

apprenticeship FRAMEWORK

Building Energy Management Systems (non-statutory) (Wales)

IMPORTANT NOTIFICATION FOR ALL APPRENTICESHIP STARTS FROM 14 OCTOBER 2016

Modifications to SASW came into effect on 14 October 2016. These changes relate to the **Essential Skills and Employer Rights and Responsibilities** requirements of a framework and they **ONLY** apply to new Apprenticeship starts on, or after, 14th October. Apprenticeship starts before this date must continue to meet the 2013 SASW requirements for Essential Skills and Employer Rights and Responsibilities.

For more details of the changes and how they will affect new apprenticeship starts, please read the following preface page to the framework document. NB: Please check the "Revising a Framework" section for information on any additional changes that may have been made to this framework.

Latest framework version?

Please use this link to see if this is the latest issued version of this framework:

afo.sscalliance.org/frameworkslibrary/index.cfm?id=FR03691

Issue date: 09 December 2015

Published by
SummitSkills

apprenticeship
FRAMEWORKS ONLINE
www.afo.sscalliance.org

CHANGES TO REQUIREMENTS FOR APPRENTICESHIP STARTS FROM 14TH OCTOBER 2016

These changes relate to the Essential Skills and Employer Rights and Responsibilities requirements of a framework and they ONLY apply to new Apprenticeship starts on, or after, 14th October 2016. Apprenticeship starts before this date must continue to meet the 2013 SASW requirements for Essential Skills and Employer Rights and Responsibilities.

Alternatives for Essential Skill qualifications

Foundation apprenticeships (Level 2): Where Essential Skills qualifications are specified in a foundation apprenticeship framework (Level 2), the apprenticeship framework must specify as a Welsh certificate requirement, the acceptance of one of the following recognised proxy qualifications.

For Communication:

- a. GCSE or iGCSE qualification in English language or literature to at least grade G (Level 1 equivalent); or
- b. O Level qualification in English language or literature to at least grade E; or
- c. A/AS Level qualification in English language or literature to at least grade E; or
- d. SCQF Level 4 – Communication Core Skills (Oral communication and written communication); or
- e. SQA National 4 English; or
- f. Functional Skills or Key Skills literacy qualifications in English provided the proxy qualification(s) attained are at Level 1 or above.

For Application of Number:

- a. GCSE or iGCSE qualification in Mathematics to at least grade G (Level 1 equivalent); or
- b. O Level qualification in Mathematics to at least grade E; or
- c. A/AS Level qualification in Mathematics to at least grade E; or
- d. SCQF Level 4 – Numeracy Core Skill (Graphical Information and using number); or
- e. SQA National 4 Mathematics ; or
- f. Functional Skills or Key Skills numeracy qualifications in Mathematics provided the proxy qualification(s) attained are at Level 1 or above.

Apprenticeships (Level 3): Where Essential Skills qualifications are specified in an apprenticeship framework (Level 3), the apprenticeship framework must specify as a Welsh certificate requirement, the acceptance of one of the following recognised proxy qualifications.

For Communication:

- a. GCSE or iGCSE qualification in English language or literature to at least grade C (Level 2 equivalent); or
- b. O Level Qualification in English language or literature to at least grade C; or
- c. A/AS Level qualification in English or literature to at least grade E; or
- d. SCQF Level 5 – Communication Core Skills (Oral communication and written communication); or
- e. SQA National 5 English; or
- f. Functional Skills or Key Skills literacy qualifications in English provided the proxy qualification(s) attained is at Level 2 or above.

For Application of Number:

- a. GCSE or iGCSE qualification in Mathematics to at least grade C (Level 2 equivalent); or
- b. O Level Qualification in Mathematics to at least grade C; or
- c. A/AS Level qualification in Mathematics to at least grade E; or
- d. SCQF Level 5 – Numeracy Core Skill (Graphical information and using number); or
- e. SQA National 5 Mathematics; or
- f. Functional Skills or Key Skills numeracy qualifications in Mathematics provided the proxy qualification(s) attained are at Level 2 or above.

Higher Apprenticeships (Levels 4-7): Essential Skills requirements are as for an apprenticeship frameworks at Level 3.

