

OCDEA TECHNICAL BULLETIN

A Guide to
Photographic Evidence
for New Homes

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A GUIDE TO PHOTOGRAPHIC EVIDENCE FOR NEW HOMES

Overview

This Technical Bulletin awards **60 Minutes CPD** for Elmhurst members and covers/provides guidance for the following areas.



- Introduction to Photograph requirement
- What photographs are needed?
- Who will take the photographs?
- When should photographs be taken?
- Photograph guidance
- Creating a photograph evidence report
- Frequently Asked Questions

Introduction

In recent years, the housebuilding industry and government have grown increasingly concerned over the potential gap between design and as-built energy performance. The performance gap in new built homes is particularly affected by three major factors: limitations of energy models; different occupant behaviour of each dwelling; and build quality. Poor build quality in particular can lead to a new home not meeting the intended primary energy rate, CO₂ emission rate, or limiting U-values and can result in higher energy bills for occupants. As the energy performance of new dwellings is also affected by compliance with Building Regulations requirements, the government is considering it within the broader review of reforms on building safety, design, construction and occupation.

When the Future Homes Standard consultation launched in 2019 there was an acknowledgement of the performance gap and a number of proposals were made to tackle this in the next version of Part L. These included additional guidance on typical build quality issues, a standardised compliance report, known as the BREL or BRWL, provision of further information to Building Control Bodies and home owners and a requirement for photographic evidence to improve the accuracy of energy calculations and to provide assurance that the SAP assessments are a reflection of as-built dwellings..

Currently On Construction Domestic Energy Assessors (OCDEAs) are not required to obtain on site photographs as part of the evidence needed to produce Building Regulation Compliance reports or Energy Performance Certificates. However the Government's response to the consultation and subsequent publication of



Approved Document (AD) L: Volume 1 2021 has confirmed the introduction of this requirement in England from 15th June 2022. It is expected other devolved administrations will follow suit, with Wales also confirming this will be required in their next revision to Part L due later in 2022.

This guide has been developed as a common sense approach to meet the new regulatory requirement for photographs. It is intended to help On Construction Domestic Energy Assessors (OCDEAs) understand how the introduction of the requirements for photographs will impact their role. It is not intended to be a guide for builders in how to take photographs to satisfy Building Regulations.

Elmhurst will update this guide where necessary following publication of further information in this area from industry.



What photographs are needed?

The following is taken from Appendix B of AD L – Volume 1 for England, which comes into force on 15th June 2022;

B6 - Photographs should be taken for each dwelling on a development as a record during the construction of a property. The photographs should be made available to the energy assessor and the building control body. Anyone may take the photographs.

B7 - Photographs should be taken of typical details as listed below and should be unique to each property. One photograph per detail should be recorded. Additional images, such as a closeup detail, should be provided only when necessary (see below). Photographs should be taken at appropriate construction stages for each detail when completed, but prior to closing-up works.

1. **Foundations/substructure and ground floor, to show thermal continuity and quality of insulation in the following places.**
 - a. At ground floor perimeter edge insulation.
 - b. At external door threshold.
 - c. Below damp-proof course on external walls.

2. **External walls: for each main wall type, to show thermal continuity and quality of insulation for the following.**
 - a. Ground floor to wall junction.
 - b. Structural penetrating elements.

NOTE: For blown fill, photos should show clean cavities and clean brick ties with very limited mortar droppings.

3. **Roof: for each main roof type, to show thermal continuity and quality of insulation at the following.**
 - a. Joist/rafter level.
 - b. Eaves and gable edges.

