

Annex A: Proposal Template

Proposal Template to Develop Northern Ireland Apprenticeship and Traineeship Frameworks

This proposal template will provide assurance, at a pre-development stage, that each proposal will likely fully meet the requirements of a traineeship or apprenticeship.

It should be completed by a Sectoral Partnership to propose the development of Northern Ireland Traineeship or Apprenticeship Frameworks for a particular occupational area, signed by the Chair, and submitted to the Department for consideration.

This template must be submitted to DfE for approval, in tandem with an associated workplan, as part of the process for passing Gateway 1. No development work should commence until the Department has approved in writing to the SP Chair.

Please complete ALL sections of the template.

Northern Ireland Apprenticeship and Traineeship Framework Development Proposal

Sectoral Partnership

Built Environment Sector Partnership (BESP)

Proposed Occupational Area to be developed (including pathways within it).

1. Please provide a summary of the occupational area, including typical roles and responsibilities, with an indication of main competencies required.

This Apprenticeship Framework for Plumbing & Heating is designed to provide individuals with the opportunity to develop competencies that are needed to carry out job roles and responsibilities associated with the **installation and/or maintenance of hot and cold water, central heating, drainage and weathering systems in commercial, industrial and residential buildings** including:

- Technological requirements and changes
- Statutory and Non- Statutory Regulations & Requirements
- Working practices in accordance with Health and Safety requirements
- Inspection, testing and commissioning procedures
- Work on Electrical Systems associated with plumbing systems

The aim of this framework proposal is to ensure that the delivery programme includes:

- The Skills and Knowledge required by the industry to achieve competence
- Job related skills that will be used in the working environment
- Knowledge and skills aligned to working practices, relevant statutory and non-statutory regulations
- The basis for career progression

The main competencies of the Plumbing/Heating Apprentice at L3:

- Apply health and safety and environmental legislation
- Establish and maintain relationships
- Coordinate a work site
- Perform electrical work on mechanical building services systems
- Install and test domestic plumbing and heating systems
- Service and maintain domestic plumbing and heating systems
- Inspect and pre-commission domestic plumbing and heating systems
- Commission domestic plumbing and heating systems
- Decommission domestic plumbing and heating systems
- Install sheet weathering protection
- Complete/pass the Domestic Plumbing and Heating Final Competence Assessment

	<p>The Framework has 3 pathways:</p> <ul style="list-style-type: none"> • Pathway 1 - Domestic Plumbing and Heating (Oil-Fired, Solid Fuel or Environmental options) • Pathway 2 - Domestic Plumbing and Heating (Gas-Fired Warm Air Appliances) • Pathway 3 - Domestic Plumbing and Heating (Gas- Fired Water and Central Heating Appliances) where the candidate undertakes <p>Pathway1 includes:</p> <ul style="list-style-type: none"> • Install and Commission Fuel Systems; Oil • Install and Commission Fuel Systems; Solid Fuel • Install and Commission Fuel Systems; Emergent Technologies <p>Pathway 3 includes:</p> <ul style="list-style-type: none"> • Install and Commission Fuel Systems; Gas (ACS) <p>Full details of the units in Pathways 1 and 3 are included in Annex 1.</p> <p>Competence in a fuel option (as shown above) must meet the minimum standards laid down by the appropriate body:</p> <ul style="list-style-type: none"> • OFTEC (Oil) • HETAS (Solid Fuel) • MCS (Emergent Technologies) • Gas Safe (Gas) <p>On achievement of all component parts of the Framework the candidate will receive full and separate registration/recognition with the appropriate body.</p>
<p>2. Where related occupations share significant common skills and knowledge requirements more than one pathway should be included. Please set out clearly how they</p>	<p>There are three main industries in the Building Services (BSE) Sector. These are:</p> <ul style="list-style-type: none"> • Electrical – this includes Electrotechnical and Electrical Installation where the terms are interchangeable • Domestic Plumbing & Heating (DP&H) • Heating Ventilating Air Conditioning & Refrigeration (HVACR) <p>All three industries have the following common areas of skills and knowledge:</p> <ul style="list-style-type: none"> • Apply health and safety and environmental legislation • Establish and maintain relationships • Coordinate a work site