CHANGES TO REQUIREMENTS FOR APPRENTICESHIP STARTS FROM 14TH OCTOBER 2016

Employer Rights and Responsibilities (ERR)

The final modification to SASW is to Employer Rights and Responsibilities (ERR) which is no longer compulsory in frameworks. Please refer to the Employer Rights and Responsibilities section within the framework document to confirm specific requirements.

Additional Information

It should be noted that SASW has also been modified to reflect existing improvements to Essential Skills Wales Qualifications. These improvements to ESW qualifications were signalled by the revised names:

- Essential Skills Wales Communication is now Essential Communication Skills (still 6 credits in size)
- Essential Skills Wales Application of Number Skills is now Essential Application of Number Skills (still 6 credits in size)
- Essential Skills Wales Information Communication Technology Skills is now Essential Digital Literacy Skills (still 6 credits in size)

Whilst there have been some amendments to the content of ESW qualifications, the most significant change has been to the assessment methodology for these qualifications.

From 1 January 2016, all new starts have had to follow the revised Essential Skill qualifications.

The updated version of SASW, and guidance documents, can be accessed here:

<http://gov.wales/topics/educationandskills/skillsandtraining/apprenticeships/providers/?lang=en&dgd>

Over the coming months, the Essential Skills section within AFO will be amended to reflect the SASW modifications and all current frameworks will be updated and reissued to incorporate these changes. In the meantime, if you are in any doubt as to the requirements of any framework then please contact the relevant Issuing Authority.

Building Energy Management Systems (non-statutory) (Wales)

Contents

Framework summary	5
Framework information	6
Contact information	7
Revising a framework	8
Purpose of the framework	9
Entry conditions	10
Level 3: Building Energy Management Systems	12
Pathway 1: Building Energy Management Systems	13
Equality and diversity	21
On and off the job training	22
Wider key skills	25
Additional employer requirements	26

Framework summary

Building Energy Management Systems (non-statutory)

Building Energy Management Systems

Pathways for this framework at level 3 include:

Pathway 1: Building Energy Management Systems

Competence qualifications available to this pathway:

N/A

Knowledge qualifications available to this pathway:

N/A

Combined qualifications available to this pathway:

B1 - Level 3 NVQ Diploma in Building Energy Management Systems

This pathway also contains information on:

- Employee rights and responsibilities
- Essential skills

Framework information

Information on the Publishing Authority for this framework:

SummitSkills

The Apprenticeship sector for occupations in electrical and electronic servicing, plumbing, heating and building services (summarised as electrotechnical; plumbing, heating and ventilating; refrigeration and air conditioning).

Issue number: 2	This framework includes: Level 3
Framework ID: FR03691	
Date this framework is to be reviewed by: 01/04/2020	
	This framework is for use in: Wales

Short description

This Apprenticeship (Level 3) for occupations in the Building **Energy** Management Systems industry is designed to meet the competence requirements of the industry.

Successful completion of this Apprenticeship (Level 3) framework reflects the ability to identify and use relevant understanding, methods and skills to complete tasks and address problems that, while well defined, have a measure of complexity. This includes taking responsibility for initiating and completing tasks and procedures, as well as exercising autonomy and judgement within parameters. It also reflects awareness of different perspectives or approaches within an area of study or work.

This Level 3 framework can be completed within 42 months.

Job roles -

- Building **Energy** Management Systems **Installation** Technician
- Building **Energy** Management Systems **Maintenance** Technician
- Building **Energy** Management Systems **Commissioning** Technician

Contact information

Proposer of this framework

N/A

Developer of this framework

Name: Tony Beecher
Organisation: Summit Skills
Organisation type: Sector Skills Council
Job title: Learning & Development Programme Manager
Phone: 020 7313 4890
Email: tony.beecher@summitskills.org.uk
Postal address: Summit Skills Limited
Lincoln House
137-143 Hammersmith Road
London
W14 0QL
Website: www.summitskills.org.uk

Issuing Authority's contact details

Issued by: SummitSkills
Issuer contact name: Nigel Hollett
Issuer phone: 020 7313 4890
Issuer email: enquiries@summitskills.org.uk

Revising a framework

Contact details

Who is making this revision: Tony Beecher
Your organisation: SummitSkills
Your email address: tony.beecher@summitskills.org.uk

Why this framework is being revised

As this framework is over 4 years old a review has taken place of any changes needed to this document and this includes new contact details for the developers and issuing authority to make sure the framework meets or exceeds the requirements of apprenticeships across the UK.