4. **Openings: for each opening type (one image per wall or roof type is sufficient), to show thermal continuity and quality of insulation with photographs of the following.**
 - a. Window positioning in relation to cavity closer or insulation line.
 - b. External doorset positioning in relation to cavity closer or insulation line

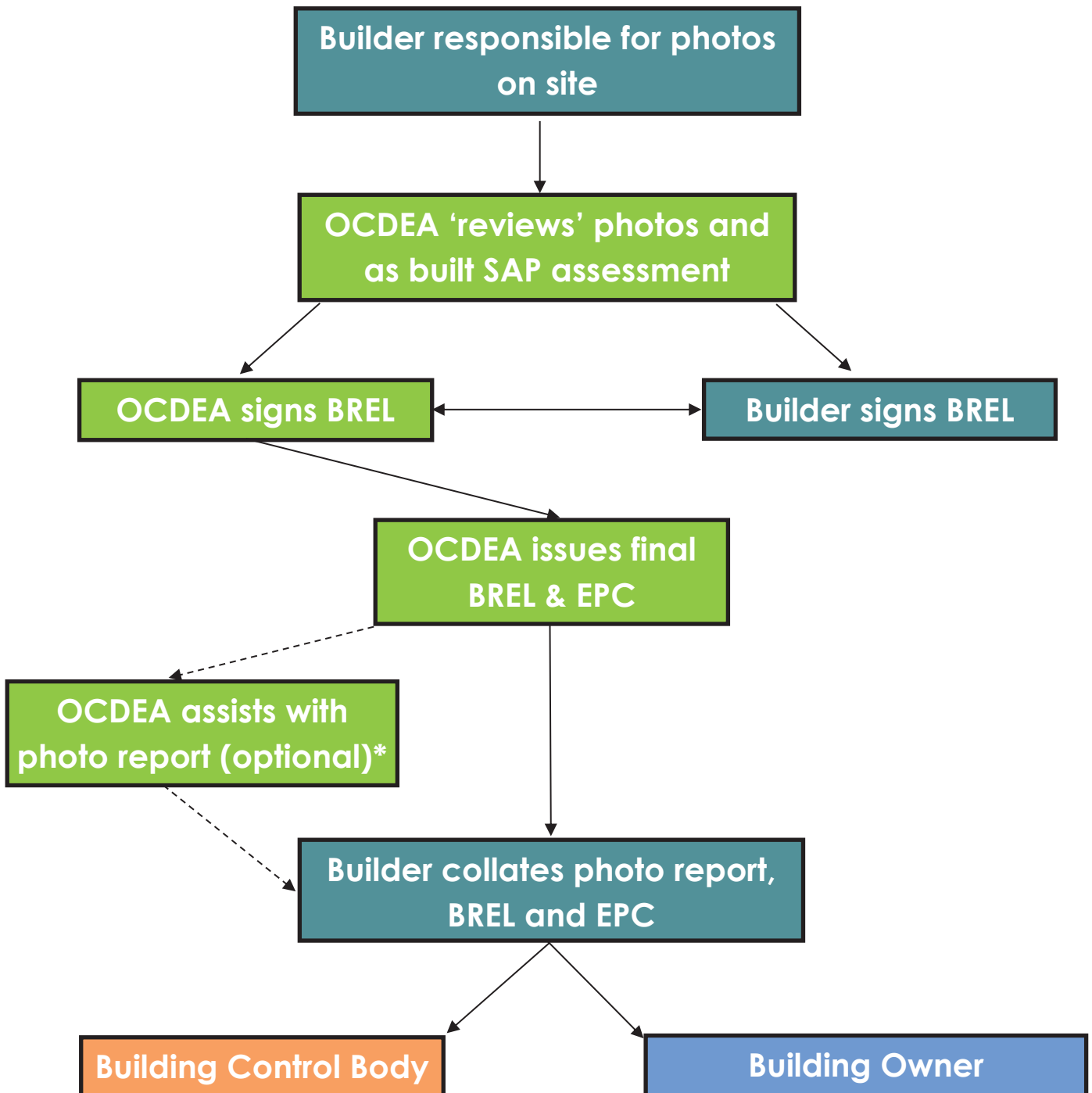
5. **Airtightness:** additional photographs for all details 1–4 to show airtightness details (only if not included or visible in continuity of insulation image).

