

The logo consists of the lowercase letters 's' and 'c' in a bold, white, sans-serif font, set against a red circular background. The 's' and 'c' are connected at the bottom.

simply
certification

PAS 2038 Retrofit of
Commercial Buildings -
How to achieve
compliance



Certification Body

Carry out assessments for a range of standards

Supports the construction and built environment sector

Breaking the mould of how Certification Bodies are perceived



Our Core Values

Collaborative

Supportive

Responsive

Innovative

Value lead





What is PAS 2038?

A new standard on retrofitting energy efficiency measures
in non-domestic buildings.

PAS 2038 is one of three standards

PAS 2030

- The installation of energy efficiency measures
- UKAS accredited certification

PAS 2035

- The assessment and design of energy efficiency measures in a domestic property
- Independent certification of conformity

PAS 2038

- The assessment and design of energy efficiency measures in commercial properties
- Independent certification of conformity



Aims of Retrofit Standards



Improve energy efficiency



Avoid unattended consequences



Improve overall quality of installation work



Reduces environmental impact



Improve functionality of buildings



Protect listed and heritage architecture





Why PAS 2038?



Greater confidence in retrofit processes



Commitment to working towards net carbon zero



Aim to get businesses 20% more efficient by 2030 and 60% by 2050



Supports in the alignment to existing quality standards i.e. ISO 9001



A clear process is from inception, assessment, design, installation and evaluation is defined