Summary of changes made to this framework

Contact details have been amended as those listed have left SummitSkills, changes made to ERR evidence requirements, additional progression opportunities and additional qualifications have been added with details below

Qualifications removed

(no information)

Qualifications added

Level 3 Award in the Fundamental Principles and Requirements of Environmental Technology Systems (BPEC 600/6377/4) LCL 600/5715/4, Pro Qual 600/6253/8)

Qualifications that have been extended

(no information)

Purpose of this framework

Summary of the purpose of the framework

This framework is designed to provide individuals with the opportunity to develop competencies that are needed to carry out job roles and responsibilities associated with Building Energy Management Systems including relevant:

- Sustainable Buildings Management
- Environmental Technologies
- Technological requirements and changes
- Statutory and Non-Statutory Regulations & Requirements

The following job roles will be covered in the framework:

- Building **Energy** Management Systems **Installation** Technician
- Building **Energy** Management Systems **Maintenance** Technician
- Building **Energy** Management Systems **Commissioning** Technician

Aims and objectives of this framework (Wales)

The aim of this framework is to ensure that the Apprenticeship (Level 3) programme delivers:

- The Skills and Knowledge required by the industry to achieve competence
- Job related skills that will be used in the working environment
- Transferable Skills
- Career progression

Employers have endorsed this programme as it delivers qualified competent employees and improves productivity and retention.

Further information can be found at www.summitskills.org.uk

Entry conditions for this framework

A career in the Building Energy Management Systems (BEMS) industry will not only reward an apprentice's potential, but also offer opportunities to enhance their technical capability. The industry always needs individuals of appropriate ability, and in return offers a varied and rewarding career in a challenging working environment.

Although there are generally no nationally laid-down minimum entry or previous experience requirements to undertake the Apprenticeship (Level 3) in Building **Energy** Management Systems, the following selection criteria may be used as guidance.

The programme is likely to be suitable for individuals who:

- Have an aptitude for technical subjects and/or are practically minded
- Have an interest in technology
- Can demonstrate an ability to solve practical problems

Other selection criteria may include:

- Motivation to succeed
- Willingness to learn and apply that learning in the workplace/job role
- Enthusiasm and attitude to work
- Ability to demonstrate that they have the potential to achieve the qualifications which are part of this Apprenticeship (Level 3) programme
- Ability to communicate effectively with a range of people
- Being numerate and literate
- Good colour vision to recognise colour coded wires and components
- Ability to work at heights or in confined spaces
- Willingness to work outside
- Willingness to work unsociable hours
- Willingness to undergo a Criminal Records Bureau (CRB) check when required

Examples of formal qualifications that could indicate that an applicant has the potential to progress into the Apprenticeships in Building **Energy** Management Systems are:

- Welsh Baccalaureate Intermediate Diploma
- Completion of a 'Pathway to Apprenticeship' in Engineering
- Successful completion of a Foundation (Level 2) framework in the Building Services Engineering Sector
- Completion of a 'GCSE grade A-C in each of the following:- a communication subject, maths and either a science or technical-based subject
- Level 2 GNVQs in relevant vocational/technical subjects
- A Level 2 'Access to Building Services Engineering' qualification

No individual should be refused access to an initial assessment on the basis of educational qualifications alone. The ultimate responsibility for selection will rest with the individual employer.

Level 3

Title for this framework at level 3

Building Energy Management Systems

Pathways for this framework at level 3

Pathway 1: Building Energy Management Systems

Level 3, Pathway 1: Building Energy Management Systems

Description of this pathway

Building **Energy** Management Systems - Installing, inspecting, testing and commissioning energy management systems in commercial and industrial buildings and structures. - 143 credits in total

Entry requirements for this pathway in addition to the framework entry requirements

No additional requirements

Job title(s)	Job role(s)
Building Energy Management Systems Maintenance Technician	The servicing of building energy management systems in accordance with a particular design and specification. The Maintenance Technician is responsible for ensuring the energy management system continues being safe, technically correct and efficient.
Building Energy Management Systems Commissioning Technician	The commissioning of building energy management systems in accordance with a particular design and specification. The Commissioning Technician is responsible for the commissioning of energy management systems to ensure system functionality post installation.
Building Energy Management Systems Installation Technician	The installation and servicing of building energy management systems in accordance with a particular design and specification. The installation technician is responsible for ensuring the energy management system is installed safely, technically correct and efficient.

