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The Benefits of Passive House (PH) – Questionnaire Session

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Introduction

TODAY'S OUTCOME

1. DISCOVER 2 PH CONSULTANCY CASE STUDIES
2. UNDERSTAND THE VALUE OF PH CONSULTANCY FOR:
    1. A HOMEOWNER
    2. AN ARCHITECT
3. LEARN MORE ABOUT PH THROUGH Q&A

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Consultancy Case Studies

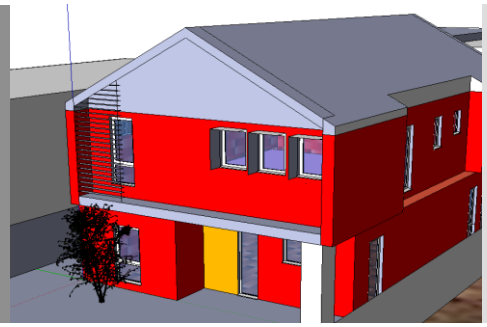
Idealings' latest consultancy projects were delivered for residential and educational buildings, targeting Passive House standard as a reference. A preliminary PHPP assessment has been developed for all providing improvement options based on client's specific needs and budget.

Consultancy Case Study A

- Client: Homeowner

MT HAWTHORN RESIDENCE

Location – Perth WA
Sector – Residential
Consultancy – Idealings



Energy efficiency improvement of existing design.
Most cost-effective options were proposed:

- Improved insulation,
- Reduced and better performing glazing,
- Additional shading
- Material choice

Schematic Design

Concept Design

(End) Design Development

- PHPP Preliminary
- PHPP Improvement

Design Application

Contract Documentation

- PH Detail Documentation

Tender Process

- PH Advisory

Construction Phase

- On-site PH Advisory
- Airtightness Testing
- HRV Commissioning

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Consultancy Case Study A

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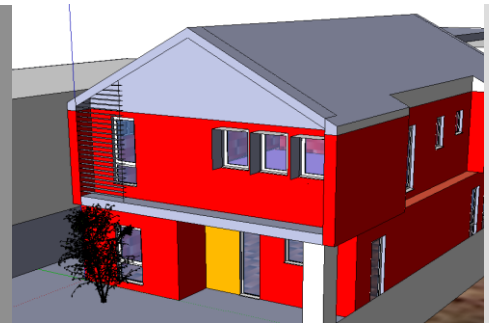

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- Additional shading
- Material choice

	Passive House criteria	Existing Design	Improvement
	Heating demand ≤ 15 kWh/(m2a)	32 kWh/(m2a)	13 kWh/(m2a)
	Cooling demand ≤ 15 kWh/(m2a)	35 kWh/(m2a)	2 kWh/(m2a)
	Frequency of overheating ≤ 10%	30 %	8 %
	Airtightness (at 50 pa) ≤ 0.6 ACH	10 ACH*	0.6 ACH#

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* Based on minimum NCC 2019 requirements # Criteria at planning stage

Consultancy Case Study B

- Client: Architect

SCHOOL ADMIN

Location – Perth WA
Sector – Educational
Consultancy – Idealings

Existing design designed as close to Passive House recommendations as possible.
Initial design developed along with the architect.
Compact design.
Design improved further to reach 1% overheating, as requested by client.

Schematic Design
- PH Advisory

Concept Design
- PHPP Preliminary

Design Development
- PHPP Improvement

Design Application

Contract Documentation

Tender Process

Construction Phase

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Imagery source: Buildinglines

Consultancy Case Study B

- Client: Architect

SCHOOL ADMIN

Location – Perth WA
Sector – Educational
Consultancy – Idealings

Existing design designed as close to Passive House recommendations as possible.
Initial design developed along with the architect.
Compact design.
Design improved further to reach 1% overheating, as requested by client.

	Passive House criteria	Existing Design	Improvement
	Heating demand ≤ 15 kWh/(m2a)	21 kWh/(m2a)	17 kWh/(m2a)
	Cooling demand ≤ 15 kWh/(m2a)	5 kWh/(m2a)	1 kWh/(m2a)
	Frequency of overheating ≤ 10%	12 %	1 %
	Airtightness (at 50 pa) ≤ 0.6 ACH	10 ACH*	0.6 ACH#

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* Based on minimum NCC 2019 requirements # Criteria at planning stage Imagery source: Buildinglines

Question & Answer

"Hi All - Greetings from an old federation home in Mornington. This house is light and airy and breathes. It does well in the heat of summer and only needs minimal winter heating provided we as occupants are prepared to accept temperature variations. I contend that Australia's Section J addresses energy efficiency from the wrong standpoint. **The lack of ventilation and limits of glazing will lead to condensation and mould growth. I believe there will be a lot of 'sick' housing in the near future.** Comments?"

Question & Answer

"Maybe not too relevant to **sub tropical climates** like Brisbane and north where it doesn't get too hot and too cold for most of the year. Cost to benefit may not warrant the pay back in saved energy?"

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Question & Answer

"So the idea is there is a light bulb 50W running 24/7 for **heat exchanger**. Is that correct? Can you turn it off if you choose to open windows ?"

Question & Answer

"Our electrician (25 experience) was surprised that we wanted **airtight switches/power points**. He suggested applying silicon to the power point box from the inside once the cabling is in place. Is this best practice?"

Question & Answer

"Which wall system offers the best performance in terms of airtightness? **Reverse Brick Veneer** (current used in our build) or **Insulated Double Bricks**?"

Thank you!

Further Questions?

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