Non-domestic Private Rented Sector to band B by 2030

Non-Domestic Buildings

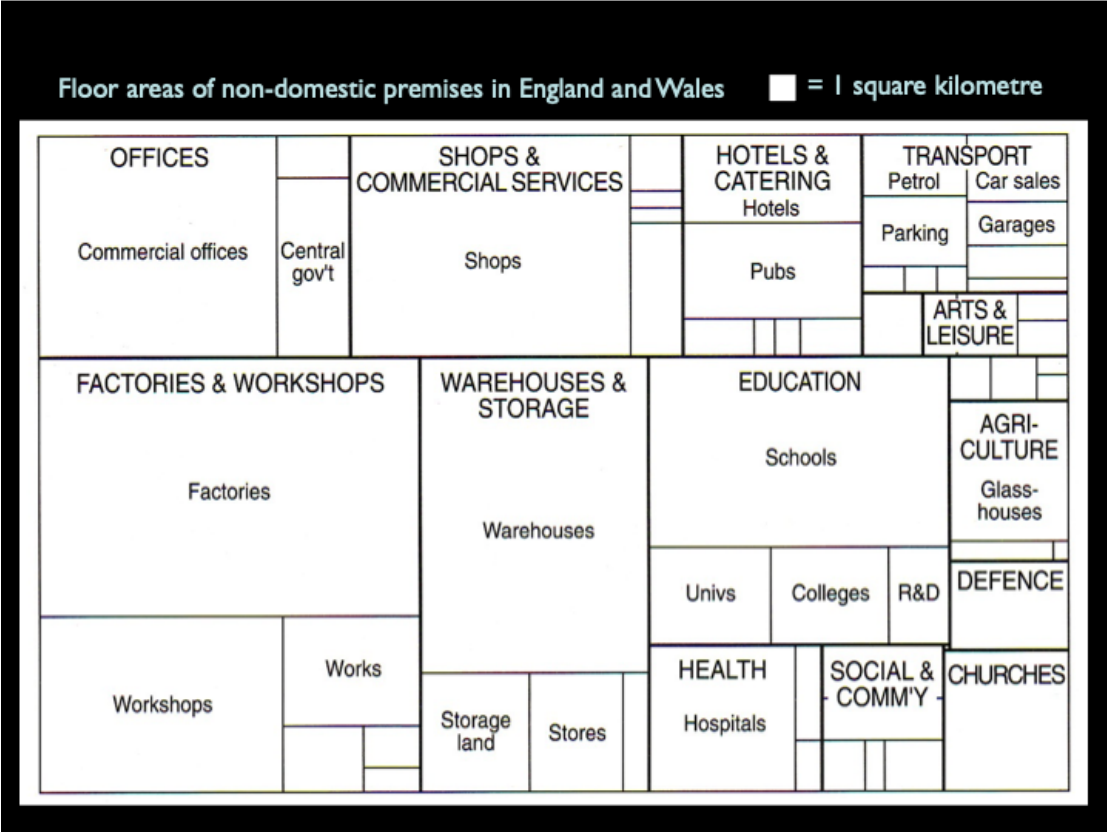
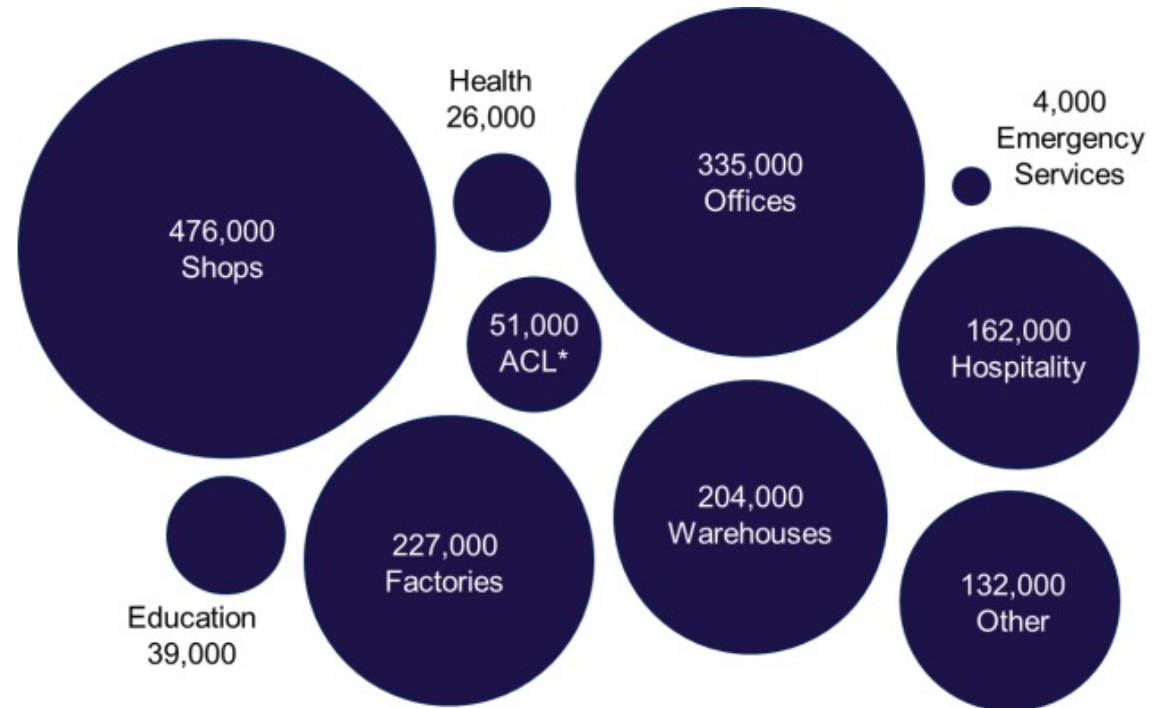


Figure 1: Diagram courtesy of University College London Energy Institute (Non-Domestic Building Stock Project)

Non-Domestic Buildings



BEIS 2020

Figure 2: The number of ND-NEED non-domestic buildings in England and Wales by building use (as at end of March 2020)

