



Level 4 Diploma in

Built Environment Infrared Thermography Operators

Qualification Specification

Qualification Recognition Number: 601/2688/7

ABBE Qualification Code: DipBEITL414

February 2019

Why this document is being revised

This document has been revised by ABBE in February 2019. A summary of other changes made to this handbook are below:

- Removed the reference to Class 1 and Class 2 in the title of the qualification
- 2.1 Qualification purpose – this has been updated
- 2.2 Who can take this qualification – this has been updated
- 2.8 Progression – this has been updated
- Appendix 3 – added

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1. ABBE

1.1 Introduction

ABBE, the Awarding Body for Building Education is a forward thinking organisation that offers a range of apprenticeships, qualifications, benefits and support.

ABBE is regulated by Ofqual for the delivery of a range of qualifications. Our qualifications are nationally recognised helping learners to achieve their full potential and ambitions. The full range of qualifications can be found on our website.

1.2 Mission Statement

Our Values - Quality through Standards: Our aim is to provide a high quality experience by building a strong community of mutual support and trust. We can use our collective talents to build meaningful partnerships to help us all to achieve our goals. ABBE is a recognised Awarding Organisation with strong professional integrity.

Our Vision: Is that every learner is confident, successful and has the opportunity to achieve their full potential.

Our Mission: ABBE Educates, inspires and empowers learners

1.3 Qualification Specification

The aim of this specification is to provide learners and centres with information about the content of this qualification. This specification is a live document and, as such, will be updated when required.

Additional qualification details are available for ABBE approved centres in the ABBE qualification handbook.

1.4 Enquiries

Any enquiries relating to this qualification should be addressed to:

Awarding Body for the Built Environment (ABBE)
Birmingham City University
University House
15 Bartholomew Row
Birmingham
B5 5JU

Telephone: 0121 331 5174
Email: abbeenquiries@bcu.ac.uk
Website: www.abbega.co.uk



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2. Qualification Information

2.1 Qualification Purpose

Infrared thermography has traditionally been used to identify fault conditions in mains electrical systems and components, in many mechanical systems and by fire-fighters to locate casualties. Infrared thermography has also been used to a lesser extent in the built environment to locate sources of heat loss from buildings, whether through poor installation of insulation systems, thermal bridging or draughts. Recent developments increase the likelihood of infrared thermography in the built environment becoming more widely available. These developments include:

- The release to market by a number of manufacturers of more affordable, portable, high performance infrared cameras.
- The issue in 2018 of the BRE Home Quality Mark ONE technical manual which recognises the benefits of an infrared heat loss survey by awarding a Credit for a satisfactory thermographic survey report of domestic property signed by a PCN Class 2 or ABBE Level 3 certified thermographer.
- Initiatives such as the Green Deal and Energy Company Obligation (ECO) that focus on 'fabric first' solutions.
- An awareness of the gap between a building's 'as-designed' and 'as-used' energy performance in the Colville Report entitled, 'More Homes, Fewer Complaints'.
- The issue of ISO6781:2015 that specifies the qualifications and competence requirements for personnel who perform thermographic investigations on buildings, interpret the data from thermographic investigations, and report the results of infrared thermography in the built environment.

2.2 Who could take this Qualification?

This qualification builds on the ISO 6781 Class 2 operator skill set to ensure that learners are able to act as independent thermographers and/or team leaders in the residential, commercial, industrial and publically-funded built environments.

Learners wishing to take this qualification would normally be expected to have achieved the ABBE Level 3 Certificate in Domestic Infrared Thermography or certification at ISO 6781 Class 1, PCN level 1 or equivalent. However this qualification is also achievable by, and open to, those who have no formal qualifications but have acquired a good level of thermographic expertise through their previous employment or other work over an extended period of time.

Learners with little or no background experience in advanced thermographic techniques or surveying in the commercial/industrial built environment must understand that this is an extremely challenging qualification and must be prepared for their assessment centre to advise them that their actual level of experience and expertise indicates that they should begin with the Level 3 qualification.

