

Summit SKILLS

Contents

UK, England and English Regions

1. *SummitSkills the Sector Skills Council for the Building Services Engineering Sector*
2. *Electrotechnical Industry*
3. *Plumbing & Domestic Heating Industry*
4. *Heating & Ventilating Industry*
5. *Air Conditioning and Refrigeration Industry*
6. *Electrical and Electronic Servicing Industry*

1. Building Services Engineering Sector

1.1 Sector information - a brief description of what the sector covers at UK level

Building Services Engineering is made up of four key industries:

- Electrotechnical
- Plumbing & Domestic Heating
- Heating and Ventilating
- Air Conditioning and Refrigeration

If Building Services Engineering didn't exist there would be no electricity, heating or running water. So, no lighting, no warm buildings, no computers, no cooking, no fridges or freezers, no sanitation.

Building services engineering is continually adapting to meet technological challenges, playing a central role in Environmental Technologies, particularly around renewable energy and microgeneration. Climate change affects our everyday lives and it's the people working in building services engineering that are tackling these challenges head-on. The sector is at the forefront of installing technologies such as solar heating and hot water, photovoltaics, micro-wind turbines and ground and air source heat pumps as well as biomass and rainwater harvesting.

Key facts:

- There are around 75,835 businesses in the industry employing 525,190 people, mostly white male. Around 90% of businesses employ fewer than 10 people
- The number of new people required each year to replace those who retire or leave the industry and additional growth demand is around 13,176
- About 54% of people working in this industry are employed as Installation Electricians with around 20% of these installing alarms. 5-8% work as Highway Systems Electricians and the other 2-5% work in the other trades
- Females comprise 12-14% of the workforce and ethnic minorities around 4.7% although this is improving, albeit very slowly. Approximately 2.4% of the workforce is from Indian, Pakistani or Bangladeshi backgrounds

Summit SKILLS

- The majority (65%) of the workforce are aged between 35 and 54
- From 2010 onwards, there is likely to be an increase in the number of people required at technician and professional levels, thereby improving prospects for new entrants to the sector. This will particularly benefit graduates seeking to enter the industry and gain employment within consultancies.

To find out more about the sector: <http://www.goodday.org.uk/Careers/What-is-Building-Services/8> & <http://www.goodday.org.uk/Careers/What-is-Building-Services/19>

To watch a short film about the sector: <http://www.goodday.org.uk/Careers/What-is-Building-Services/83>

To read more about Building Services Engineering and the environment: <http://www.goodday.org.uk/Careers/What-is-Building-Services/65>

The following resources may also be useful:

- Skilled Worker Careers Information – England <http://www.goodday.org.uk/public/cms/File/Good%20day/England%20craft%20careers%20booklet%20final%20Aug19.pdf>
- Technician and Graduate Careers Information <http://www.goodday.org.uk/public/cms/File/Good%20day/Technician%20Graduate%20Booklet%20final%2010%20July.pdf>
- Interactive Careers Map <http://www.goodday.org.uk/Careers/Careers-Online-Map/10>. A pdf version is available for download at <http://www.goodday.org.uk/public/cms/File/Good%20day/SummitSkills%20A2%20careers%20map.pdf>
- Training Routes <http://www.goodday.org.uk/Careers/Training-Routes/14>
- Apprenticeships and NVQs in England <http://www.goodday.org.uk/Careers/Training-Routes/Training-around-the-UK---skilled-worker/50>
- Technical Workers Training Routes <http://www.goodday.org.uk/Careers/Training-Routes/55>
- Professional Workers Training Routes <http://www.goodday.org.uk/Careers/Training-Routes/56>

2. Electrotechnical

2.1 A brief description of what the industry covers at UK level

This is a diverse and exciting industry at the cutting-edge of installing, commissioning and maintaining technology in all types of building, including:

- complex projects such as shopping, sports stadiums, hospitals and new housing projects
- advanced data-cabling, data-handling systems and fibre-optic systems
- computer controlled building management systems
- renewable energy systems
- control equipment for complex industrial manufacturing and processing

The Electrotechnical industry is professional, responsible and future proof. It offers good prospects, a full career path from school-leaver to professional qualifications, and good pay.

From domestic work to major engineering projects - the Electrotechnical world provides a variety of jobs that few others can match. Electrotechnical workers have numerous choices regarding the type of work they do and the career progression routes they take.

