Are you ready to design buildings that perfom as intended in design?

CERTIFIED PASSIVHAUS DESIGNER

Online Course

AUSTRALIAN PASSIVHAUS ASSOCIATION

> The Certified Passivhaus Designer Course was the most important course of my working life; since being qualified our business has been able to establish itself within a sector of the construction industry that strives for excellence in performance and is at the bow wave of a new building movement.
>
> *Scott Stewart*

ABOUT US

The Australian Passivhaus Association (APA) is an independent, not-for-profit organisation which aims to lead change by educating, promoting, and supporting the delivery of Certified Passivhaus buildings in Australia.
Our vision is that all Australians live and work in healthy, comfortable, low-energy, resilient buildings.

OUR VISION

All Australians live and work in healthy, comfortable, low-energy, resilient buildings.

OUR MISSION

Lead change by educating, promoting, and supporting the delivery of Certified Passivhaus buildings in Australia.

Passivhaus is rapidly gaining momentum in Australia and APA aims to make Passivhaus the benchmark for comfort in all our buildings. Our courses are designed to specifically focus on helping professionals, trades and individuals understand more about Passivhaus.

APA has a variety of committed industry Passivhaus experts willing to train you for our certified courses, masterclasses, webinars and more.

We currently offer three courses:

Certified Passivhaus Designer/Consultant Course

In this course, you will learn to design energy-efficient and cost-optimal buildings by implementing the Passivhaus principles in your projects as well as write the Certified Passivhaus Designer/Consultant exam.

Certified Passivhaus Tradesperson Course

In this course, you will gain the foundation Passivhaus Tradesperson knowledge necessary to prepare you to tackle your first Passivhaus project, as well as write the Certified Passivhaus Tradesperson exam. A PHI Certified Passivhaus Tradesperson (CPHT) is equipped to implement the Passivhaus building standard.

Practical Selling for Passivhaus and Sustainable Building Professionals

In this course you will learn a simple, practical, non-salesy approach to selling so that you can win more clients and projects. You will learn how you can use energy efficiency and sustainability as a competitive advantage without having to constantly compete on price whilst allowing you to deliver the quality product you want for your clients without having to cut corners.

For any education related enquiries please contact samantha@passivehouseaustralia.org

COURSE OVERVIEW

Discover how to make buildings perform better than traditional construction. Develop your knowledge, and skills, related to identifying Passivhaus construction best practices.

Demand for better quality, resilient, and healthy buildings has dramatically increased in Australia, with consumers and building owners alike wanting the benefits of more sustainable structures that are energy efficient, reduced emissions, comfortable, quiet, and affordable. This course is offered in a blended format of live streamed presentations and self-paced e-learning, allowing students to manage their learning time more effectively and not be bound by strict attendance schedules.

Topics 1-8 are held as live classes, participants are expected to attend but are recorded if you cannot. The PHPP Software Course, is self paced, online with 3 months access.
In the online course, participants will learn how to use the PHPP for residential building design and certification.

DELIVERY MODE: Online Self-paced

NUMBER OF UNITS: 8

Who is this training for?

The Designer course is for those wishing to model, design, and dive into the calculation of Passive projects. It involves theory and calculations and applying all things architecture.

Intended Audience: Architects, developers, self-builders and other building professionals.

Why should they do it?

This course is designed to prepare you for writing the Certified Passivhaus Designer/Consultant (CPHD/C) exam.

> The course has been designed to offer insights not covered by the Passivhaus Design and Construction and PHPP course, including calculations and example exam questions.
> Traditional construction has been proven ineffective and is outdated with building codes being increased across the Nation
> The passivhaus standard has grown astronomically across the Nation and the Globe
> Consumer education in high performance buildings is the highest it has been, with more demand to built passivhaus buildings than the market can deliver
> Future proof your business and career by being ahead of the competition
> Limit liability & increase credibility
> Learn best practices & building science