Revised V03

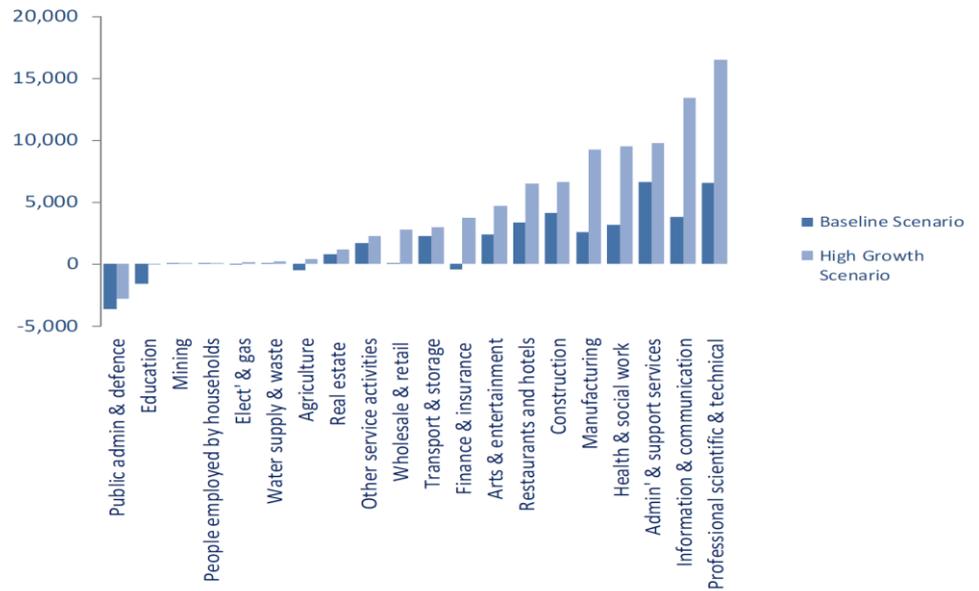
<p>are distinct from each other in terms of roles, responsibilities and competencies required.</p>	<p>These are applied in the specific industry context but map back to a common standard (NOS).</p> <p>In addition, the electrical industry was the main developer of the following area of skills and knowledge:</p> <ul style="list-style-type: none">• Install enclosures for electrical cables, conductors and wiring systems <p>This requirement is relevant to:</p> <ul style="list-style-type: none">• DP&H – for work on central heating systems, boilers, showers etc.• HVACR – for work on electrical components, wiring compressors, thermostats, control systems etc <p>Again, this is applied in the specific industry context but maps back to a common standard (NOS).</p>
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Last review date	Framework No 316 Issue 5: 06/13
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<p>Rationale for development</p> <p>Please provide detail regarding the need for development for this framework. This evidence may include (but should not be limited to);</p> <ul style="list-style-type: none">• demand (existing occupancy)	<p>The number of new Plumbing and Heating Apprentices (yearly) is estimated at XXX</p> <p>The total number of Plumbing and Heating Apprentices currently in training (years 1-4) is estimated at XXX</p> <p>Source:</p> <p>The Skills Barometer (see below) shows us that Construction is likely to show a total employment change of around 6000 between now and 2026.</p>
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- Skills Barometer and other skills forecasts
- identified gaps in existing standards and frameworks
- changes to working practices / work context
- technological changes
- new regulations or legislative requirements
- government policy priorities
- evidenced demand across a sector (above and beyond existing occupancy)

Figure 1: Total employment change 2016-26 (by 1 digit SIC¹)



Source: Northern Ireland 2017 Skills Barometer: Skills in Demand: Summary Report (DfE: June 2017) - P4

If we assume that BSE contributes 20% (1000 new recruits) of that and, further, that plumbing and heating contributes 30% (300 new recruits), then it is clear there is an ongoing and growing need to provide a suitable, recognised and formal training/development pathway for Plumbing and Heating apprentices.

Note that these figures only apply to construction sector and do not include those organisations working solely in Plumbing and Heating. This means that the estimated figure of 300 recruits is the MINIMUM level of sectoral requirement.

In addition, we also know that a strong performing construction and housebuilding sector suggests a strong Plumbing and Heating industry. More specifically we know that:

The recovery in the Northern Ireland construction industry continued last year, with an estimated rise in output of 11% to just under £2.9bn in 2015 prices This was the best outturn since 2008. The public housing sector remained buoyant with a third consecutive year of double-digit output increases, and robust growth was seen in the private housing and commercial construction sectors.

Almost inevitably after a period of strong recovery, output growth is projected to slow over the next few years, and average 0.5% a year over the 2018 to 2022 period but sustain a level not far short of £3bn (2015 prices), the best performance since 2008. The engines of expansion are expected to be the housing (public and private) and repair & maintenance (R&M) sectors.

The private housing sector is likely to see much more modest growth, of around 0.8% a year over the forecast period. As mentioned there are some very big projects on site or in the pipeline at Newtownards, Coleraine, and Ballyclare, amongst others. However, they are all long-term, with output spread over many years, thus have only a moderate impact on year-on-year growth. Nevertheless, output is projected to be in the £530m to £560m region (2015 prices) a year over the forecast period, the best sustained level of activity since 2010.