2.2 Information on careers available and new emerging jobs, transferability of skills, career paths and opportunities for progression

Jobs currently available in the industry include (titles can differ between regions, nations and employers):

- Installation Electricians** install power, lighting, fire protection, security and structured cabling
- Electrotechnical Panel Builders** build the panels that control building management systems and industrial processes
- Machine Repair and Rewind Electricians** repair and maintain electrical motors which drive equipment and machinery such as compressors, pumps and fans within buildings
- Maintenance Electricians** maintain modern electrical systems and the equipment they serve to ensure effective and efficient operation
- Highway Systems Installers** install and maintain street lighting and traffic management systems

The Electrotechnical industry is at the forefront of environmentally-friendly technologies, designing and installing low carbon systems involving photovoltaic cells, combined heat and power (CHP) units, wind turbines, fuel cells and water power.

Key Common Attributes across all occupations involve:

- an aptitude for technical subjects or be practically orientated
- an interest in technology
- an ability to solve practical problems
- motivation to succeed within the industry/sector
- willingness to learn and apply that learning in the workplace/job role
- enthusiasm and attitude to work
- potential to complete the relevant qualifications/apprenticeship programmes

Summit SKILLS

- ability to communicate effectively with a range of people
- be numerate and literate
- have good colour vision to recognise colour coded wires and components
- ability to work at heights or in confined spaces
- willingness to undergo a police check (for example when working with children and vulnerable adults)

Typical progression routes from this industry are into technician (the collective term that is used to broadly describe a diverse range of jobs normally qualified to Level 3/4, Higher National Certificate or Foundation Degree level or equivalent) or professional building service engineering roles. For more information, see <http://www.goodday.org.uk/public/cms/File/Good%20day/Technician%20Graduate%20Booklet%20final%2010%20July.pdf>.

2.3 Information on pay scales in the industry

Pay scales in the industry vary depending on, among other things, the employer, the number of hours you are prepared to work, your location, and any company bonus schemes.

As a guide:

- First-year apprentices start on around £8,000 a year
- Newly-qualified workers earn around £17,000 a year
- Experienced workers earn around £30,000 a year

For up-to-date information on pay scales, visit the Joint Industry Board (JIB) website <http://www.jib.org.uk>.

2.4 Information on entry requirements, application processes (e.g. Apprenticeships)

You must be employed to sign up to the Electrotechnical Advanced Level Apprenticeship.

You are expected to have a good level of education, GCSEs grade C or above in Maths, English and Science, or the Higher Diploma in either Engineering or Construction and the Built Environment (CBE). You may also have completed the Level 1 or Level 2 Access to Building Services Engineering qualification. You will usually have to have an interview and, depending on your age and experience, you may have to undertake a skills/aptitude test before the employer/provider/college will take you on.

The Electrotechnical Advanced Level Apprenticeship framework can be found at <http://www.summitskills.org.uk/cgi-bin/go.pl/frameworks/index.html>

For more information about Electrotechnical apprenticeships, contact:

- BEST: www.best-ltd.co.uk or telephone 01628 607800
- JTL: www.jtltraining.com or telephone 08000 852 308
- Your local college

2.5 Qualifications

The Electrotechnical industry requires you to have a Level 3 qualification to achieve qualified status. Apprenticeships typically take between 2 & 4 years to complete. The following competence qualifications are available:

- Level 2 NVQ Certificate in Highway Electrical Systems
- Level 2 Certificate in Highway Electrical Work – Public Lighting
- Level 2 Certificate in Highway Electrical Work – Traffic Signals
- Level 2 NVQ Diploma in Highway Electrical Systems
- Level 3 NVQ Diploma in Servicing and Commissioning Highway Electrical Systems
- Level 3 NVQ Diploma in Servicing Highway Electrical Systems
- Level 3 Certificate in Highway Electrical Work – Public Lighting
- Level 3 Certificate in Highway Electrical Work – Traffic Signals
- Level 3 NVQ Diploma in Electrotechnical Services (Electrical Maintenance)
- Level 3 NVQ Diploma in Installing Electrotechnical Systems & Equipment (Buildings, Structures and The Environment)

You will also need to achieve the following Functional Skills:

- Maths Level 2
- English Level 2
- ICT Level 2

Always check with your training provider that the course you are planning to do will give you the qualification you need.

2.6 Data on employment and labour market trends and forecasts

There are around 23,000 businesses in the industry employing 135,000 people, mostly white male. Around 90% of businesses employ fewer than 10 people.

The number of new people required each year to replace those who retire or leave the industry is around 7,000.

