

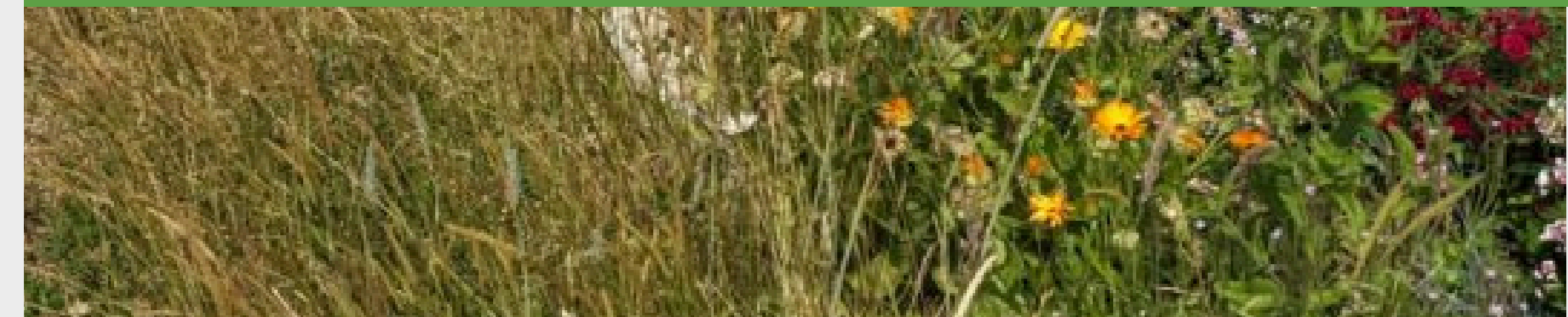


# STANDARDS & CERTIFICATION

## INTRODUCTION



2026



# WHAT IS CARBONLITE?

Since 2007 AECB CarbonLite guidance has been revolutionising the way buildings are designed and constructed, putting energy efficiency and environmental responsibility at the forefront. Certification has been offered since 2016, and since 2025 this is through trained certifiers.

**Energy efficient** - Fabric First means not only energy efficiency but a consistent indoor climate all year round

**Comfortable and healthy** - Thermal comfort, dramatic reduction of draughts and thermal bridging combined with excellent indoor air quality from superior ventilation systems

**Low carbon** - Heat pumps make so much more sense when your house is insulated and we set criteria to ensure the heat pump performs near its upper limit of efficiency

**Quality Assured** - Our robust standards are rooted in Passivhaus principles and all our certifiers are trained

## **Sustainable Living Made Simple**

Our approach makes it easy for builders, architects, and homeowners to produce buildings that perform.

## **Community of Innovators**

Join a network of professionals and enthusiasts dedicated to creating a greener world, sharing knowledge, and inspiring change.

## **Comprehensive Training Programmes**

Dive deep into our CarbonLite courses, designed to empower you with the skills to design and build low energy buildings.