2.3 Qualification Number

ABBE Level 4 Diploma in Built Environment Infrared Thermography Operators: 601/2688/7

2.4 Qualification Level



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This qualification has been listed on the Regulated Qualifications Framework (RQF) at: Level 4

2.5 Total Qualification Time

This qualification is allocated Total Qualification Time (TQT) this includes Guided Learning (GL) expressed in hours, which indicates the number of hours of supervised or directed study time and assessment. Credit has also be allocated to this qualification.

- The Total Qualification Time (TQT) for this qualification is: 480
- Guided Learning (GL) for this qualification is: 215
- Credit Value: 48 credits

2.6 Progression

This qualification has been designed to encourage participation in education and training in other related areas by:

- offering a springboard for current PCN Category 1 and Category 2 thermographers to enhance their skills and to progress to this higher-level, building-specific, competency-based qualification
- enabling current practitioners in non-domestic energy assessment, non-domestic Green Deal Advice and operational ratings to expand the portfolio of services offered to their clients
- encouraging current practitioners and consultants in other energy assessment fields, e.g. CIBSE Low Carbon Consultants/Assessors, Carbon Trust footprint assessors, BREEAM/LEED assessors, to expand the portfolio of services offered to their clients
- Presenting a new career opportunity to other suitably-skilled learners who wish to offer commercial/industrial thermographic surveys through retraining or up-skilling.

2.7 Age ranges

Pre 16	No
16-18	Yes
18+	Yes
19+	Yes

2.8 Structure of the Qualification

To achieve this qualification, learners must successfully complete the seven mandatory units.

Mandatory Units			
URN	Unit Name	Credit Value	Level
L/506/0110	Conduct building infrared thermography in a safe, effective and professional manner	6	3
J/506/0123	Understand advanced thermal imaging camera technology and operation	6	4
M/506/0116	Understand domestic building construction, thermal properties and heat loss mechanisms	4	3
L/506/0124	Understand commercial/industrial building construction, thermal properties and heat loss mechanisms	6	3



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R/506/0125	Prepare to carry out infrared thermographic assessments of commercial, industrial or domestic buildings	6	4
Y/506/0126	Carry out infrared thermographic assessments of commercial, industrial or domestic buildings	12	4
D/506/0127	Produce infrared thermographic assessment reports on commercial, industrial or domestic properties	8	4

Units with the same title at different levels or units with the same content cannot be combined in the same qualification.

2.10 Language

ABBE qualifications and assessment materials will be provided through the medium of English.

2.11 Grading

This qualification is: Pass/Fail

2.12 Pre-course Procedures

This qualification is available to anyone who is capable of reaching the required standards. They have been developed free from any barriers that unfairly restrict access or progression thereby promoting equal opportunities.

2.13 Qualification Review Boards

Qualification Review Boards (QRBs) are set up for each qualification. The Boards are drawn from employers, centres, Higher Educational Institutes (HEIs) and others with a vested interest in the sector in which the qualification is used. The purpose of the QRB is to ensure that the content of the qualification and the proposed assessment methodology are fit for purpose and are appropriate to meet the requirements of the sector.

QRBs are ongoing and will be scheduled for specific points within the qualification lifetime; at the notional mid-point and again towards the review date of the qualification. During this process, the QRB will consider any feedback received on the performance of the qualification and will consider if the content, structure, purpose and assessment methodology remain appropriate to the needs of the sector. This will help to improve both our qualification and the specification.



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3. Qualification Unit(s)

Unit 1: Conduct building infrared thermography in a safe, effective and professional manner

Unit Reference Number: L/506/0110

Level: 3

Credit: 6

Unit Summary

This unit is about developing knowledge, understanding and skills to contribute to the health, safety and security of the workplace, developing effective working relationships with others, and conducting building infrared thermography in a professional and ethical manner, complying with organisational and legal requirements at all times

Assessment Guidance

This unit can be assessed using the following method(s):

- Portfolio of evidence

Learning Outcome The learner will:	Assessment Criterion The learner can:
1. Understand the health and safety requirements when undertaking building infrared thermography	1.1 Explain the relevant legal duties for health, safety and security in the workplace
	1.2 Identify the health, safety and security risks that could exist in different locations, and the action to take to minimise or mitigate risks
	1.3 Identify the risks to self which are associated with lone working
	1.4 Explain why it is important to remain alert to the presence of risks in the workplace
	1.5 Explain the importance of personal conduct in maintaining the health, safety and security of yourself or others
	1.6 Explain how to make use of relevant suppliers' and manufacturers' instructions for the safe use of equipment, materials and products
	1.7 Explain who should be informed of any conflicts between different health, safety and security requirements
	1.8 Describe the procedures for different types of emergency
	1.9 Identify the types of suggestions for improving health, safety and security at work that could be made and who should be given them
	1.10 Identify the actions that may be taken to protect clients' property