While over the past 25 years the R&M sectors have fared better in Northern Ireland compared with the UK, a similar level of R&M growth in both geographies is expected going forward as the share in the former has now reached the same level as in the latter, and weaker economic growth and some retrenchment in disposable incomes are likely to affect expenditure in the sector.

Construction employment in the devolved nation is expected to fall by 0.4% a year on average over the forecast period, to around 61,770 in 2022, after peaking in 2019 at close to 63,500. The professional occupations are predicted to see growth overall, but some managerial and trade roles will decline.

Source: Construction Skills Network (CSN) research (CITB/Experian: 2018)

In terms of skills shortages the also Barometer tells us:

- **Shortage most acute in mid-tier skills (NQF L3 and L4-5)** – the largest supply gaps are likely to emerge in the mid-tier skills levels across most subject areas. However this is primarily a supply issue, typically most students studying at NQF Level 3, continue their education thereby reducing the supply leaving education at that level. Therefore, the challenge is to encourage greater numbers who leave education at Level 2 and below to remain in education for longer and achieve a higher skill level;

Source: Northern Ireland 2017 Skills Barometer: Skills in Demand: Summary Report (DfE: June 2017) – P9

The recognised 'Technician level' within the BSE sector is exactly at that mid-tier level of Level 3. This underlines the need to maintain an appropriate Apprenticeship Framework for Plumbing and Heating to avoid that shortage and hence avoid:

- Using under-qualified individuals
- Using expensive imported workforce
- Using contractors (with appropriately qualified workforce) from a very limited pool who would then inflate the price

The health and safety implications are clear especially for the first two cases.

A recent consultation exercise addressed the following areas:

- Identified gaps in existing standards and frameworks
- Changes to working practices / work context
- Technological changes
- New regulations or legislative requirements
- Government policy priorities

Feedback from the sector is captured in the **BSES Demand Statement** which is available on request.

Finally, 'Evidenced demand across a sector (above and beyond existing occupancy)' is provided by the above information which has been taken from reputable sources of:

- Northern Ireland 2017 Skills Barometer: Skills in Demand: Summary Report (DfE: June 2017) - P4
- Construction Skills Network (CSN) research (CITB/Experian: 2018)

All of the above information suggests that there is an ongoing and growing need for qualified Plumbing/Heating Apprentices at Level 3.

<p>Level of work required</p> <p>1. In considering the rationale outlined above clearly indicate whether this proposal will require;</p> <ul style="list-style-type: none"> • a light touch review; • a detailed review; or • a new framework. <p>2. Please provide explanation for the preferred choice of level.</p> <p>3. Are there comparable Apprenticeship Standards / frameworks in other UK nations?</p> <p>4. Where a new framework has been proposed please outline why the identified skills</p>	<p>It is suggested that a light touch review is required for the current Level 3 and a full review/development is required for a new Level 2.</p> <p>Rationale for light touch at Level 3.</p> <p>The following pathways are shown on the Framework document:</p> <ul style="list-style-type: none"> • Pathway 1 - Domestic Plumbing and Heating (Oil-Fired, Solid Fuel or Environmental options) • Pathway 2 - Domestic Plumbing and Heating (Gas-Fired Warm Air Appliances) • Pathway 3 - Domestic Plumbing and Heating (Gas-Fired Water and Central Heating Appliances) <p>Only Pathways 1 and 3 have qualifications to support them. Pathway 2 is not currently offered. See Annex 2.</p> <p>There is currently uncertainty over the longevity of the awards from EAL and C&G. In order to minimise the risk of qualifications expiring and leaving colleges/apprentices with no route to certification it is suggested that SNIPEF:</p> <ul style="list-style-type: none"> • Develop an employer-led Annex A document. This document will outline the next actions and provide an associated rationale. • Seek an extension of the BPEC CBQ qualification - BPEC Level 3 NVQ Diploma in Domestic Plumbing and Heating (600/6863/2) • Seek the reintroduction of the BPEC Level 3 Award in the Fundamental Principles and Requirements of Environmental Technology Systems (600/6377/4) as the KBQ component. Note that the Level 2 and the Level 3 both use this KBQ. • Align the expiry dates of both of the above qualifications and with the Level 2 • Make no further detailed changes to the qualifications until after the recognised Delivery Partner has carried out a full review of the NOS when the following can be explored: <ul style="list-style-type: none"> ○ A single pathway enhanced by the mandatory application of units covering the requirements of the appropriate body. This may include OFTEC (Oil), HETAS (Solid Fuel), MCS (Emergent Technologies) and Gas Safe (Gas) • Update the L3 Framework to reflect the above in the new format (incorporating Transversal Skills etc) and in accordance with the requirements of the Plumbing employers in NI. <p>It is anticipated that the fully revised awards which support the Plumbing & Heating Apprentices at Level 3 will be in place for the start of the 2019/20 college year.</p>
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needs outlined
cannot be met by
existing provision,
or amendment to
existing provision.