# WHY CARBONLITE?

- Energy efficient
- Comfortable and healthy
- Low carbon
- Quality assured

**Dramatic Energy Savings:** Lower your energy bills significantly and reduce your carbon footprint at the same time.

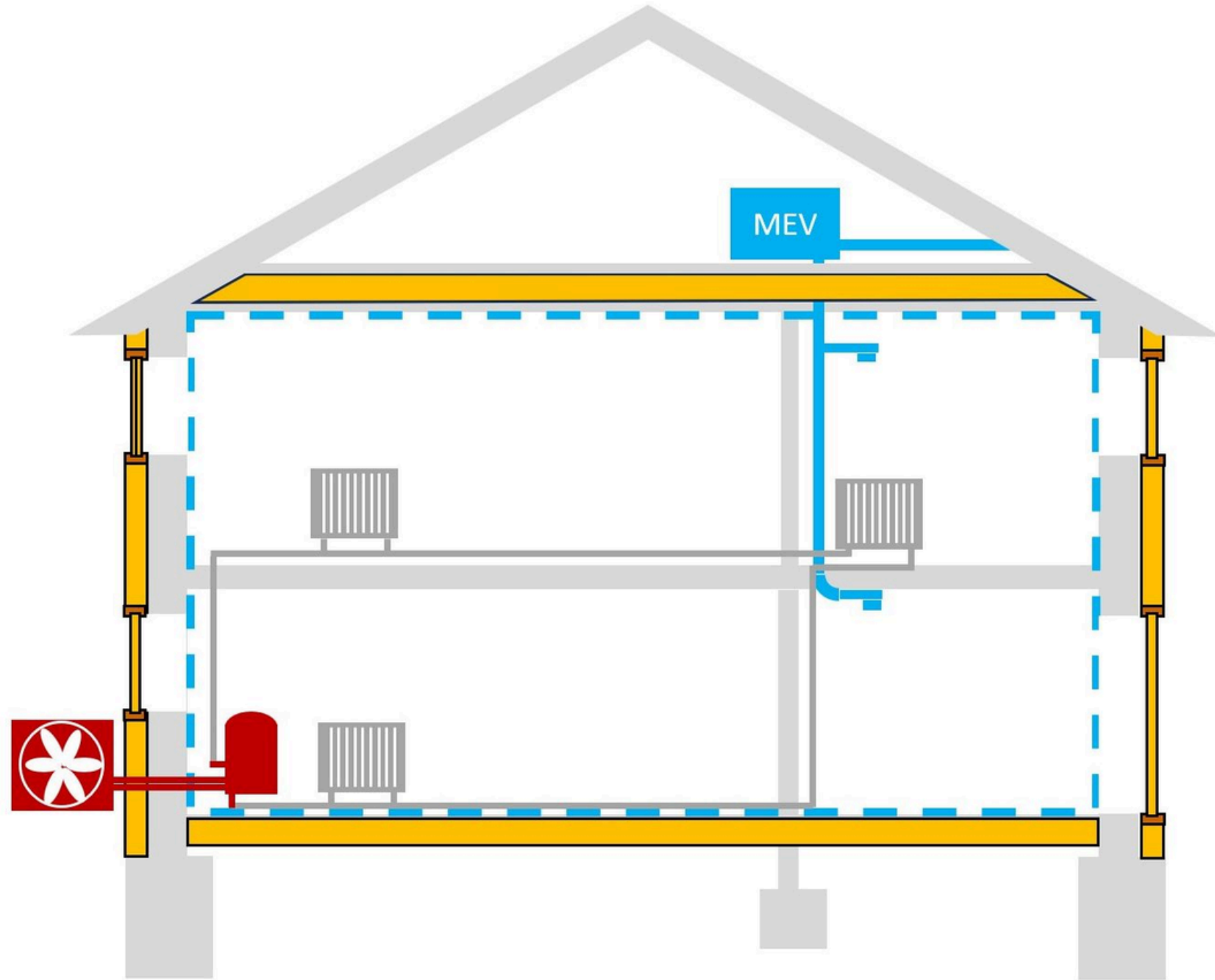
**Enhanced Comfort:** Enjoy a consistent indoor climate with excellent air quality year-round, thanks to superior insulation and ventilation systems.

**Future-Proof Investments:** Increase the value and longevity of your property by incorporating cutting-edge sustainability practices.