*ACL is an abbreviation for Arts, Community and Leisure

Non-Domestic Buildings Statistics

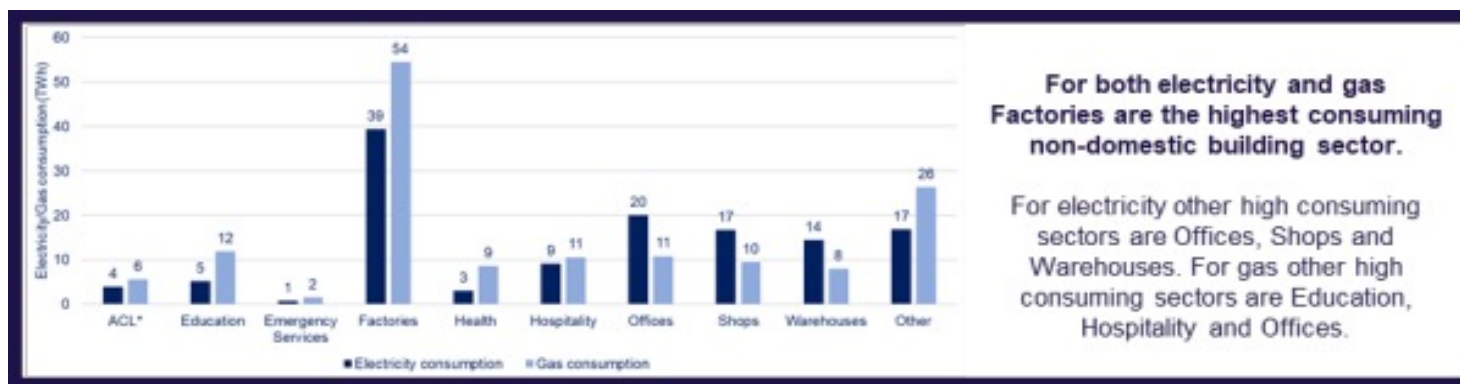
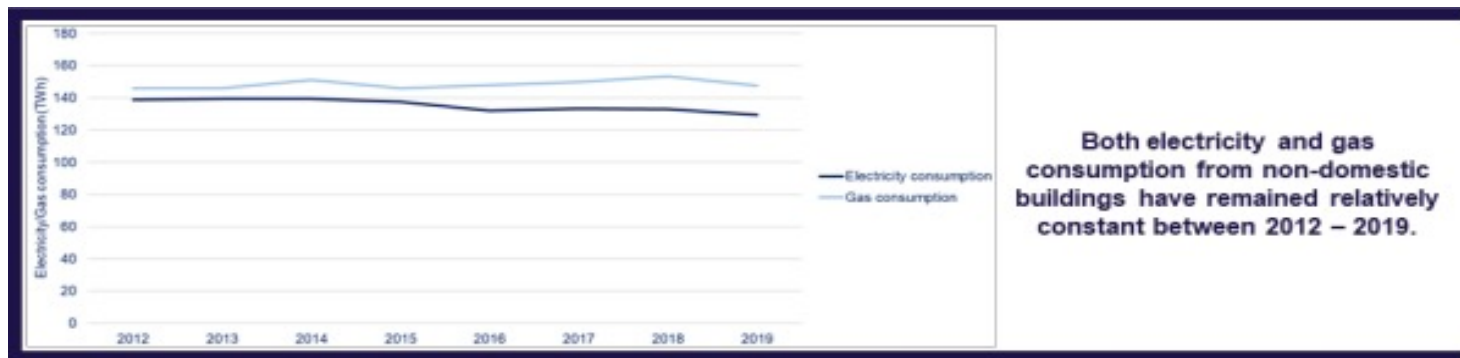
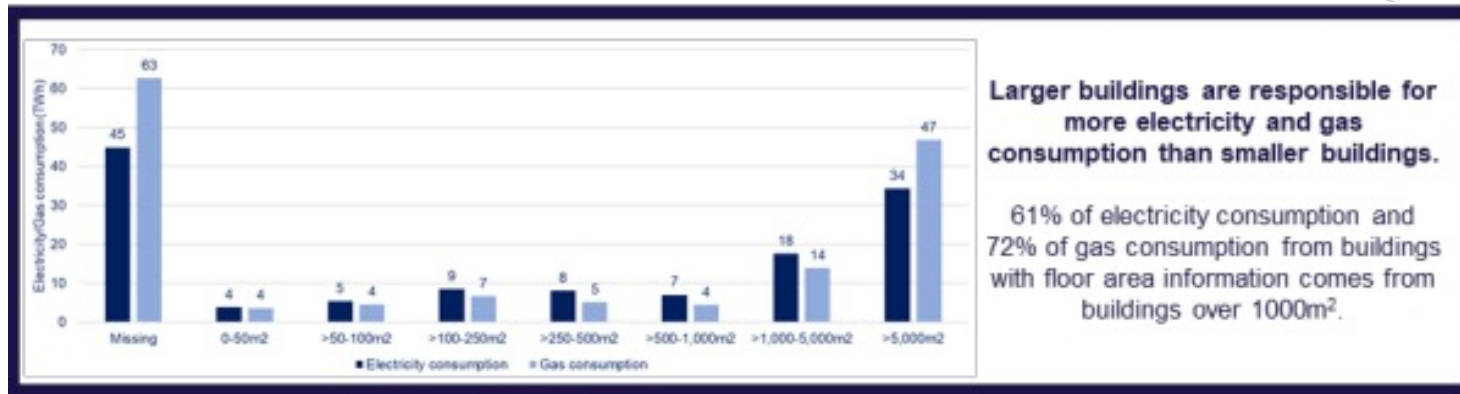