Note on Level 2

It is suggested that the current Level 2 is replaced by a new Level 2 for those in employment. This should include a qualification that allows candidates to experience all aspects of the BSE sector which includes:

- *Electrical – this includes Electrotechnical and Electrical Installation where the terms are interchangeable*
- *Domestic Plumbing & Heating (DP&H)*
- *Heating Ventilating Air Conditioning & Refrigeration (HVACR)*

This approach would (as a minimum):

- *Allow candidates to make a more informed career choice on completion of the Level 2*
- *Allow employers to develop the BSE specific trades that they need to align with their order book and future planning*
- *Provide a steady ‘feeder’ into the Level 3*

*This Level 2 should support the Level 3 and not undermine it in any way. The need for a Level 2 is captured in a **separate Annex A**.*

There are comparable Apprenticeship Standards and Frameworks across the UK. SNIPEF manages those in Northern Ireland and Scotland while APHC manages those in England and Wales. SNIPEF and APHC work closely together and share all information through the PHSP. This ensures each apprenticeship is comparable/consistent in terms of level, content and evidence/assessment burden across the UK.

Employers supporting the development proposal:

Please complete the table below.

Organisation Name	Sector	Lead Representative	If an employer: Number of employees in the organisation	If an employer: Projected annual participants for Framework
AK Services	Plumbing & Heating	Alasdair King		
R&F Mechanical Services	Plumbing & Heating	Andrew Dickson		
CHC Group	Plumbing & Heating	Derek Poole		

Annex 1 – Units in Pathways 1 and 3

Pathway 1 - NVQ Diploma in Domestic Plumbing and Heating (Level 3 Environmental Technology)

Core Units

- **R/602/2498** Understand how to organise resources within BSE
- **K/502/8930** Understand and apply domestic cold water system installation, commissioning, service and maintenance techniques
- **K/502/9155** Understand and apply domestic hot water system installation, commissioning, service and maintenance techniques
- **M/502/9156** Understand and apply domestic central heating system installation, commissioning, service and maintenance techniques
- **K/602/3138** Understand the Fundamental Principles and Requirements of Environmental Technology Systems
- **T/502/9157** Understand and carry out electrical work on domestic plumbing and heating systems and components
- **D/502/9296** Understand and apply domestic sanitation system installation, commissioning, service and maintenance techniques
- **K/502/9298** Install, commission, service and maintain domestic plumbing and heating systems

Solar Thermal Options

- **F/602/3100** Know the requirements to install, commission and handover solar thermal hot water systems
- **L/602/3102** Install, commission and handover 'active' solar thermal hot water systems
- **Y/602/3104** Know the requirements to inspect, service and maintain 'active' solar thermal hot water systems
- **K/602/3107** Inspect, service and maintain 'active' solar thermal hot water systems

Heat Pump Options

- **Y/602/3054** Know the requirements to install, commission and handover heat pump systems non-refrigerant circuits
- **D/602/3072** Install, commission and handover heat pumps non-refrigerant circuits
- **F/602/3078** Know the requirements to inspect, service and maintain heat pump system installations non-refrigerant circuits
- **L/602/3083** Inspect, service and maintain heat pump installations non- refrigerant circuits

Water Recycling Option

- **T/602/3109** Know the requirements to install, commission and handover rainwater harvesting and greywater reuse systems
- **K/602/3110** Install, commission and handover rainwater harvesting and greywater reuse systems
- **M/602/3111** Know the requirements to inspect, service and maintain rainwater harvesting and greywater reuse systems
- **A/602/3130** Inspect, service and maintain rainwater harvesting and greywater reuse systems

Pathway 3 - NVQ Level 3 Diploma in Domestic Plumbing and Heating (Gas Fired Water and Central Heating Appliances)

Core Units

- **R/602/2498** Understand how to organise resources within BSE
- **K/502/8930** Understand and apply domestic cold water system installation, commissioning, service and maintenance techniques
- **K/502/9155** Understand and apply domestic hot water system installation, commissioning, service and maintenance techniques
- **M/502/9156** Understand and apply domestic central heating system installation, commissioning, service and maintenance techniques
- **T/502/9157** Understand and carry out electrical work on domestic plumbing and heating systems and components