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2. Understand the nature of professional conduct required when conducting building infrared thermography	2.1 Explain why it is important to promote goodwill and trust when working with others and ways in which this can be achieved
	2.2 Explain how to identify the information you require and the potential sources of such information
	2.3 Describe how to respond to enquiries from others and how to clarify their information needs
	2.4 Explain how to respond to enquiries which are outside your authority or area of expertise
	2.5 Describe the ways in which disputes or differences of opinion should be handled and resolved to minimise offence and maintain respect
	2.6 Describe the formal complaints procedure that covers your work
	2.7 Identify the range of potential conflicts of interest that you may encounter and the action required to manage these
	2.8 Explain why it is important to present a positive personal and professional image when dealing with people and how this can be achieved
	2.9 Describe the ways in which you may develop yourself within your role
	2.10 Describe how to deliver an appropriate level of service to meet client expectations
	2.11 Explain the importance of providing a prompt response to enquiries
3. Understand the legislation, codes of conduct and compliance requirements in relation to building thermography	3.1 Describe the relevant policies and legislation on combating climate change and the reduction of carbon emissions from buildings
	3.2 Describe the relevant legislation covering the energy performance of buildings
	3.3 Describe your specific responsibilities under prescribed codes of conduct and ethical standards
	3.4 Explain why it is important to comply with mandatory and advisory codes of best practice
	3.5 Explain the importance of obtaining and maintaining appropriate professional indemnity insurance (PII) cover and the extent and limitations of this
4. Be able to comply with organisational and legal requirements at all times	4.1 Carry out work in accordance with the relevant legal requirements and advisory and mandatory codes of practice
	4.2 Carry out work in accordance with the auditing and monitoring requirements of the relevant certification organisation(s)
	4.3 Record client contact information in accordance with organisational and legal requirements
	4.4 Identify and maintain appropriate evidence to support your decisions and assumptions when carrying out building infrared thermography



5. Be able to maintain health, safety and security at work	5.1 Take action to mitigate health, safety, security and welfare risks
	5.2 Ensure personal conduct does not endanger the health, safety, security and welfare of self and other people
	5.3 Take action to ensure the protection of client's property and buildings
	5.4 Adhere to workplace policies and suppliers' or manufacturers' instructions for the safe use of equipment, personal protective equipment (PPE), materials and products
	5.5 Identify and implement procedures for different types of emergency
	5.6 Make recommendations for improving health, safety and security in the workplace to the relevant person/s
6. Be able to develop and maintain effective working relationships with colleagues, professionals, clients and others	6.1 Request information from colleagues, professionals, clients and others in a polite, clear and professional manner
	6.2 Identify and use further sources of help when required
	6.3 Deal promptly with enquiries from colleagues, professionals, clients and others and seek clarification where necessary
	6.4 Handle enquiries which are outside own authority or area of expertise
	6.5 Handle and resolve disputes and/or differences of opinion
	6.6 Adhere to the formal complaints procedure when dealing with a complaint
7. Be able to conduct building infrared thermography in a professional manner	7.1 Deal with colleagues, professionals, clients and others in a tactful, courteous and equitable manner
	7.2 Carry out work in accordance with prescribed codes of conduct, ethical standards and recognised good practice
	7.3 Record all evidence to support the assumptions and decisions made during the assessment
	7.4 Demonstrate effective management of work activities, personal and professional development
	7.5 Respond appropriately to any pressure that may affect own judgment
	7.6 Demonstrate delivery of the appropriate level of client service
	7.7 Assess client expectations as to the outcomes of the building infrared thermography or advice process



Unit 2: Understand advanced thermal imaging camera technology and operation

Unit Reference Number: J/506/0123

Level: 4

Credit: 6

Unit Summary

This unit is about developing an advanced knowledge and understanding of thermal imaging camera technologies and operation.