# WHY CARBONLITE?

## CarbonLite Standards use a whole house approach



## Typical Measures

- Insulation in walls
- Triple glazed windows, doors
- Insulation in roof
- Insulation in floor

Airtightness and Ventilation

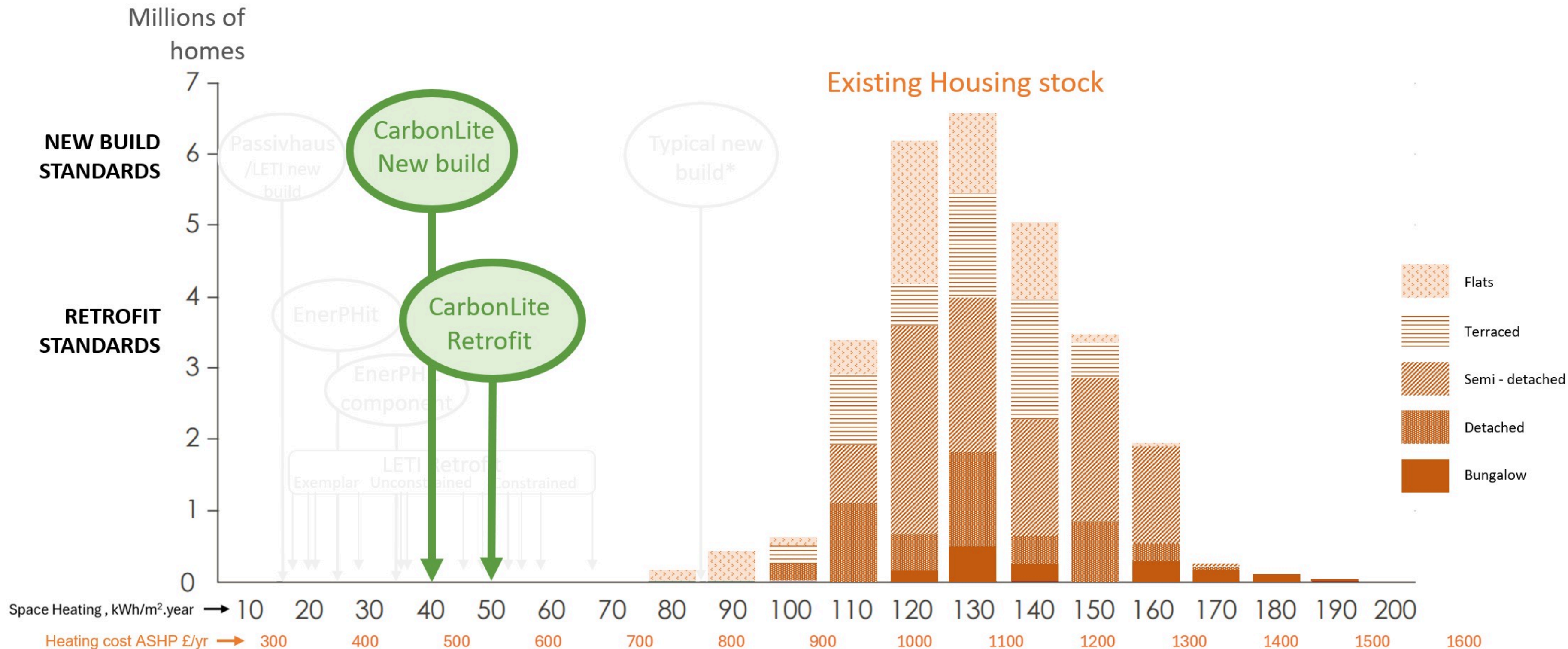
Air Source Heat Pump

(There is no PV)



# WHY CARBONLITE?

## Comparing Standards



# AECB CARBONLITE CERTIFICATION

## CarbonLite Certification

This spreadsheet is used for the certification process of AECB Carbonlite Standards for new build and retrofit buildings. Each sheet has a section at the top explaining what needs to be done.