Qualifications

Competence qualifications available to this pathway

N/A

Knowledge qualifications available to this pathway

N/A

Combined qualifications available to this pathway

B1 - Level 3 NVQ Diploma in Building Energy Management Systems					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
B1a	600/1577/9	EAL	125	854	N/A

Relationship between competence and knowledge qualifications

This framework requires the completion of the combined qualification B1a identified in the combined qualifications section B1 above.

Qualification Title - Level 3 NVQ Diploma in Building Energy Management Systems which has:

Knowledge Units

- Understanding Health and Safety legislation, practices and procedures _Installing and maintaining electrotechnical systems and equipment (H/602/2523) **Unit Credit Value 6**
- Understanding environmental legislation, working practices and the principles of environmental technology systems M/602/2525 **Unit Credit Value 4**
- Understanding the practices and procedures for overseeing and organising the work environment _Electrical Installation J/602/2532 **Unit Credit Value 6**
- Plan and prepare for the installation of Building Energy Management Systems A/502/9273 **Unit Credit Value 6**
- Understanding the practices and procedures for the planning and preparation for the installation of building energy management systems J/502/9244 **Unit Credit Value 14**
- Understanding the practices and procedures for the installation of Building Energy Management Systems M/502/9268 **Unit Credit Value 10**
- Understanding the practices & procedures for the construction of Building Energy Management System control panels T/502/9269 **Unit Credit Value 11**
- Understanding the principles, practices and procedures for the inspection, testing and commissioning of Building Energy Management Systems and equipment in buildings and structures K/502/9270 **Unit Credit Value 8**
- Understanding the principles, practices & procedures used to diagnose & correct electrical faults in Building Energy Management Systems, equipment and components installed in buildings and structures M/502/9271 **Unit Credit Value 11**
- Understanding the electrical principles associated with the design, building, installation and maintenance of electrical equipment and systems A/602/2589 **Unit Credit Value 12**

Knowledge Element = 88 credits

Competence Units:

- Diagnose and correct electrical faults in Building Energy Management Systems and components in buildings and structures D/502/9279 **Unit Credit Value 6**
- Building Energy Management Systems Occupational Competence T/502/9272 **Unit Credit Value 4**
- Installing electrical services of Building Energy Management Systems F/502/9274 **Unit Credit Value 6**
- Prepare for and construct control panels for building energy management systems R/502/9277 **Unit Credit Value 6**
- Inspect, test and commission Building Energy Management Systems and equipment in buildings, and structures Y/502/9278 **Unit Credit Value 6**
- Applying Health and Safety legislation and working practices _Installing and Maintaining Electrotechnical Systems and Equipment (R/602/2596) **Unit Credit Value 3**
- Applying environmental legislation, working practices and the principles of environmental technology systems H/602/2599 **Unit Credit Value 3**
- Overseeing and organising the work environment _Electrical Installation (K/602/2605) **Unit Credit Value 3**

Competence Elements = 37 credits

Total Qualification = 125 credits

For further qualification details refer to: <http://register.ofqual.gov.uk/Qualification> and search for qualification or unit number.

Transferable skills (Wales)

Essential skills (Wales)

	Minimum level	Credit value
Communication	2	6
Application of numbers	2	6
IT	2	6

Progression routes into and from this pathway

Progression routes into this pathway:

Applicants may come from a range of routes including:

- Welsh Baccalaureate Intermediate Diploma
- Completion of a 'Pathway to Apprenticeship' in Engineering
- Successful completion of a Foundation Level 2 framework in the Building Services Engineering Sector
- Work or work experience
- Training and/or experience which could include a portfolio showing what they have done
- Academic qualification(s) such as three GCSEs grades A-C in each of the following:- a communication subject, maths and either a science or technical-based subject
- Achievement of Essential Skills
- Level 2 GNVQs in relevant vocational/technical subjects
- A Level 2 'Access to Building Services Engineering' qualification

No individual should be refused access to an initial assessment on the basis of educational qualifications alone. The ultimate responsibility for selection will rest with the individual employer