Figure 3: The number of ND-NEED non-domestic buildings in England and Wales by building use (as at end of March 2020)



The supply chain:
Who would need to be compliant to PAS 2038?

Those in the construction, maintenance sector who assess and design the upgrading of schemes for existing commercial building stock greater than 500m².

Retail

Education
(e.g schools, universities)

Healthcare
(e.g hospitals, primary, secondary and tertiary care)

Factories

Leisure
(e.g. pools, gyms, cinema, restaurants)

Warehousing

Offices

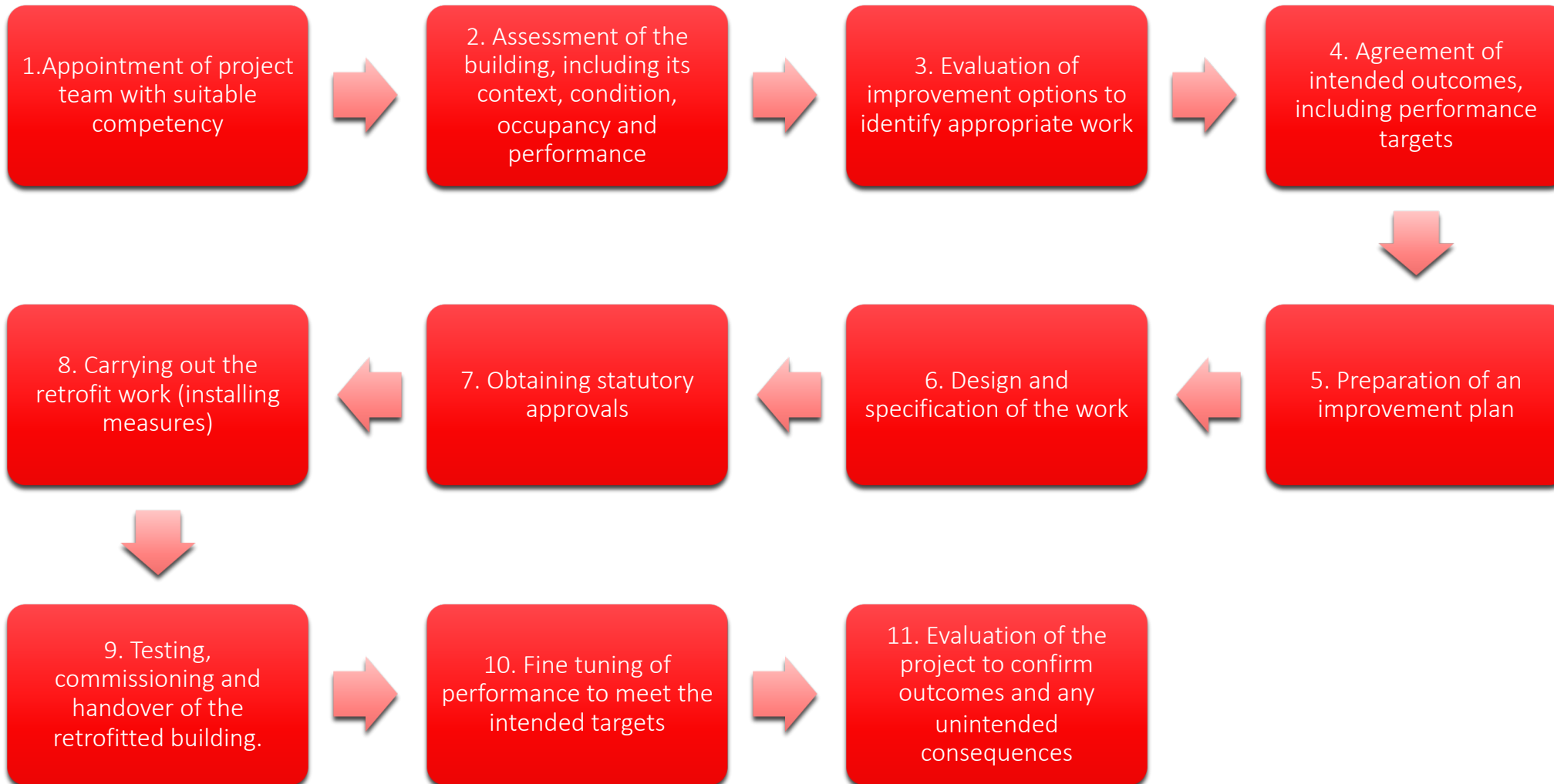
The supply chain:
Who would need to be compliant to
PAS 2030