Assessment Guidance

This unit can be assessed using the following method(s):

- Portfolio of evidence
- Exam

Learning Outcome The learner will:	Assessment Criterion The learner can:
1. Understand the advanced principles of infrared thermography	1.1 Describe the fundamental principles of energy and heat
	1.2 Summarise the standard temperature scales and conversions
	1.3 Explain the electromagnetic spectrum in general and the infrared region in particular
	1.4 Describe the key processes of heat transfer by conduction, convection and radiation
	1.5 Evaluate the processes of emittance, reflectance and transmittance
	1.6 Evaluate the principles of heat flow and heat capacity
	1.7 Describe the process of phase changes and latent heat in materials
	1.8 Explain the emissivity of materials and the factors that affect this
	1.9 Explain the differences in reflectivity of specular and diffuse surfaces
	1.10 Explain how material properties are modified by heat, air and moisture flow
	1.11 Explain the key laws of physics as they relate to infrared thermography: <ul style="list-style-type: none">• Kirchoff's Law• Fourier's Law• Newton's Law of Cooling• Stefan Boltzmann's Law



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2. Know the construction, capabilities and limitations of a typical TI camera	2.1 List all the components of an infrared camera
	2.2 Describe the purpose of the components of an infrared camera
	2.3 Explain the purpose of the features of usage of an infrared camera screen display
	2.4 Describe the fittings on, and accessories for, an infrared camera
	2.5 Describe the typical software functions and menu options of an infrared camera
	2.6 Explain the operation of an infrared camera's software functions and menu options
	2.7 Describe the physical limitations of an infrared camera in the domestic and non-domestic built environments
	2.8 Describe how to optimise the capabilities of an infrared camera in both domestic and non-domestic scenarios
	2.9 Explain the storage, maintenance and calibration requirements of an infrared camera
3. Understand the advanced operation and control of a typical TI camera in both domestic and non-domestic built environments	3.1 Describe the ISO 6781-1 General Procedures
	3.2 Describe the environmental conditions necessary for successful infrared thermography
	3.3 Analyse the impact of an infrared camera's operating limitations
	3.4 Explain the controls and menu features required for the advanced operation of an infrared camera
	3.5 Explain how to set up an infrared camera prior to carrying out an advanced thermographic survey
	3.6 Explain how to control an infrared camera during advanced thermographic surveys
	3.7 Describe how to mark the location of a thermographic anomaly/defect
	3.8 Describe the health and safety issues that may arise during the operation of an infrared camera
	3.9 Describe the occasions on which it would not be appropriate to continue with a thermographic survey
4. Know how to conduct an advanced interpretation of thermal images	4.1 Analyse problems and defects that can be identified by an infrared camera in both domestic and non-domestic built environments
	4.2 Describe the situations that can lead to a false interpretation of thermographic images
	4.3 Analyse the information displayed on an infrared camera thermographic image
	4.4 Explain the occasions on which advice would be sought in the interpretation of a thermographic image



Unit 3: Understand domestic building construction, thermal properties and heat loss mechanisms

Unit Reference Number: M/506/0116

Level: 3

Credit: 4

Unit Summary

This unit is about developing a knowledge and understanding of domestic building construction techniques, thermal properties of building elements and heat loss mechanisms.

Assessment Guidance

This unit can be assessed using the following method(s):

- Portfolio of evidence
- Exam

Learning Outcome The learner will:	Assessment Criterion The learner can:
1. Understand the construction of a domestic building	1.1 Explain the purpose of a domestic building
	1.2 List the materials used in the construction of a domestic building
	1.3 Describe the purpose of each of the materials used in a domestic building
	1.4 List the key elements (structural, envelope and fabric) of a domestic building
	1.5 Describe the purpose of each domestic building element and how the building elements are combined in the overall structure of a domestic building
	1.6 Explain how to determine the construction of a domestic building by non-invasive internal and external inspection techniques
	1.7 Describe how changes to a building over time may be determined by comparison with similar properties in the area
	1.8 List the circumstances that can cause rising and penetrating damp in a domestic building
2. Understand the thermal properties of building elements	2.1 Explain how heat is transferred by the processes of conduction, convection and radiation
	2.2 Describe what is meant by 'thermal resistance'
	2.3 Explain how thermal resistance varies with the type of material and its use
	2.4 Describe the relationship between thermal resistance and U-value
	2.5 Describe how U-values are used in determining rates of heat loss from a building