Criteria	Retrofit Step-by-step	Retrofit Component Method	Retrofit and Step-by-step Full Retrofit Scenario	New Build
<b>Building Design and PHPP model</b>				
PHPPs required	1. PHPP of Step 1 with temperature from periodic heating plugin 2. PHPP of Full Retrofit at 20C	PHPP still required Internal wall Insulation < 0.4 W/m²K All other insulation as EnerPHit Windows & Doors < 1.2 W/m²K U <sub>w+installed</sub> MVHR min efficiency (if installed) as EnerPHit	PHPP meeting standard at 20C	PHPP meeting standard at 20C
Delivered space heating (kWh/m²/a)	report result		≤ 50 kWh/m².yr or ≤ 100 kWh/m².yr with approved exemption	≤ 40 kWh/m².yr
Delivered space cooling (kWh/m²/a)	report result		≤ 15 kWh/m².yr	≤ 15 kWh/m².yr
<b>EITHER</b> Primary Energy (PE) <b>OR</b> Primary Energy Renewable (PER)	report result	report result		≤ the limit in PHPP for Low Energy Buildings (e.g. PE ≤ 85, PER ≤ 75 kWh/m².yr)
Air Permeability	air permeability test ≤ 5.0 m³/m².h ave of pressurisation + depressurisation TM23 AP50	air permeability test ≤ 2.0 m³/m².h ave of pressurisation + depressurisation TM23 AP50		air permeability test ≤ 1.5 m³/m².h ave of pressurisation + depressurisation TM23 AP50
Ventilation System	Continuous or Demand Controlled MEV, or MVHR or Distributed MVHR			
Heating and Hot Water	Heat pump (ASHP or GSHP) <sup>1</sup>	Existing heating systems may be retained, but a practical plan to allow for future low carbon heating supply must be in place. <sup>1,2</sup>		non fossil fuel system or low carbon district heating network <sup>1,2</sup>
Thermal Bridges and Surface Condensation (fRsi) risk	N/A. If additional & significant fabric measures are being replaced or installed estimate a TB within 0-15% of fabric losses	EITHER calculate all TBs, OR use 15% of fabric losses calc by spreadsheet, ensure fRsi ≥ the relevant limit (0.75 for dwellings) <sup>3</sup>		EITHER design out to < 0.01 W/mK OR or calculate and ensure fRsi ≥ 0.75 <sup>3</sup>
Thermal Comfort	PHPP modelled overheating risk, < 10% Acceptable (Guidance: < 5% Good practice or < 3% Best practice)			
<b>Other Requirements</b>				
Risk Assessment	complete main checklist and surveys and conservation areas/listed status	Condition Survey & Retrofit Risk Report		Complete main checklist
QA process	5 photos, 6 documents	27 photos, 21 documents		27 photos, 21 documents

### Further data for all

Gross Internal Surface Area, for air permeability calculation  
Gross Internal Area if Energy Use Intensity (EUI) is required on the certificate  
Name of energy modeller, main contractor and architect (if any) for the certificate  
Purchase a certificate from the AECB shop  
Project has to be uploaded to the LEBD (payment will eventually be through here)