6. **Building services: for all plant associated with space heating, hot water, ventilation and low or zero carbon technology equipment within or on the building, show the following.**
- a. *Plant/equipment identification label(s), including make/model and serial number.*
 - b. *Primary pipework continuity of insulation.*
 - c. *Mechanical ventilation ductwork continuity of insulation (for duct sections outside the thermal envelope).*

B8 - Photographs should be digital and of sufficient quality and high enough resolution to allow a qualitative audit of the subject detail. Close-up photographs may be needed where a long shot image provides insufficient detail. More than one image of each detail may be needed. Geolocation should be enabled to confirm the location, date and time of each image. Each image file name should include a plot number and detail reference according to the numbers used in paragraph B7. For example, Plot 1 eaves detail would be P1/3b.

Who will take the photographs?

The following diagram indicates typically how photographs will flow from site to OCDEA and eventually to the Building Control Body and the occupant of the new home. AD L: Volume 1 2021 does not specify who can take the photographs. It is the builders responsibility to organise who takes the photos and we believe in the vast majority of cases these will be taken by the builder themselves;



**OCDEAs may wish to offer this service for builders or alternatively the builder may collate photos as a report and send this to the OCDEA.*

When should photographs be taken?

AD L: Volume 1 lists a number of photographs that will be required to be taken during construction, whilst others could be taken closer to completion. It will be imperative that the builder understands the requirements and the correct timeframe to take the photographs.

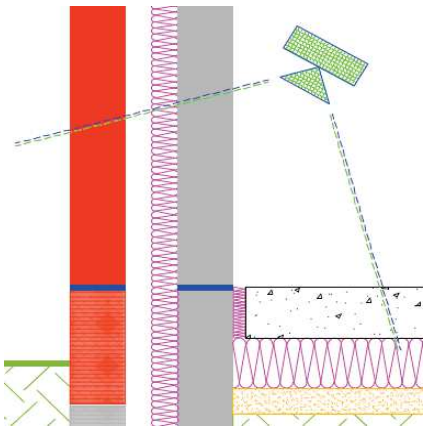

The below is a guide as to at what construction stage each photo should be taken based on an example of typical build stages of a new dwelling;

Build Stage	Typical elements constructed	AD L Photo Reference
Oversite	Foundations	1A, 1B, 1C
	Sub masonry	
	Drains	
	Oversite	
Roofed	Masonry to Joists	2A,2B, 3A, 3B, 4A, 4B
	Joists	
	Second floor	
	Third floor	
	Masonry to plate	
	Gables/roof carcass	
	Roof coverings	
1st fix	1st fix carpet	
	1st fix plumbing	
	1st fix electrics	
	Plastering	
Completion	2nd fix carpet	6A, 6B, 6C
	2nd fix plumbing	
	2nd fix electrics	
	Kitchen	
	Ceramics	
	Decorations	
	Finals	
	QCFI	
	CML	
	Completion	



Photograph Guidance

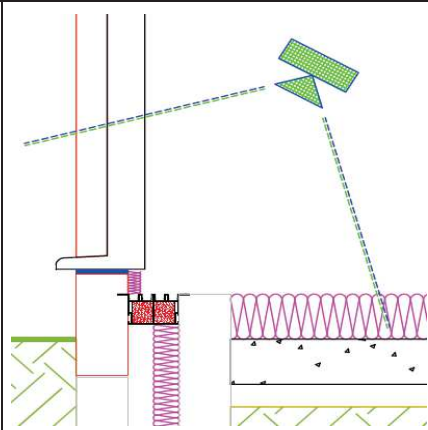
This section will take a look at each photograph listed in Appendix B of AD L: Volume 1 to indicate what each one should cover. Without good quality photographs it will not be possible to interpret what has been delivered on site and compare with an as built SAP assessment. The following are some examples of what photographs could look like for each category. Further guidance on continuity of insulation, limiting thermal bridging and ensuring airtightness can be found in paragraphs 4.14-4.22 of AD L: Volume 1;

AD L Photo Reference	Direction of Photograph	Typical Example	AD L Guidance
1A – GF perimeter insulation (SAP junction reference E5)		 <p>Protected with free version of Make Watermark. Full version doesn't put this mark.</p>	Photograph should show a continuous strip of insulation in contact with the walls around the perimeter of the ground floor.