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	2.6 State the typical U-value ranges for each of the key building elements
	2.7 Describe how an element's u-value may be degraded through: <ul style="list-style-type: none"> • anomalies between as-designed and as-built detailing • natural material degradation over time • material degradation with use/modification
3. Understand the processes of heat loss from a building	3.1 List the main heat sources within a domestic building
	3.2 Sketch and quantify in percentage terms the heat flows within and out from a domestic building
	3.3 Describe the difference between a building's 'Asset Rating' and its 'Operational Rating'
	3.4 Explain the impact of geographical location, orientation and exposure on the rates of heat gain and loss to and from a domestic building
	3.5 Explain the term 'Thermal Bridging'
	3.6 List typical thermal bridges in a domestic building
	3.7 Explain the purpose of ventilation in a domestic building
	3.8 Describe the differences between ventilation and infiltration/exfiltration
	3.9 List the key sources of infiltration/exfiltration in a domestic building
	3.10 List the processes of moisture transport in a domestic building
	3.11 Describe impact of excessive moisture in a domestic building
4. Understand problems associated with building occupation	4.1 Describe the key problems associated with the occupation of a domestic property
	4.2 List the sources of moisture in a domestic property
	4.3 Describe the circumstances under which excessive moisture can lead to problems such as damp, condensation and mould
	4.4 List the causes of lack of ventilation within a property
	4.5 Describe the impact of a lack of ventilation within a domestic property



Unit 4: Understand commercial/industrial building construction, thermal properties and heat loss mechanisms

Unit Reference Number: L/506/0124

Level: 3

Credit: 6

Unit Summary

This unit is about developing a knowledge and understanding of commercial and industrial building construction techniques, thermal properties of building elements and heat loss mechanisms.

Assessment Guidance

This unit can be assessed using the following method(s):

- Portfolio of evidence
- Exam

Learning Outcome The learner will:	Assessment Criterion The learner can:
1. Understand the construction of commercial/ industrial buildings	1.1 Explain the types and purposes of commercial/industrial buildings
	1.2 Describe the materials used in the construction of commercial/industrial buildings
	1.3 Describe the purpose of each of the materials used in a commercial/industrial building
	1.4 List the key elements (structural, envelope and fabric) of commercial/industrial buildings
	1.5 Describe the purpose of each commercial/industrial building element and how the building elements are combined in the overall structure of a building
	1.6 Explain how to determine the construction of a commercial/industrial building by non-invasive internal and external inspection techniques
2. Understand the thermal properties of building elements	2.1 Explain how heat is transferred by forced and natural (stack, crossflow) ventilation
	2.2 Describe what is meant by 'thermal resistance', 'thermal mass' and 'thermal inertia'
	2.3 Explain the relationship between 'thermal mass' and 'thermal inertia'
	2.4 Explain how thermal resistance varies with the type of material and its use
	2.5 Describe the factors that may affect the thermal resistance/U-value of a material/element
	2.6 State the typical U-value ranges for each of the key commercial/industrial building elements



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	<p>2.7 Describe how an element's U-value may be degraded through:</p> <ul style="list-style-type: none"> • anomalies between as-designed and as-built detailing • natural material degradation over time • material degradation with use/modification
3. Understand the processes of heat loss from a building	3.1 Describe the main heat loss and cooling sources within a commercial/industrial building
	3.2 Describe how a building's 'Asset Rating' and its 'Operational Rating' are determined
	3.3 Explain the impact of geographical location, orientation and exposure on the rates of heat gain and loss to and from a commercial building
	3.4 Explain the term 'Thermal Bridging'
	3.5 List typical thermal bridges in commercial/industrial buildings
	3.6 Explain the purpose of ventilation in a commercial/industrial building
	3.7 Describe the differences between ventilation and infiltration/exfiltration
	3.8 List the key sources of infiltration/exfiltration in a commercial/industrial building
	3.9 Describe how sources of infiltration/exfiltration can be determined from an air-leakage test
4. Understand problems associated with commercial/ industrial building occupation and operation	4.1 Describe the hazards that may be experienced in the industrial and commercial built environment
	4.2 Explain how to mitigate the risks of working with a thermographic survey team in the industrial and commercial built environment
	4.3 Describe the key problems caused by people working/residing in commercial/industrial properties
	4.4 Explain the difference between comfort heating/cooling and process heating/cooling