About 90% of people working in this industry are employed as Installation Electricians with around 20% of these installing alarms. 5-8% work as Highway Systems Installers and the other 2-5% work in the other trades.

Females comprise less than 1% of the skilled workforce and ethnic minorities around 3.5% although this is improving, albeit very slowly. Approximately 1.4% of the workforce is from Indian, Pakistani or Bangladeshi backgrounds.

The majority (63%) of the workforce are aged between 35 and 54.

From 2010 onwards, there is likely to be an increase in the number of people required at technician and professional levels, thereby improving prospects for new entrants to the sector. This will particularly benefit graduates seeking to enter the industry and gain employment within consultancies.

Summit SKILLS

2.7 Skill shortages

Because of the effects of the economic downturn in 2008-2010, the skill needs of the sector in 2011-2012 are likely to be met by the redeployment of displaced workers, in some regions. Therefore, recruitment to replace those retiring or leaving the industry is likely to be minimal.

2.8 Information on opportunities for adults changing career direction

Typical progression routes in this industry are into technician (the collective term that is used to broadly describe a diverse range of jobs normally qualified to NVQ Level 3/4, Higher National Certificate or Foundation Degree level or equivalent), supervisory management or professional building services engineering roles. Many qualified electricians also run their own businesses.

Technician and professional roles typically sought after by people working in the sector are:

- Computer Aided Design (CAD) Technician
- Contract or Project Engineer
- Site Supervisor
- Contract or Project Manager
- Consulting Engineer
- Estimator/Quantity Surveyor
- Educator or Trainer
- Business Manager or Proprietor

For more information, see

<http://www.goodday.org.uk/public/cms/File/Good%20day/Technician%20Graduate%20Booklet%20final%2010%20July.pdf>.

If you want to move to or develop a career in one of the other industries within the sector, you will need to achieve the relevant Level 2 or Level 3 qualification to be recognised as qualified within that industry.

Opportunities are also available to upskill into industry-related Environmental Technologies Installation and Maintenance by achieving one or more of the following qualifications (each of which has the Level 3 Award in the Fundamental Principles and Requirements of Environmental Technology Systems embedded within it):

- Level 3 Award in the Installation of Small-scale Solar Photovoltaic Systems
- Level 3 Award in the Installation and Maintenance of Small-scale Solar Photovoltaic Systems

To identify how closely you meet the generic skills required to work in the sector and to find out which jobs you may be most suited to, review the job changer matrix found at <http://www.goodday.org.uk/public/cms/File/LMI%20Job%20Changer%20Matrix.pdf>

Summit SKILLS

2.9 Information on points of entry or transfer into the industry from another industry.

The Electrotechnical industry is a frequent choice of career by those who are made redundant from engineering roles, by those changing career and by those returning to work after a break. You will need to achieve a Level 3 qualification to achieve qualified status and this will take between 2 & 4 years to complete whilst working in the industry.

In order to work in the electrotechnical industry, there are certain skills and traits you will need. These are the same, generic skills, whichever industry you work in but the levels may differ depending on the job you will be doing.

- Communicate
- Use Numbers
- Manage Information
- Demonstrate Positive Attitude & Behaviours
- Be Responsible
- Be Adaptable
- Learn Continuously
- Work Safely
- Work With Others
- Think and Solve Problems
- Participate in Projects and Tasks
- Customer Care
- Job Specific Aptitude
- Underpinning Knowledge
- Practical Skills & Techniques

Levels:

- 1 = Basic ability (I can get by)
- 2 = Medium ability (I am as good as other people)
- 3 = Advanced ability (I am really good at this)

If you are considering changing jobs to a career in the electrotechnical industry, you may already have some of these. To find out how suited you would be, you might like to carry out the self-assessment found at

<http://www.goodday.org.uk/public/cms/File/LMI%20Job%20Changer%20Matrix.pdf>.