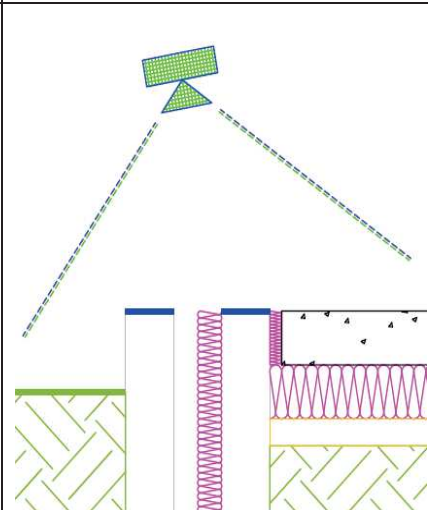
1B – Door threshold

(SAP junction
reference E3)



Photograph should show a strip of insulation or insulated cavity closer in the threshold zone.

1C – Below DPC on
ext. walls

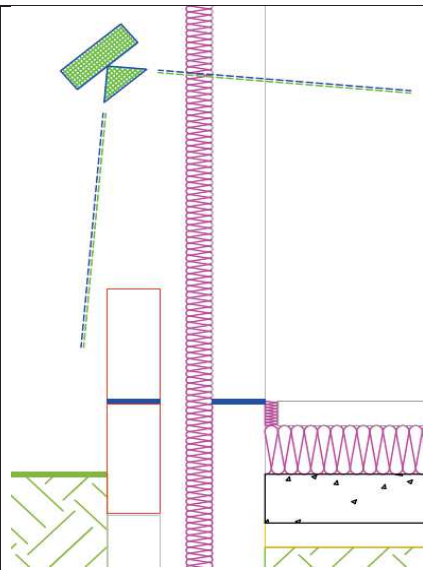


Moisture-resistant insulation should be fitted below damp-proof course level and extend to the foundation block/structure.



2A – GF to Ext. wall
junction

(SAP junction
reference E5)



External or cavity wall
insulation should
extend below the
dampproof course

2B – Structural
penetrating elements

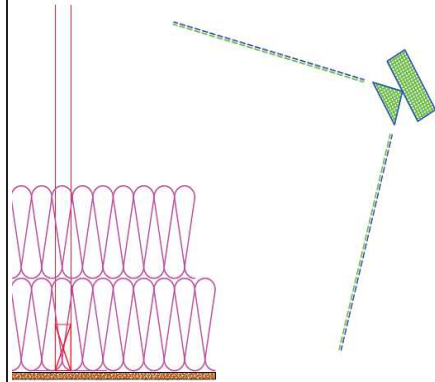
(SAP junction
reference E1/2)



There are a number
of items this could
cover but discussions
with stakeholders
suggests this would
usually include lintels,
and one photo is
required per opening
type.



3A – Roof at
joist/rafter level

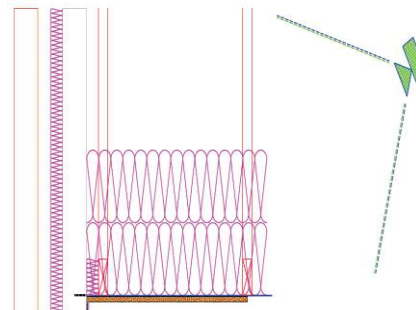
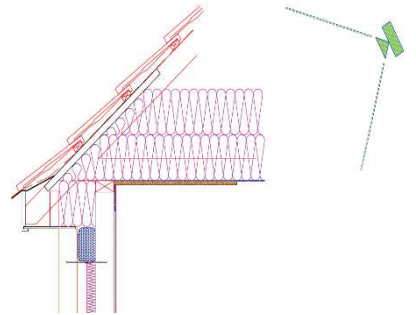


Insulation should be installed tight to the structure, without air gaps, and should extend to the wall insulation