Unit 5: Prepare to carry out infrared thermographic assessments of commercial, industrial or domestic buildings

Unit Reference Number: R/506/0125

Level: 4

Credit: 6

Unit Summary

This unit is about developing knowledge, understanding and skills to prepare for and supervise a team of thermographers in carrying out thermographic assessments of commercial, industrial or domestic buildings.

Assessment Guidance

This unit can be assessed using the following method(s):

- Portfolio of evidence

Learning Outcome The learner will:	Assessment Criterion The learner can:
1. Understand the restrictions and limitations of a building thermographic assessment	1.1 Describe the environmental conditions needed to carry out a thermographic survey
	1.2 List sources of information to determine environmental conditions
	1.3 Explain the requirements of ISO 6781 as they apply to the built environment
2. Understand the roles and responsibilities of a thermography team manager/leader	2.1 Describe the characteristics of an effective supervisor
	2.2 Explain the roles and responsibilities of a supervisor in leading and developing a team of thermographers
	2.3 Evaluate the requirements of an employer or client scope of work to develop a thermographic survey plan
	2.4 Analyse the thermographic survey plan to determine the resources required in terms of people, time and equipment
	2.5 Describe the circumstances under which additional advice and expertise would be sought from more experienced colleagues or from company line management
	2.6 Explain how to allocate work to team members based on their training, skills, experience and professional development
	2.7 Describe how to brief the thermography team on the requirements of a thermographic inspection using the thermographic survey plan and other information
	2.8 Explain how to resolve conflicts or conflicting requirements whether from members of the team, time and/or resources
3. Be able to agree and confirm instructions with a client to undertake a building infrared thermographic assessment	3.1 Obtain advance information from the client to draw up and agree the objectives for the thermographic survey
	3.2 Explain to the client the terms and conditions under which the thermographic survey will be carried out
	3.3 Draw up a scope of works based on all information gathered and agreed
	3.4 Present the scope of works to the client and agree the fee for carrying out and reporting on the thermographic survey



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	3.5 Describe the circumstances that could prevent a thermographic assessment from taking place
	3.6 Explain to the client why a thermographic survey cannot proceed
	3.7 Offer a client an alternative arrangement should it not be possible to carry out a thermographic survey on the agreed date
4. Be able to prepare for an infrared thermographic assessment of buildings	4.1 Draw up a method statement for the survey based on the agreed scope of works
	4.2 Prepare or refresh the survey equipment checklist based on the method statement
	4.3 Conduct a web-based survey of the property and its surrounding areas to determine possible constraints to the thermographic assessment and potential health and safety issues
	4.4 Explain the purpose of all the equipment needed to carry out the thermographic survey
	4.5 List the checks to be carried out to ensure proper functionality of all survey and supporting equipment
	4.6 Conduct pre-usage checks on all survey and supporting equipment
	4.7 Confirm whether environmental conditions are likely to be suitable for the survey
	4.8 Draw up a preliminary health and safety risk assessment for the property visit
5. Be able to prepare a team of thermographers to carry out a thermographic assessment of a commercial/ industrial property	5.1 Develop a thermographic survey plan based on an employer or client scope of work
	5.2 Determine the resources required to satisfy the scope of work in terms of people, time and equipment
	5.3 Allocate work to team members to carry out the thermographic survey plan based on their training, skills, experience and professional development
	5.4 Brief the thermographic survey team on the requirements of the thermographic survey plan and other information
	5.5 Resolve any conflicts within members of the team, or from time and/or resource constraints



Unit 6: Carry out infrared thermographic assessments of commercial, industrial or domestic buildings

Unit Reference Number: Y/506/0126

Level: 4

Credit: 12

Unit Summary

This unit is about developing knowledge, understanding and skills to carry out a thermographic assessment of commercial/industrial/domestic buildings.