Progression routes out of this pathway:

On successful completion of the Apprenticeship (Level 3) in Building Energy Management Systems an apprentice will have the skills, knowledge and qualifications to:

- Register on an appropriate Certification Scheme
- Progress to relevant Level 4/5 qualifications e.g. Building Services Engineering Technology & Project Management or Foundation Degree in Engineering
- Progress onto the Level 6 Apprenticeships related to this field such as in Building Services

Engineering Technology & Project Management

- Progress in their career with further training into job roles such as Technician, System Designer, Estimator, Project/Contracts Manager, Site/Workshop Supervisor/Manager, Chartered Engineer, Sales Engineer or Commercial Manager

Further career guidance can be found at: www.summitskills.org.uk/careers

UCAS points for this pathway: N/A

Employee rights and responsibilities

The Employee Rights and Responsibilities (ERR) elements identified below can be achieved through an induction programme, in combination with the EAL(600/1577/9) Level 3 NVQ Diploma in Building Energy Management Systems qualification into which they are integrated and signposted. The ERR elements will be evidenced by issuing a qualification achievement certificate plus the declaration made when claiming for the apprenticeship certificate.

The delivery and assessment of ERR must be designed so that the apprentice:

1. knows and understands the range of employer and employee statutory rights and responsibilities under Employment Law and that employment rights can be affected by other legislation as well. This should cover the apprentice's rights and responsibilities under the Disability Discrimination Act, other relevant equalities legislation and Health and Safety, together with the responsibilities and duties of employers;
2. knows and understands the procedures and documentation in their organisation which recognise and protect their relationship with their employer. Health and Safety, and Equality and Diversity training must be an integral part of the apprentice's learning programme;
3. knows and understands the range of sources of information and advice available to them on their employment rights and responsibilities. Details of Access to Work and Additional Learning Support must be included in the programme;
4. understands the role played by their occupation within their organisation and industry;
5. has an informed view of the types of career pathways that are open to them;
6. knows the types of representative bodies and understands their relevance to their industry and organisation, and their main roles and responsibilities;
7. knows where and how to get information and advice on their industry, occupation training and career;
8. can describe and work within their organisation's principles and codes of practice;
9. recognises and can form a view on issues of public concern that affect their organisation and industry

The remaining sections apply to all levels and pathways within this framework.

How equality and diversity will be met

The nature of the work means that the Building Management Systems sector is not a traditional career choice for women, but women do qualify and work successfully in the industry and this is encouraged. We are continuing to work with the UK Resource Centre for Women in Science, Engineering and Technology and Platform 51 (formerly the YWCA) to promote the opportunities for women working in the building services engineering sector.

SummitSkills will have overall responsibility for the development and review of the framework and for monitoring equality of opportunity, primarily by the analysis of the National Apprenticeship Service data.

There should be open recruitment of apprentices who meet the selection criteria, regardless of gender, ethnic origin, religion/belief, sexual orientation or disability .

All partners involved in the delivery of the apprenticeship and employers must be committed to a policy of equal opportunities and must have a formal equal opportunities policy and procedures in place.

Employers/providers must be able to demonstrate that there are no overt or covert discriminatory practices in selection and employment. All promotional, selection and training activities must comply with relevant legislation, such as the Equality Act 2010.

<http://www.equalityhumanrights.com/advice-and-guidance/new-equality-act-guidance/>

Providers will monitor equality of opportunity practice and procedures within their own organisation and take positive action when necessary. It is also recommended that employers/providers conduct an exit interview if the apprentice leaves the programme before completion.

On and off the job training (Wales)

Summary of on- and off-the-job training

Overview of Building Energy Management Systems

Qualification Total - 854 hrs (Knowledge elements 774hrs + Competence elements 80hrs)

Essential Skills (ES) - 135 hrs (notional value of 45 hrs per ES x 3, which can be offset if previously completed)

Mentoring - 322 hrs (based on 46 wks x 2 hrs per full year over 3.5 years)

Total minimum Training Hours for this framework is 1311 hrs

Off-the-job training

Building Energy Management Systems

Minimum total of off-the-job Training Hours is 989 hrs over 42 months

- Yr 1 - 282 hrs
- Yr 2 - 282 hrs
- Yr 3 - 282 hrs
- Yr 4 (6 months) - 143 hrs

How this requirement will be met

Training Hours will be achieved through clear and specific outcomes which contribute directly to the successful completion of the framework, and these may include accredited and non-accredited elements of the framework.