3B – Roof at
eaves/gable edges

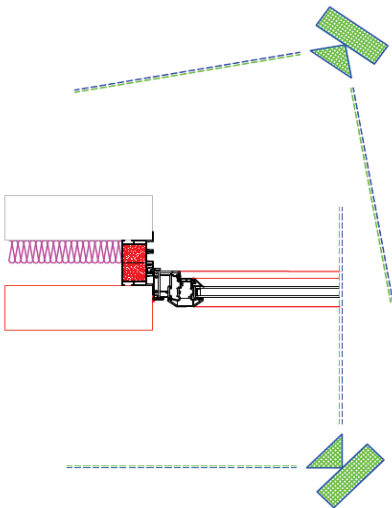

(SAP junction
reference E10, E11,
E12, E13)



Eaves photograph
should show loft
insulation extending
beyond the wall
insulation to minimise
cold bridging.

Gable photograph
should show
insulation against the
inner surface of the
external/party walls
to minimise cold
bridging.



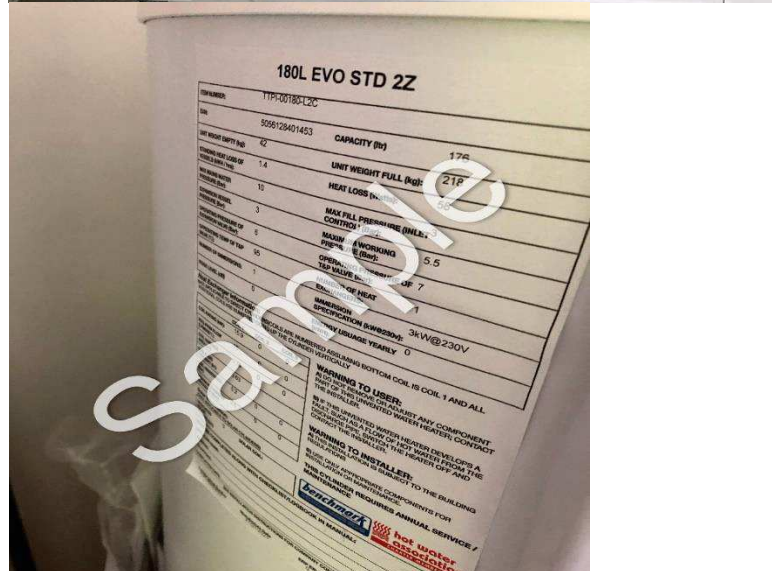
<p>4A/B – Window/door position to cavity closer/insulation line</p> <p>(SAP junction reference E4)</p>			<p>One photo per window/door type is sufficient here.</p> <p>Good practice would be to show a tape measure to check the window/door is in line with the cavity closer/insulation</p>
<p>5 – Airtightness issues</p>			<p>There is little guidance on what is required in this section currently.</p> <p>This could be to show how items that penetrate the air barrier, which are not covered by other photos, are sealed.</p>



6A - Plant/equipment identification label(s), including make/model and serial number



Photos should show the labels clearly identifying make and model of heating system and hot water cylinder.



6B - Primary pipework insulation



6C- Ventilation
ductwork insulation



Only needed for
ductwork in
unheated spaces
and should show the
insulated ductwork
used.

Creating a photograph evidence report

From many discussions with Building Control Bodies (BCBs), builders and other stakeholders Elmhurst understands BCBs would prefer if the photographs are submitted to them in a report which presents the photographs in line with the requirements of Appendix B. This could be completed by the builder or an OCDEA and should you wish to offer this service to your clients we would advise reports to be set out in a similar manner to the following;

Part L Photograph Evidence Report



The above image could be a photo set as cover or company logo

Address: Plot 1, Example Site

Client: Example Developer

Report issue date: DD/MM/YYYY

The following photographs have been compiled in line with the criteria of Appendix B of Approved Document L: Volume 1 2021. The photographs have been taken by the developer and supplied to the On Construction Domestic Energy Assessor (OCDEA) to verify the as built details used within the Building Regulations England Part L (BREL) report and Energy Performance Certificate (EPC).