course curriculum

LEARNING OUTCOME

UNIT 1: Building Envelope	Understanding of the principle of thermal envelopes, including a good perception of the heat insulation qualities required for a Passivhaus 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.
UNIT 2: Airtightness	Learn all facets of airtightness in passivhaus such as > Suitable lightweight and solid structures in terms of airtightness such as: > Suitable airtight joints for lightweight, solid and mixed constructions; > Air sealing solutions in case of leakages at intersections; > Potential weak spots; > The significance of the planning task "airtightness"; > Test procedures (airtightness test) and requirements; > Basic leakages (e.g. holes from nails, power sockets, window connection joints, unrendered exterior wall surfaces, loose foil, unsealed openings, unsealed downpipes); > Permanent solutions for fixing simple leakages; > How to assess difficult leakages (e.g timber floor); and, > How problematic leakages can be avoided
UNIT 3: Thermal Bridging	Gain an understanding of the principle of thermal envelopes, including a good perception of the heat insulation qualities required for a Passivhaus 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 > Understand the link between U-values and internal surface temperatures > Gain familiarity with typical U-values of opaque building structures for passivhaus in cool temperate climates > Learn about the typical lightweight and solid structures suitable for passivhaus houses in cool temperate climates > Be aquatinted with thermal bridge coefficients (exterior and interior dimensions) and qualitative analyses of building envelopes in terms of potential thermal bridges > Understand the principle of thermal bridge free construction > Quantitative evaluation of basic thermal bridges > Gain knowledge of suitable insulating materials and their main characteristics

course curriculum

TOPIC	LEARNING OUTCOME
UNIT 4: Windows	> Acquaintance with Ug, Uf, and Ψg values and the installation-based thermal bridge coefficient (Ψmount) > Difference between "Certified Passivhaus 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 Passivhaus 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 such as 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 such as warm-edge, deep glazing rebate > What properties are required for a Passivhaus window > Acquaintance with the PHPP window sheet
Unit 5: Ventilation	> Knowledge of the most important air contaminants in buildings > Knowledge of the CO2 criterion > Determination of fresh air flow rates for adequate ventilation > 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 > Understanding of driving forces of natural (non-mechanical) ventilation > 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 > Why is non-mechanical ventilation not suitable for Passivhauss located in regions with a considerable amount of heating degree days
UNIT 6: Heating, DHW & Cooling	Knowledge of the g-value definition according to EN 410, g-values expressed to two significant figures > Knowledge of typical values for different types of glazing > What other factors reduce the solar energy gain such as angle of incidence, dirt, frame ratio, shading, reflection > Knowledge of the energy criterion for glazing (Ug - 1.6 W/(m2K) ·g ≤ 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 > 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] > Knowledge of typical heating loads > Knowledge of typical heat distribution systems suitable for Passivhauss > Ability to sketch a heat distribution system in the floor plan of a Passivhaus > How does the PHPP deal with heating loads > What factors need to be taken into consideration when designing the heat distribution system and the central heat generator and how the total heating load must be accounted for > How and to what extent can temperature differences be achieved within a Passivhaus > Knowledge of the limitations of supply air heat distribution systems (disconnected rooms, extract rooms); solutions for these cases

course curriculum

TOPIC	LEARNING OUTCOME
UNIT 7: Construction Systems and Quality Assurance	> Initial instructions for craftsmen > 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 o 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 such as warm in winter and cool in summer periods
UNIT 8: Basics of economic efficiency calculation	Payback period, present value method, annuity method application of the annuity method to simple examples > Correct determination of excess investment > Life cycle assessment > Cost-effective insulation levels > Advantages of calculating the price of each kilowatt hour saved independently of energy prices
UNIT 9: Exam preparation	Familiarity with the metric system and decimal units. > Acquaintance with standard symbols, quantities and units, in particular the consistent use of units throughout the calculation process for the purpose of self-monitoring > Making a clear distinction between different physical quantities such as work and power, or temperature and heat etc
UNIT 10: Exam	The exam is based on the following **learning targets** and includes multiple choice questions, construction details drawings, calculations, as well as a Passivhaus design exercise
UNIT 11: Online PHPP Software Course (Self Paced)	> Learn the structure, inputs, and outputs of PHPP software > Select and input appropriate climate data sets in PHPP > Measure and record building characteristics (areas, volumes, etc) > Specify building assemblies and components > Model HVAC systems > Assess building heat loss, energy demand and summertime overheating risk > Understand proper sourcing of performance data > Gain practical experience in completing a PHPP assessment for a residential development

course dates

COURSE 1 DATES 2023

Live Sessions 9am-1pm	Monday	Friday
Live Zoom Sessions	6th March	10th March
Live Zoom Sessions	13th March	17th March
Live Zoom Sessions	20th March	24th March
Live Zoom Sessions	27th March	31st March
Exam Prep 9am-1pm	Monday 17th April	Friday 21st April
Trial Exam	Wednesday 10th May	
Exam	Wednesday 17th May	

