / type / specific values
 - 2.7.8 Heat supply (example)

For each of these points (2.1 to 2.7.8), please provide at least one drawing or photo and a detailed description.

- 2.8 Brief report on important PHPP results (at least the information contained in the "Verification" sheet)
- 2.9 Construction costs: €/m² living space/usable area (construction and building services)
- 2.10 Costs for the building

- 2.11 Year of construction
- 2.12 Information on the architectural design
- 2.13 Information on the building services planning
- 2.14 Information on the structural physics planning, if applicable
- 2.15 Information on the structural analysis planning, if applicable
- 2.16 Experiences (user opinion, actual consumption values)
- 2.17 Reference to existing studies/publications on this project

3 Sample documentation – cover page

Passive House Object Documentation

Terraced house with four accommodation units in Darmstadt–Kranichstein



Project Designer Prof. Dr. Helmut Bott / <http://www.uni-stuttgart.de/si/stb/>
Ridder / Westermeyer

This terraced house was built for four private clients at the K7 building site specified by the City of Darmstadt. The building is a solid construction with a basement and is oriented exactly towards the south. It has large apartments extending over three floors. The same families have occupied the house since 1991.

Special features: Solar collectors for hot water, heat recovery from grey water, use of rainwater

U-value exterior wall	0.138W/(m ² K)	PHPP Annual heating demand	14 kWh/(m ² a)
U-value basement ceiling	0.131W/(m ² K)		
U-value roof	0.108W/(m ² K)	PHPP primary energy demand	65kWh/(m ² a)
U-value window	0.78 W/(m ² K)	Pressure test n ₅₀	0.2h ⁻¹
Heat recovery	80%		

CERTIFICATE PASSIVE HOUSE DESIGNER

Valid until 1 January 2017

Passive House
Institute
Dr. Wolfgang Feist
Rheinstraße 44/46
D-64283 Darmstadt
www.passiv.de



Name: **Paula Passive**
Street: **Passive Road 123**
City: **12345 Passive Town**
Passive Land
E-Mail: **ppassive@paulapassive.net**

The qualification was obtained by means of:

- Examination** In accordance with the Examination Regulations as of 1 July 2011. Examination passed on 01 January 2012 in Passive Town hosted by Passive Education Ltd.
- Certified project** In accordance with the Examination Regulations as of 1 July 2011. The building certification and all documentation have been audited. The documentation can be viewed on the internet at www.passivhausplaner.eu.



The owner of this certificate is entitled to use the adjoining logo in connection with her planning activities.

She is listed as a certified Passive House Designer.

Darmstadt, 29.03.2012

Prof. Dr. Wolfgang Feist

This certificate does not substitute any authorisation required for construction.

Attachment V

Application for renewal of the “Certified Passive House Designer/Consultant” Certificate

Rheinstr. 44/46
D-64283
Darmstadt
mail@passiv.de



A1 - Personal details for processing the application:		Male. <input type="checkbox"/> Female <input type="checkbox"/>
Family name	<input type="radio"/> <input type="checkbox"/>	
Given name	<input type="radio"/> <input type="checkbox"/>	
Nationality	<input type="radio"/>	
Street, number (private)	<input type="radio"/>	
Postal code, city (private)	<input type="radio"/>	
Country	<input type="radio"/>	
Telephone number (private)	<input type="radio"/>	
Email address (private)	<input type="radio"/>	
Title	<input type="radio"/> <input type="checkbox"/>	
Profession	<input type="radio"/> <input type="checkbox"/>	

A2 - Details for publication on the website by the Passive House Institute and for the certificate:	
Company name	<input type="checkbox"/>
Street, number	<input type="radio"/> <input type="checkbox"/>
Postal code, city	<input type="radio"/> <input type="checkbox"/>
Country	<input type="radio"/> <input type="checkbox"/>
Telephone number	
Email, (direct contact only)	<input type="radio"/> <input type="checkbox"/>
Website	
iPHA / iPHA Affiliate (as listed on www.passivehouse-international.org) member?	<input type="checkbox"/> Yes, iPHA only <input type="checkbox"/> Yes, through the following iPHA Affiliate: _____ <input type="checkbox"/> No

A3 - The following documents are enclosed (see Section 3.2 of the Examination Regulations):	
<input type="checkbox"/>	Project documentation for the following Passive House model project (file)
<input type="checkbox"/>	PHPP calculation for this project (Excel file)
<input type="checkbox"/>	A copy of the building certificate
<input type="checkbox"/>	The project ID number as indicated in the online Passive House database www.passivhausprojekte.de
<input type="checkbox"/>	In case of changes Proof of qualification(s) (e.g. copy of university certificate etc.)
<input type="checkbox"/>	If applicable, written declaration to the effect that the Passive House relevant parts of the project have been planned responsibly by the applicant himself/herself

A4 - I hereby apply for the renewal of the existing “Certified Passive House Designer/Consultant” Certificate issued by the Passive House Institute, and to be listed, for a period of five years, on the respective internet database.	
<ul style="list-style-type: none"> • By signing, I acknowledge the Examination Regulations dated 01.07.2011 • In particular, I acknowledge that the results of the evaluation of my documents (carried out by the Passive House Institute) shall be final and binding. • I affirm that the information provided above is correct. • I have paid or intend to pay the evaluation fees as set out in the Examination Regulations. • I affirm that the enclosed documents constitute my own intellectual property. 	
Place, date:	Signature:

A5 – I hereby consent to the publication of my details as described below:	
<ul style="list-style-type: none"> • The information marked with <input type="checkbox"/> and the project documentation for the Passive House model project submitted will be published on the website intended for this purpose by the Passive House Institute. • The Passive House Institute reserves the right to publish the project documentation both online and in print. 	
Place, date:	Signature:

B - To be completed by the Passive House Institute		
Designer or Consultant	Included on website	Certificate sent

Attachment VI



Rheinstr. 44
D-64283 Darmstadt
www.passiv.de

Fee Schedule for “Certified Passive House Designer/Consultant” Certificate

Valid as of 01 July 2011

All prices are without VAT. Fees for the examination and review must be paid in advance of inclusion in the list and before the certificate can be issued to the applicant for use in public.

Examination fee for the written examination in accordance with Section 2 of the Examination Regulations	Not specified by the PHI. The fees are fixed by the examining institution, which must finance the services provided by the PHI relating to each examination and the relevant certification procedures. Payment of fees should be made to the examining institution.
Fee for review of the qualification attained initially by means of a Passive House model project for five years in accordance with Section 3 of the Examination Regulations	IG-Passivhaus members 300 € Non-members 450 € Payable to the PHI in advance
Fee for renewal of the certificate attained by means of a Passive house Model project for a further five years in accordance with Section 5 of the Examination Regulations	IG-Passivhaus members 150 € Non-members 300 € Payable to the PHI in advance