1. Foundations and ground floor

a. Ground floor perimeter edge insulation (SAP junction reference E5)



Photo reference; P1/1a
Additional notes;

b. External door threshold (SAP junction reference E3)



Photo reference; P1/1b
Additional notes;

The remaining photographs listed in Appendix B of AD L: Volume 1 should be set out as per the guidance above.

Frequently Asked Questions

Understandably we have received numerous questions on this requirement since the publication of Part L 2021. Below are the some of the most frequently asked questions;

What is the OCDEA responsible for?

It is Elmhurst's view that the OCDEA should check the photographs to verify certain areas of the SAP assessment and ensure any product substitution is accounted for. These include;

- Generic insulation type and location e.g. mineral wool, rigid board, full fill or partial fill
- Heating system type and model
- Heating controls
- Ventilation system type and model
- Hot water cylinder type and model
- Presence of photovoltaic or solar hot water panels

It is Elmhurst's view that an OCDEA is required to review the photographs provided by the builder to be satisfied that they indicate that the BREL report is correct.

Where a photograph is ambiguous or missing then this should be clearly stated in a Photograph Evidence Report produced by the builder or OCDEA and supplied to Building Control.

An OCDEA is not required to comment on workmanship or design unless they have the competence to do so. Building Regulations clearly state it is the builders responsibility for ensuring a compliant home has been constructed.

It is the OCDEAs responsibility to ensure that the as built SAP assessment used to generate the BREL report and EPC is accurate and any product substitution that has occurred during the build is accounted for.

Do photographs need to be provided for every plot?

Yes AD L: Volume 1 states "*Photographs should be taken for each dwelling on a development*". Elmhurst does not believe a 'type approval' approach is permitted however this is for the Building Control Body responsible for the development to decide.

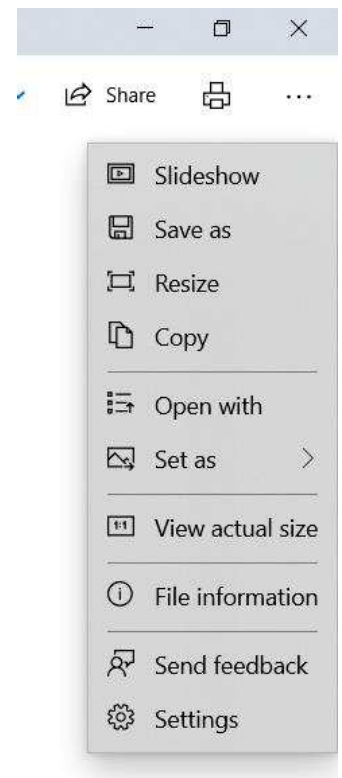
How do I check the time, date and geotag on photographs?

It is expected that good practice would be for builders to date and location stamp the photographs supplied to OCDEAs and BCBs. There are applications freely

available that will stamp a map image based on the geotag, and time/date of the photograph. Some developers may utilise this as an easy visual check of location and time the photograph was taken.

Alternatively if you are sent photographs as files that do not display the date and location as per the good practice described above then as with any other form of evidence you should check them to ensure they are relevant to the plot being assessed. If you are using a Windows PC any geotag can be viewed as follows;

1. Open the photograph in the 'Windows Photos' application.
2. Click the ellipsis button and select 'File Information'
3. This will show the time and date the photograph was taken, and a map of the location the photograph was taken;



Finally it should be remembered that the Building Regulations put the onus on the builder to ensure compliance. Therefore the responsibility for presenting photographs taken in the correct location is with the builder.

What should I do if I believe the same photographs are being used for different plots?

The geotag can be inspected to see if the location the photographs have been taken is the same. If you believe this to be the case then this is not in accordance with Appendix B of AD L: Volume 1 and you should discuss your concerns with the individuals who supplied the photographs, likely to be the builder. We would advise not to issue a BREL report or EPC until satisfactory photographs have been received or an alternative solution has been agreed with the client and the BCB.