Those in the construction, maintenance sector who install measures to existing commercial building stock greater than 500m² using PAS 2038 compliant designs

Insulation and building fabric

Building services i.e. HVAC, electrical





1. Appointment of project team with suitable competency

Roles and Competency

The Lead Professional

- Acts as a Project Manager like the Retrofit Coordinator in PAS 2035. Could be an Architect, Engineer, Surveyor or Project Manager.

The Lead Assessor

- Leads the assessment of the building, which includes its use, condition and energy performance. Could be a NDEA to support the assessment process.

Retrofit Team

- The team could include a combination of Lead Assessors, Designers, Specialised Consultants and Installers.

2. Assessment of the building, including its context, condition, occupancy and performance

Assessments



Context. The buildings architectural, cultural and historical context, and its physical settings, including aspect and exposure, access, planning constraints ect.



Condition. The builds structural condition, and it's construction, services and controls, the presence of defects and the needs for repairs and maintenance.



Occupancy. The number of occupants and their pattern of use of the building, including heating, cooling, lighting and ventilation regimes.



Energy Performance. How much energy the building uses, broken down by end uses and fuel types, related to benchmarks.

3. Evaluation of improvement options to identify appropriate work

Post the assessment an improvement option evaluation should be carried out to identify a package of energy efficiency improvement options. This will include:



Identification of all the technically applicable and appropriate energy improvement measures



A payback calculation / energy cost effectiveness



Alignment to intended retrofit outcomes

5. Preparation of an improvement plan

Shall be agreed with the client

Core focus on achieving net zero emissions by 2050

Some of the elements that needs to be included are:

- Benchmark comparison of unimproved building to industry benchmarks
- Identify any repair or maintenance work required prior to the retrofit
- Confirm the agreed energy performance target
- Identify ways to eliminate the use of fossil fuels

6. Design and specification of the work



Similar to PAS 2035 improvement measures of retrofit project shall be subject to a Retrofit Design by a qualified person.



Design should be aligned across materials, products, processes and services and be compatible with the building and each other.



Specific design considerations for moisture and overheating management needs to be included.



The retrofit design shall specify the sequence of installation of the energy efficiency measures.



Up to 1000m² = Simply payback needs recalculating



Over 1000m² = Energy cost effectiveness needs recalculating

7. Statutory approvals

The project team shall advise the client about the need for statutory approvals for the proposed retrofit works.

8. Carrying out the retrofit work (installing measures)

The installation work should be carried out by either

- A contractor engaged by the client to retrofit the whole building employing suitable professional sub contractors where required.
- Specialist installers engaged by the client to install individual measures or packaged related (e.g. insulation or ventilation)
- Installed in accordance to PAS 2030 or alternative installation standards.
- Over 1000m² contractor shall prepare and inspection and test plan.
- Defective work should be recorded and corrected.

9. Testing, commissioning and handover of the retrofitted building.



The testing and commissioning shall be specified in the Retrofit Design (e.g. air tightness testing before, during and after) the installation. Certificates should be provided to clients via the Retrofit Lead Professional



For buildings over 1000m², the building assessment, retrofit design, testing and commissioning shall be used in a building logbook.