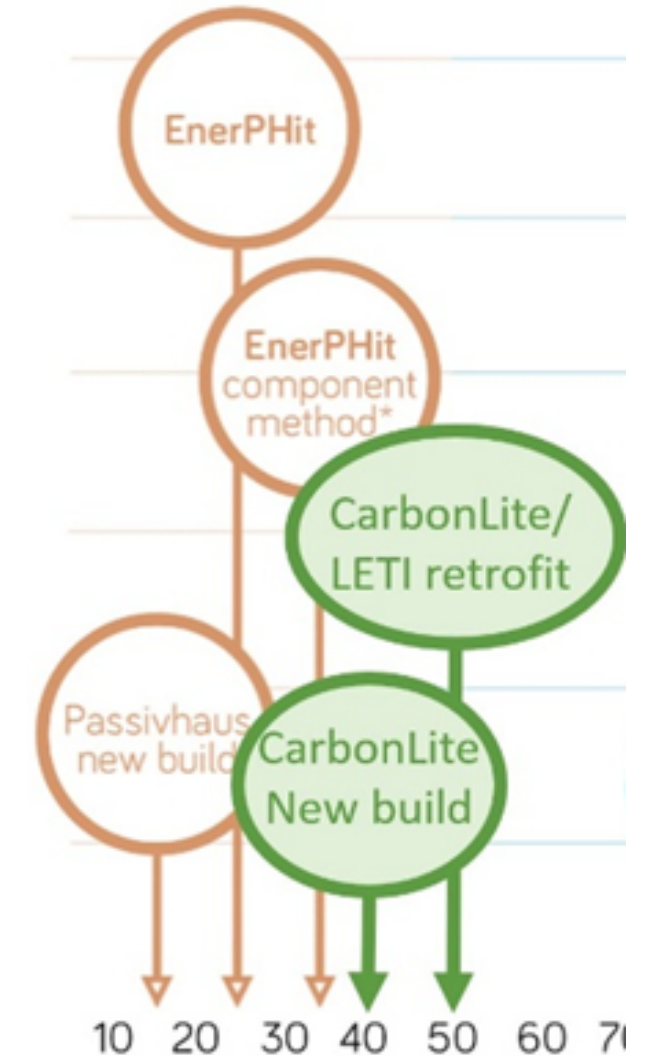
### Info not required

Fuel costs are not required, Step 1 does not have to match the running cost of the existing, though this is recommended.

<sup>1</sup> **All standards, where a heat pump is installed.** Certifiers must liaise with the building owner and the MCS heating system designer in order to ensure that the maximum flow temperature for **space heating** is no greater than 50°C. Best Practice heating system is designed and installed for flow temp < 45°C. That still allows hot water to be stored at a higher temperature if weekly legionella cycles are not considered sufficient.

<sup>2</sup> **Direct Electric** This can only be considered for flats. It would have to be CarbonLite Retrofit or New Build and would require special approval.

<sup>3</sup> **fRsi** limit of 0.75 applies to dwellings and schools, follow mould and surface condensation limits in BRE IP 1/06.



# CARBONLITE NEW BUILD



**AECB Certifier:** Piers Sadler,  
Delta Q  
**Architect:** Barefoot Architects  
**Space Heating:** 22 kWh/m<sup>2</sup>.yr  
**Windows:** Triple glazed  
**Ventilation:** MVHR (heat recovery)



**AECB Certifier:** Richard Bendy,  
The Healthy Home Ltd  
**Heating Demand** 13kWh/m<sup>2</sup>.yr  
**Airtightness:** 0.37ach  
**Windows:** Triple glazed  
**Ventilation:** MVHR

# CARBONLITE RETROFIT



**AECB Certifier:** Eric Fewster,  
ColdProof  
**Property age:** 1960s  
**Space Heating:** 30kWh/m<sup>2</sup>.yr  
**External insulation**  
**Windows:** triple glazed  
**Ventilation:** MVHR (heat recovery)



**AECB Certifier:** Hannah Dixon,  
Progress in Practice  
**Property age:** 1983-92  
**Space Heating:** 37 kWh/m<sup>2</sup>.yr  
**External insulation**  
**Windows:** Triple glazed  
**Ventilation:** MVHR (heat recovery)

# CARBONLITE COMMENTS

“

**The CarbonLite tool is fantastic at helping us manage and demonstrate the science.**

”

“

**It's lovely. It's comfortable, warm.**

”

“

**CarbonLite is the standard where you can demonstrate what the energy efficiency of a building is going to look like.**

**It uses Passivhaus methodologies. It gives you a stepping stone to make sure it is a robust and long term renovation for an energy efficient house.**

”

“

**An achievable standard.**

”

“

**CarbonLite offers this very technical solution in the format of something that is simple to apply on a construction project.**

”



## Take the Next Step Toward Sustainability

Are you ready to be part of the change? Whether you're an industry professional or planning your dream home, AECB CarbonLite offers the knowledge and support you need to make a real difference.

## Get in Touch

Visit our website: Find out more about our standards at [aecb.net](http://aecb.net)

Find your nearest [CarbonLite Certifier](#)