Should I expect to receive the photographs during construction or at completion?

To some extent this will depend on your working relationship with the builder. We would suggest good practice would be to send the photographs to the OCDEA throughout the build process, so any issues can be mitigated before completion. This would entail running SAP assessments incorporating any changes to ensure compliance is achieved. However if photographs are only received at as built stage and are in accordance with Appendix B and the SAP assessment complies with the energy efficiency requirements of AD L: Volume 1 this is also acceptable.

Does this apply to Part L 2013 or earlier developments?

No this only applies to homes that fall under Part L 2021.

If photographs are not available for some or all of the sections in Appendix B does that prevent me issuing a BREL and EPC?

If the builder is unable to provide any photographs then they are not compliant in line with Appendix B of AD L: Volume 1.

If an individual photograph is missed, and an alternative form of documentary evidence is supplied, for example heating commissioning certificate detailing make and model of boiler, then Elmhurst believes it is reasonable to issue the BREL and EPC. However we would recommend advising the builder the Building Control Body may take issue with photographs being missed and this could cause delays in issuing a completion notice.

In either case any issues should be advised to your client who can liaise with the BCB to establish a solution to the issue.

What photographs are required for blown cavity wall insulation?

Many of the photographs require the insulation to be in place and visible to verify the construction. However for blown insulation this will not be possible as the cavities will be closed off before insulation is blown into them.

Appendix B of AD L: Volume 1 states *“For blown fill, photos should show clean cavities and clean brick ties with very limited mortar droppings.”*

What photographs are needed for MMC/offsite manufactured homes?

Currently the requirements in Appendix B of the AD are the same for all types of construction. Therefore MMC/offsite manufactured systems must comply with the requirements to take photographic evidence in the AD.

For offsite construction our guidance is that the requirements would be met by photographs of the construction taken either during the manufacturing process or onsite during construction as applicable.

Will the same amount of photographs be required for apartments?

Currently the requirements in Appendix B of the AD are the same for all types of dwelling. However common sense would indicate that the building envelope should be treated as one entity, therefore a photograph in one apartment could be used for the others where the same construction applies. However other photographs such as the building services (6A, 6B, 6C) should be taken in each apartment.

Do I need to retain a copy of the photographs?

Yes photographs should be stored securely alongside the other evidence compiled for completing Building Regulation compliance reports and Energy Performance Certificates. In accordance with the DLUHC's Scheme Operating Requirements the evidence described above should be kept for a period of at least 15 years.

Will photographs be required for EPC quality assurance audits?

This has been discussed in Audit Working Group and at SAP Conventions meetings. As photographs should be used to verify the construction of the dwelling it makes sense to ask for these to be supplied for homes built to Part L 2021. Therefore photographs will be added as recommended evidence in the minimum evidence requirements that OCDEAs must adhere to when compiling evidence for audit.

Do the photographs need to be supplied to the building occupant?

Paragraph 9.3 of AD L: Volume 1 states;

“For new dwellings, a signed copy of the Building Regulations England Part L compliance report (BREL report) and photographic evidence of the build quality should be provided to the homeowner.”

Therefore as per our flowchart earlier in this guide the builder should make a copy of the signed BREL and photographs available to the occupant alongside other documentation required by Building Regulations.

Conclusion

The introduction of the requirement for on site photographs in Part L 2021 is a significant change to the compliance process and evidence requirements. It is vital builders understand the range of photographs that are required and ensure they are taken at the appropriate time.

The Building Regulations are clear that it is the builder's responsibility to ensure compliant homes are constructed. The OCDEA is responsible for ensuring the as built SAP assessment and associated BREL and EPC is accurate based on the evidence provided to them.

The Government have stated this is a step towards closing the performance gap and improving compliance standards in new homes and it is expected this will be revisited in the consultation on the Future Homes Standard expected in 2023.

Elmhurst will update this guide where necessary following publication of further information in this area from industry.