2.10 Job profiles

The Electrotechnical & Building Services Engineer job profiles can be found at <http://www.goodday.org.uk/Careers/Careers-Information/103>

Summit SKILLS

2.11 Case studies

Chris Jenkins – Electrical Apprentice <http://www.goodday.org.uk/Careers/Case-Studies/39>

Andy Parkes – Electrical Apprentice to Quantity Surveyor
http://www.goodday.org.uk/public/cms/Media/ANDY_PARKES_768K_Stream.wmv

Elizabeth MacDonald – Electrical Apprentice to Electrotechnical Tutor
http://www.goodday.org.uk/public/cms/Media/ELIZABETH_MACDONALD_768K_St.wmv

William McLean – Electrician to Project Engineer
<http://www.goodday.org.uk/Careers/Case-Studies/61>

David Edwards - Project Engineer
http://www.goodday.org.uk/public/cms/Media/DAVID_EDWARDS_768K_Stream.wmv

Ivan Chan – Senior Mechanical Engineer
http://www.goodday.org.uk/public/cms/Media/IVAN_CHAN_768K_Stream.wmv

Mary Ann Wright – Senior Engineer
<http://www.goodday.org.uk/Careers/Case-Studies/42>

2.12 FAQs

Question	Response
What qualifications do I need to start an apprenticeship?	You are expected to have a good level of education, GCSEs grade C or above in Maths, English and Science, or the Higher Diploma in either Engineering or Construction and the Built Environment (CBE) or, in Wales, the Welsh Baccalaureate.
Can I choose between a trade and a technical/professional job in the sector?	If you want to learn a trade, an apprenticeship is the best way in. If you want a technical/professional job, there are two entry routes - you can either start work immediately and do an apprenticeship, then go on to get a suitable Higher National Diploma, Foundation Degree or full degree; or you can go on to any of these straight after completing your A levels.
How long does it take before I am skilled enough to get full pay?	Once you have completed your apprenticeship (2-4 years) or technical/professional qualification, you will then need to gain further work experience for a few years before earning the top rates of pay. Often, pay increases are linked to achievement of qualifications.

Summit SKILLS

<p>Is it better to do a full-time course at college or take an apprenticeship?</p>	<p>Apprenticeships, although fewer in number than full-time places, provide the best route as they not only provide the knowledge required but the practical work experience as well. Higher National Diplomas and full honours degrees can be studied full time or part time whilst in employment. Foundation Degrees are designed to provide a higher education qualification with a vocational focus and should ideally be completed whilst in relevant employment to enable participation in appropriate work based learning as well as college or university based learning.</p>
<p>What qualifications will I need to work as an electrician?</p>	<p>The Electrotechnical industry requires you to have a Level 3 qualification to achieve qualified status.</p>
<p>Where can I find an employer?</p>	<p>You should begin by thinking about whether any members of your family or friends run or work for an electrical business or another business that employs electricians – they may be able to help.</p> <p>There is a new website where you can look for local or national vacancies https://apprenticeshipvacancymatchingservice.lsc.gov.uk/navms/forms/candidate/visitorlanding.aspx.</p> <p>You could also try contacting businesses from your local Yellow Pages and adverts for apprentices sometimes appear in local newspapers and on websites such as Workthing or Monster. Your local Jobcentre may also be able to help</p> <p>The Electrical Contractors Association www.eca.co.uk has a search facility on its website which enables you to find electrical businesses in your area or in other locations in England, Northern Ireland & Wales.</p> <p>The Chartered Institute of Building Services Engineers www.cibse.org also has a search facility which enables you to find Building Services Engineering businesses across the UK</p> <p>It is important to remember that employers take on apprentices based on the needs of their business and may change from year to year. The recession is having an impact on recruitment.</p>

Summit SKILLS

<p>What does the aptitude test involve?</p>	<p>Colleges/Training providers use their own tests. These will generally include:</p> <ul style="list-style-type: none"> • 24hour clock & working with timing devices • Basic calculations • Calculating materials quantities • Calculating volumes • Mathematical series • Reading instruments • Taking measurements • Interpreting charts • Using formulae • Interpreting servicing/installation instructions (comprehension section) • Object recognition & applying logic <p>You may also be tested for colour blindness, depending on what work you will be doing, and will be asked to complete a health declaration form.</p>
<p>What will I be asked at an interview?</p>	<p>This will vary depending on the employer but you will usually be asked about:</p> <ul style="list-style-type: none"> • your qualifications • previous work experience - in the industry or elsewhere • availability to travel and work away from home
<p>How much does an electrician get paid?</p>	<p>Pay scales in the industry vary depending on the employer, the number of hours you are prepared to work, your location and any company bonus schemes. As a guide:</p> <ul style="list-style-type: none"> • First-year apprentices start on around £8,000 a year • Newly-qualified workers earn around £17,000 a year • Experienced workers earn around £30,000 a year
<p>What are the chances of me getting a job when I complete my training?</p>	<p>If you join as an apprentice or undertake a work-based qualification, you will already be employed as training cannot be completed without work experience. However, there is a great deal of competition for jobs and apprenticeships in this industry and employers only take the very best applicants, usually those with some work experience.</p>