Training Hours will be delivered through one or more of the following methods: individual and group teaching; e-learning; distance learning; feedback and assessment; guided study. All Training Hour delivery will take place during contracted working hours and while working under an Apprenticeship Agreement.

Recognition of prior learning (RPL) can be made if achieved within the previous 5 years. As examples of previous experience will vary it will be the responsibility of the Awarding Bodies to agree adjustments to the learning programmes with Training Providers and Employers. Summitskills reserves the right to audit centres regarding RPL and recommend further training

if it is felt the adjustments are not suitable.

For learners who have followed a WAG funded apprenticeship programme a simple declaration from the Training Provider is suitable confirmation of the depth and quality of the training hour delivery. The Training Provider would then keep evidence such as individual learning plans, progress reviews, attendance statistics and assessment reports which could be inspected should the need arise.

On-the-job training

Building Energy Management Systems

Minimum recommended total on-the-job Training Hours is 322 hrs over 42 months

- Yr 1 - 92
- Yr 2 - 92
- Yr 3 - 92
- Yr 4 - 46 (based on 6 months)

These are the minimum number of Training Hours that should be allocated for the apprentice to gather evidence in accordance with the requirements of the competence qualification and mentoring.

How this requirement will be met

Training Hours will be achieved through clear and specific outcomes which contribute directly to the successful achievement of the framework and these may include accredited and non-accredited elements of the framework.

Training Hours will be delivered through one or more of the following methods: coaching; mentoring; feedback and assessment; collaborative/networked learning with peers. All Training Hour delivery will take place during contracted working hours and while working under an Apprenticeship Agreement.

Recognition of prior learning (RPL) can be made if achieved within the previous 5 years. As examples of previous experience will vary it will be the responsibility of the Awarding Bodies to agree adjustments to the learning programmes with Training Providers and Employers. Summitskills reserves the right to audit centres regarding RPL and recommend further training if it is felt the adjustments are not suitable.

For learners who have followed a WAG funded apprenticeship programme a simple declaration from the Training Provider is suitable confirmation of the depth and quality of the training hour delivery. The Training Provider would then keep evidence such as individual learning plans,

progress reviews, attendance statistics and assessment reports which could be inspected should the need arise.

Wider key skills assessment and recognition (Wales)

Improving own learning and performance

There is no requirement for apprentices to provide evidence they have achieved the Wider Key Skill of **Improving own learning and performance**. However, it should be noted that the content, delivery and assessment of the combined qualifications within the Apprenticeship (Level 3) frameworks will provide an opportunity for the apprentice to demonstrate they have the ability, to improve their own learning and performance in the work place and training environment.

Working with others

There is no requirement for apprentices to provide evidence they have achieved the Wider Key Skill of **Working with others**. However, it should be noted that the content, delivery and assessment of the combined qualifications within the Foundation (Level 2) and Apprenticeship (Level 3) frameworks will provide an opportunity for the apprentice to demonstrate they have the ability, to work with others in the work place and training environment.

Problem solving

There is no requirement for apprentices to provide evidence they have achieved the Wider Key Skill of **Problem Solving**. However, it should be noted that the content, delivery and assessment of the combined qualifications within the Foundation (Level 2) and Apprenticeship (Level 3) frameworks will provide an opportunity for the apprentice to demonstrate they have the ability, to solve theoretical and practical problems in the work place and training environment.

Additional employer requirements

Although not a requirement for issuing an "Apprenticeship Completion Certificate", employers in the building services engineering sector **encourage** organisations that are delivering a learning and assessment programme for this Apprenticeship (Level 3) Framework to integrate the ***Level 3 Award in the Fundamental Principles and Requirements of Environmental Technology Systems*** (City & Guilds 600/0701/1, EAL 600/0665/1, BPEC 600/6377/4) LCL 600/5715/4, Pro Qual 600/6253/8) into their delivery models.

It should be noted that the delivery of this qualification will **not** attract funding.

apprenticeship
FRAMEWORKS ONLINE

For more information visit
www.afo.sscalliance.org