COURSE 2 DATES 2023

Live Sessions 11-3pm	Tuesday	Thursday
Live Zoom Sessions	16th May	18th May
Live Zoom Sessions	23rd May	25th May
Live Zoom Sessions	30th May	1st June
Live Zoom Sessions	6th June	8th June
Exam Prep 11-3pm	Tuesday 20th June	Thursday 22nd June
Trial Exam	Wednesday 12th July	
Exam	Wednesday 19th July	

COURSE 3 DATES 2023

Live Sessions 11-3pm	Tuesday	Thursday
Live Zoom Sessions	11th July	13th July
Live Zoom Sessions	18th July	20th July
Live Zoom Sessions	25th July	27th July
Live Zoom Sessions	1st August	3rd August
Exam Prep 11-3pm	Tuesday 15th August	Thursday 17th August
Trial Exam	Wednesday 6th September	
Exam	Wednesday 13th September	

COURSE 4 DATES 2023

Live Sessions 11-3pm	Tuesday	Thursday
Live Zoom Sessions	5th September	7th September
Live Zoom Sessions	12th September	14th September
Live Zoom Sessions	19th September	21st September
Live Zoom Sessions	26th September	28th September
Exam Prep 11-3pm	Tuesday 10th October	Thursday 12th October
Trial Exam	Thursday 26th October	
Exam	Thursday 2nd November	

COURSE 5 DATES 2023/24

Live Sessions 11-3pm	Tuesday	Thursday
Live Zoom Sessions	21st November	23rd November
Live Zoom Sessions	28th November	30th November
Live Zoom Sessions	5th December	7th December
Live Zoom Sessions	12th December	14th December
Exam Prep 11-3pm	Tuesday 16th January	Thursday 18th January
Trial Exam	Tuesday 1st February	
Exam	Tuesday 8th February	

WHO RELIES ON OUR TRAINING

testimonials

“I enjoyed the way the course was presented and how the content was taught. The presenters did a great job engaging us with the material and preparing us for the exam.” -

Sarah Fiess, Architect/Team Leader at Sustainability Victoria

“I would highly recommend this course to anyone who wants to upskill and understand Passivhaus design principles. At the beginning, I was hesitant with online classes, but the instructors prove me wrong. They are professional and deliver a clear online presentation. This course also gives me valuable insights into Passivhaus design process, thanks to the expertise and experience of the instructors.”

Han Chua, Architectural Design Lead at ClarkeHopkinsClarke Architects

COURSE DIRECTORS

WALTER VAN DE LINDE

Walter is a Chartered Professional Mechanical Engineer, Registered Building Practitioner, and a Certified Passivhaus Consultant. He has experience in the design of high-performing HVAC systems and understands the important role they play in providing high indoor air quality and operating at energy-efficient levels to reduce energy consumption. Walter has designed all-electric net zero carbon buildings and is familiar with the key design requirements to successfully achieve energy targets and switch to all-electric buildings.

KYLIE MILLS

Kylie is passionate about advocating for sustainability, designing buildings and educating others, she is a registered architect, director of BluKube Architecture and certified passive house designer. In 2022, Kylie achieved a ‘Smart Building Ideas – Innovation Award’ by Architecture & Designs Sustainability Awards for a Certified Classic Passive House she designed in the Northern Rivers of NSW. In addition, she tutors at Sydney University, by sharing knowledge, she believes it is one of the ways in which using building science will make a positive difference in the built environment through younger generations of architects. Free time is enjoyed with her family and two young energetic mini foxies Theodore & Gustav.

MARCUS STRANG

Marcus Strang is a specialist sustainability engineer and experienced Certified Passivhaus Designer, having had the opportunity to work on many Certified Passivhaus buildings in Australia. His expertise is in refining building energy performance, analysing thermal envelope junctions and fenestration details, as well as identifying interstitial and surface moisture risks using hygrothermal modelling tools. Marcus's interests encompass holistic systems design, building physics, passive design optimisation and natural building materials. Currently, also a PhD Candidate specialising in the Passivhaus Standard and mass timber design, which he sees as a fundamental step for striving towards net-zero carbon emission buildings and a thriving, vibrant society.

PRICING

MEMBER FEE	
Designer Course including PHPP E-Learning Module & PHPP Software	**$3325**
Exam Preparation	**$380**
Exam	**$712.50**
NON-MEMBER FEE	
Designer Course including PHPP e-learning module	**$3500**
Exam Preparation	**$400**
Exam	**$750**

CLICK HERE TO BOOK

AUSTRALIAN PASSIVHAUS ASSOCIATION

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