Summit SKILLS

What is a CSCS Card and how do I get one?	<p>CSCS stands for Construction Skills Certification Scheme and this is often mistaken as the card required by building services engineering workers. However, the correct card for anyone working in Electrotechnical occupations is a card issued under the Electrotechnical Certification Scheme (ECS).</p> <p>Skillcards are increasingly demanded as proof of occupational competence by contractors, public and private clients and others.</p> <p>For more information about these cards and how to get one, visit http://www.jib.org.uk/ecs1.htm</p>
---	---

2.13 Sources of additional information, web-links etc

General careers information can be obtained from SummitSkills' careers helpline 08000 688336. Further general information is also available on SummitSkills' careers website www.goodday.org.uk. Further information about Electrotechnical careers is available at <http://www.goodday.org.uk/Careers/What-is-Building-Services/21>

The following organisations are associated with the Electrotechnical industry:

- The Electrical Contractors' Association (ECA) represents electrical, electronic, installation engineering and building services companies www.eca.co.uk
- The Joint Industry Board (JIB) for the Electrical Contracting Industry regulates the relations between employers and employees engaged in the industry www.jib.org.uk

2.14 Electrotechnical Regional Information

2.14.1 East Midlands

There are 13,810 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 531

2.14.2 East of England

There are 18,990 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 9745.

2.14.3 London

There are 19,670 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 707.

2.14.4 North East

There are 6,710 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 245.

2.14.5 North West

There are 18,060 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 688.

2.14.6 South East

There are 25,550 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 1001.

2.14.7 South West

There are 14,610 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 555.

2.14.8 West Midlands

There are 14,190 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 572.

2.14.9 Yorkshire and the Humber

There are 14,570 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 554.

3. Plumbing & Domestic Heating

3.1 A brief description of what the industry covers at UK level

Those who work in the plumbing and domestic heating industry are responsible for many aspects of the comfortable, hygienic and safe environments in which we live, work and relax.

Plumbing & Domestic Heating is a responsive and continually developing industry. In recent years environmental technologies have been integrated within the industry and those who work in the plumbing and domestic heating industry now undertake a wide variety of jobs, including:

- installing and maintaining central heating systems, hot and cold water systems, sanitary appliances, waste/drainage systems and weathering
- installing, commissioning and maintaining solar water heating, air source heat pumps, rainwater harvesters or grey water re-cycling systems
- installing and maintaining gas, oil and solid fuel pipework and appliances.

Summit SKILLS

Plumbing & Domestic Heating offers a rewarding future, a full career path leading to professional qualifications, and good pay. No two days are the same - from changing a tap washer to installing a solar powered hot water system, those who work in the plumbing and domestic heating industry work on domestic, commercial and industrial projects that offer variety and challenge.

3.2 Information on careers available and new emerging jobs, transferability of skills career paths and opportunities for progression

Jobs currently available in the industry include (titles can vary between regions, nations and employers):

- **Plumbers and Domestic Heating Installers** install basic & complex cold water, hot water, sanitation, rainwater, heating systems and domestic fuel burning appliances (such as gas, oil, solid fuel or biomass boilers), wet central heating systems and sheet lead weathering systems, design systems and improve business products
- **Industrial and Commercial Plumbers & Heating Installers** install industrial and commercial heating, fuel supply, specialist appliances and fire protection systems

The Plumbing & Domestic Heating industry is at the forefront of environmentally-friendly technologies, designing and installing low carbon footprint systems involving solar water and rainwater harvesting.

Key Common Attributes across all occupations involve:

- an aptitude for technical subjects or be practically orientated
- an interest in technology
- an ability to solve practical problems
- motivation to succeed within the industry/sector
- willingness to learn and apply that learning in the workplace/job role
- enthusiasm and attitude to work
- potential to complete the relevant qualifications/apprenticeship programmes
- ability to communicate effectively with a range of people
- be numerate and literate
- have good colour vision to recognise colour coded wires and components
- ability to work at heights or in confined spaces
- willingness to undergo a police check (for example when working with children and vulnerable adults)

Typical progression routes from this industry are into technician (the collective term that is used to broadly describe a diverse range of jobs normally qualified to Level 3/4, Higher National Certificate or Foundation Degree level or equivalent) or professional building service engineering roles. For more information, see

<http://www.goodday.org.uk/public/cms/File/Good%20day/Technician%20Graduate%20Booklet%20final%2010%20July.pdf>.