Plumbing and Heating Units

- **D/502/9296** Understand and apply domestic sanitation system installation, commissioning, service and maintenance techniques
- **K/502/9298** Install, commission, service and maintain domestic plumbing and heating systems

PHL3

Annex 2 – Key Qualifications and Their Current Status

Current Level 2

PLUMBING LEVEL 2 FRAMEWORK				
Qual No.	Qualification Name	Status per Ofqual Register	Operational End Date	Certification End Date
600/5270/3	BPEC Level 2 NVQ Diploma in Plumbing and Heating	Available to learners	31/12/2019	31/12/2022
501/1981/3	City & Guilds Level 2 NVQ Diploma in Plumbing and Heating	Available to learners	31/12/2019	31/12/2022
501/1752/X	EAL Level 2 NVQ Diploma in Plumbing and Heating	Available to learners	None	None
600/6377/4	BPEC Level 3 Award in the Fundamental Principles and Requirements of Environmental Technology Systems (QCF)	No longer available to new learners	30/09/2016	01/09/2021
600/4282/5	City & Guilds Level 3 Award in the Fundamental Principles and Requirements of Environmental Technology Systems	Available to learners	31/12/2019	31/12/2020
600/0665/1	EAL Level 3 Award in the Fundamental Principles and Requirements of Environmental Technology Systems	Available to learners	None	None
600/5715/4	LCL Level 3 Award in the Fundamental Principles and Requirements of Environmental Technology Systems (QCF)	No longer available to new learners	31/12/2017	None
600/6253/8	ProQual Level 3 Award in Understanding the Fundamental Principles and Requirements of Environmental Technology Systems (QCF)	No longer awarded	30/09/2016	30/09/2016

CBQ – shaded
KBQ – unshaded

Current Level 3

PLUMBING & HEATING LEVEL 3 FRAMEWORK				
Qual No.	Qualification Name	Status per Ofqual Register	Operational End Date	Certification End Date
600/6863/2	BPEC Level 3 NVQ Diploma in Domestic Plumbing and Heating (Environmental Technology)	Available to learners P1	31/12/2019	31/12/2022
1600/1122/1	City & Guilds Level 3 NVQ Diploma in Domestic Plumbing and Heating	Available to learners P1	None	None
600/1252/3	EAL Level 3 NVQ Diploma in Domestic Plumbing and Heating	Available to learners P1	None	None
600/6285/X	BPEC NVQ Level 3 Diploma in Domestic Plumbing and Heating (Gas Fired Warm Air Appliances)	No longer available to new learners	30/09/2016	30/09/2018
600/1124/5	City & Guilds Level 3 NVQ Diploma in Domestic Plumbing and Heating (Gas Fired Warm Air Appliances)	No longer awarded	25/05/2017	25/05/2017
600/1451/9	EAL Level 3 NVQ Diploma in Domestic Plumbing and Heating (Gas Fired Warm Air Appliances) (QCF)	No longer available to new learners	30/09/2016	30/09/2018
600/6284/8	BPEC NVQ Level 3 Diploma in Domestic Plumbing and Heating (Gas Fired Water and Central Heating Appliances)	Available to learners P3	31/12/2019	31/12/2022
600/1134/8	City & Guilds Level 3 NVQ Diploma in Domestic Plumbing and Heating (Gas Fired Water and Central Heating Appliances)	Available to learners P3	31/12/2019	31/12/2022
600/1657/7	EAL Level 3 NVQ Diploma in Domestic Plumbing and Heating (Gas Fired Water & Central Heating Appliances)	Available to learners P3	None	None
600/6377/4	BPEC Level 3 Award in the Fundamental Principles and Requirements of Environmental Technology Systems (QCF)	No longer available to new learners	30/09/2016	01/09/2021
600/4282/5	City & Guilds Level 3 Award in the Fundamental Principles and Requirements of Environmental Technology Systems	Available to learners	31/12/2019	31/12/2020
600/0665/1	EAL Level 3 Award in the Fundamental Principles and Requirements of Environmental Technology Systems	Available to learners	None	None
600/5715/4	LCL Level 3 Award in the Fundamental Principles and Requirements of Environmental Technology Systems (QCF)	No longer available to new learners	31/12/2017	None
600/6253/8	ProQual Level 3 Award in Understanding the Fundamental Principles and Requirements of Environmental Technology Systems (QCF)	No longer awarded	30/09/2016	30/09/2016

CBQ – shaded

KBQ – unshaded