6

Handover of the retrofit work shall be overseen the Lead Professional and shall be held electronically for six years or warranty length

10. Fine tuning of performance to meet the intended targets

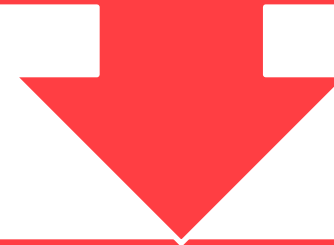


For buildings over 1000m² during the first year after handover and occupation of the building the project team shall carry out fine tuning of the building system and controls to assist with achievement of energy performance targets.



All changes shall be recorded within the logbook.

Every retrofit project shall be evaluated to determine how well the installed measures are working and if they have met the intended outcomes.



Two levels of evaluation should be carried out as appropriate:

Basic = A
questionnaire
distributed to the
client and occupants

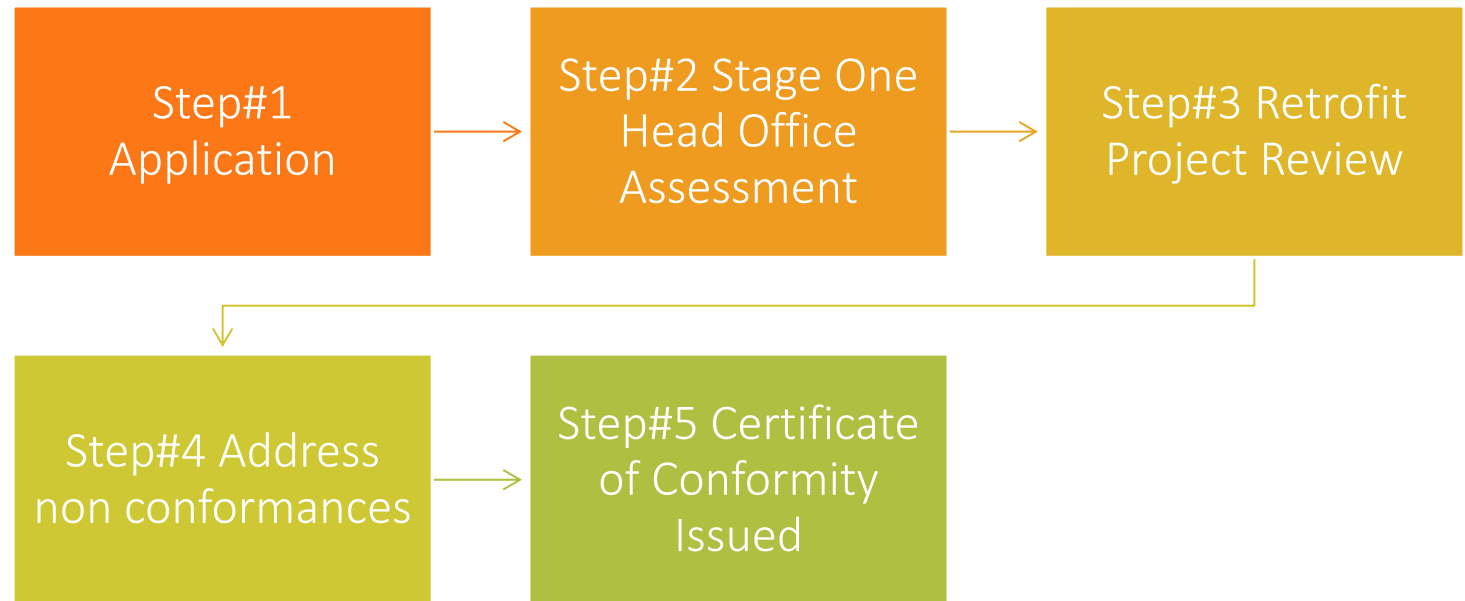
Change of outcomes
noted

Further Evaluation =
Lessons learnt,
identified of further
work

11. Evaluation of the project to confirm outcomes and any unintended consequences



The process to gain a certification of conformity for PAS 2038





References

Figure 1: Diagram courtesy of University College London Energy Institute (Non-Domestic Building Stock Project)

Figure 2: Department for Business, Energy & Industrial Strategy, 2020. Non-domestic National Energy Efficiency Framework 2020. London: BEIS.

Figure 3: The number of ND-NEED non-domestic buildings in England and Wales by building use (as at end of March 2020)



Free checklist and access
to our PAS 2038 group

(Link in the chat)

simplycertification.co.uk/free-pas-2038-checklist/