Assessment Guidance

This unit can be assessed using the following method(s):

- Portfolio of evidence

Learning Outcome The learner will:	Assessment Criterion The learner can:
1. Be able to attend property to carry out a thermographic assessment	1.1 Conduct a risk assessment at the property to: <ul style="list-style-type: none"> • identify and record risks and mitigating measures • identify any circumstances at the property that prevent the thermographic survey from continuing
	1.2 Introduce themselves to the client and verify their credentials before commencing the inspection
2. Be able to supervise a team to carry out a building thermographic assessment	2.1 Confirm that all infrared cameras are set up and operating correctly together with their accessories/other equipment
	2.2 Assist team members to identify and correct any basic fault condition(s) that occur with their infrared camera or its accessories and other equipment
	2.3 Ensure team members use their infrared cameras and accessories/other equipment correctly to undertake a methodical thermographic survey of commercial/industrial buildings as agreed in the scope of works
	2.4 Take action as necessary to prevent, minimise or control poor data and error sources
	2.5 Identify any unprofessional performance by any team member
	2.6 Discuss the reasons for the unprofessional performance
	2.7 Agree solutions that will improve the team member's performance
	2.8 Use generally recognised advanced techniques for infrared thermography of buildings and diagnosis of irregularities in accordance with established procedures



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	2.9 Recognise, take account of and correct the causes of poor quality or anomalous readings
	2.10 Identify and, where necessary, seek advice on areas of concern
3. Be able to create, collate and maintain a complete and accurate record of all information collected during a building infrared thermographic assessment	3.1 With the aid of the team, carry out a basic site survey of the commercial/industrial building and its immediate local area to record its location, alignment, topography, site layout, dimensions and other relevant information
	3.2 Ensure the team produce written and photographic records of the information collected during the building thermographic assessment
	3.3 Create a record of activities while carrying out the scope of work and any additional actions deemed necessary to complete the thermographic survey
	3.4 Maintain a database of results from the thermographic survey and trends observed



Unit 7: Produce infrared thermographic assessment reports on commercial, industrial or domestic properties

Unit Reference Number: D/506/0127

Level: 4

Credit: 8

Unit Summary

This unit is about developing knowledge, understanding and skills to create and deliver reports on infrared thermographic assessments of commercial, industrial and domestic buildings.

Assessment Guidance

This unit can be assessed using the following method(s):

- Portfolio of evidence

Learning Outcome The learner will:	Assessment Criterion The learner can:
1. Be able to prepare a thermographic assessment report	1.1 Describe the layout of an advanced building thermographic assessment report
	1.2 Assemble and collate information from own and team member thermographic survey records and from other relevant and reliable sources
	1.3 Carry out an advanced analysis of information obtained from the thermographic surveys and from other relevant and reliable sources
	1.4 Carry out on-site infrared camera image post-processing where necessary
	1.5 Carry out advanced infrared camera image post-processing where necessary
	1.6 Identify thermographic features from the survey that should be included in the report
	1.7 Produce a thermographic assessment report that satisfies the agreed Scope of Work and meets accepted professional practice
	1.8 Develop recommendations for basic corrective actions for repair and remediation
	1.9 Check the report to ensure it is clear, complete and satisfies the agreed Scope of Work and accepted professional practice
2. Be able to prepare team member performance/appraisal reports	2.1 Identify team member strengths and areas for development
	2.2 Create a progress/appraisal report on team member performance
	2.3 Discuss team member's progress/appraisal report with team member



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	2.4 Agree areas for development through additional training or CPD courses with team member
3. Be able to present a thermographic assessment report to a client in a professional manner	3.1 Issue the report to the client
	3.2 Explain to the client the findings and recommendations contained within the report and their implications
	3.3 Respond to any questions or queries from the client on the report, its findings or recommendations
4. Be able to maintain and preserve thermographic assessment reports	4.1 List the reasons for safely retaining and maintaining records that can be accessed by external/independent authorities as required in the future
	4.2 Ensure that the authorship, validity and date of production of the reports can be audited by an independent authority as required in the future
	4.3 Maintain and preserve records and reports ensuring that they are protected against physical (theft, fire, flood and technological (hard drive failure, virus, malware) risks



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