3.3 Information on pay scales in the industry

Pay scales in the industry vary depending on, among other things, the employer, the number of hours you are prepared to work, your location and any company bonus schemes.

As a guide:

- First-year apprentices start on around £10,000 a year
- Newly-qualified plumbers and domestic heating installers earn around £17,000 a year
- Experienced plumbers and domestic heating installers earn around £30,000 a year

For up-to-date information on pay scales, visit <http://www.unitetheunion.com>.

3.4 Information on entry requirements, application processes (e.g. Apprenticeships)

You must be employed to sign up to a Plumbing or Plumbing & Domestic Heating Apprenticeship.

You are expected to have a good level of education, GCSEs grade C or above in Maths, English and Science, or the Higher Diploma in either Construction and the Built Environment or Engineering. You may also have completed the Level 1 or Level 2 Access to Building Services Engineering qualification. You will usually have to have an interview and, depending on your age and experience, you may have to undertake a skills/aptitude test before the employer/provider/college will take you on.

The Plumbing Intermediate Level Apprenticeship & Domestic Plumbing & Heating Advanced Level Apprenticeship frameworks can be found at <http://www.summitskills.org.uk/cgi-bin/go.pl/frameworks/index.html>

For more information about Plumbing & Domestic Heating apprenticeships, contact:

- BEST: www.best-ltd.co.uk or telephone 01628 607800
- JTL: www.jtltraining.com or telephone 08000 852 308
- Your local college

3.5 Qualifications

The Plumbing & Domestic Heating industry requires you to have a Level 2 or Level 3 qualification to achieve qualified status. The level will depend on the level of responsibility and the complexity of systems being worked on. Apprenticeships typically take between 2 & 4 years to complete. The following competence qualifications are available:

- Level 2 NVQ Diploma in Domestic Heating
- Level 2 NVQ Diploma in Plumbing and Heating
- Level 3 NVQ Diploma in Domestic Plumbing and Heating
- Level 3 NVQ Diploma in Domestic Heating
- Level 3 NVQ Diploma in Domestic Heating (Gas fired warm air appliances)
- Level 3 NVQ Diploma in Domestic Plumbing and Heating (Gas fired warm air appliances)
- Level 3 NVQ Diploma in Domestic Heating (Gas fired water and central heating appliances)

Summit SKILLS

- Level 3 NVQ Diploma in Domestic Plumbing and Heating (Gas fired water and central heating appliances)

You will also be required to achieve the following Functional Skills:

- Maths Level 2
- English Level 2
- ICT Level 1

3.6 Data on employment and labour market trends and forecasts

There are around 22,000 businesses in the industry employing 62,000 people mostly white male. Around 90% of businesses employ fewer than 10 people.

The number of new people required each year to replace those who retire or leave the industry is around 3,500.

About 80% of people work as Plumbers and Domestic Heating Installers, while the other 20% as Industrial & Commercial Plumbers and Heating Installers.

Females comprise less than 1% of the skilled workforce and ethnic minorities around 3% although this is improving albeit very slowly. Approximately 1.4% of the workforce is from Indian, Pakistani or Bangladeshi backgrounds.

The majority (63%) of the workforce are aged between 35 and 54. However, 45% of people in training are aged between 16 and 24.

From 2010 onwards, there is likely to be an increase in the number of people required at technician and professional levels, thereby improving prospects for new entrants to the sector. This will particularly benefit graduates seeking to enter the industry and gain employment within consultancies.

3.7 Skill shortages

Because of the effects of the economic downturn in 2008-2010, the skill needs of the sector in 2011-2012 are likely to be met by the redeployment of displaced workers, in some regions. Therefore, recruitment to replace those retiring or leaving the industry is likely to be minimal.

3.8 Information on opportunities for adults changing career direction

Progression routes in this industry will depend on the size of the employer. Large employers may be able to offer progression into technician (the collective term that is used to broadly describe a diverse range of jobs normally qualified to Level 3/4, Higher National Certificate or Foundation Degree level or equivalent), supervisory management or professional building services engineering roles. Many qualified those who work in the plumbing and domestic heating industry also run their own businesses.

Summit SKILLS

Technician and professional roles typically sought after by people working in the sector are:

- Site Supervisor
- Educator or Trainer
- Business Manager or Proprietor

For more information, see

<http://www.goodday.org.uk/public/cms/File/Good%20day/Technician%20Graduate%20Booklet%20final%2010%20July.pdf>.

If you want to move to or develop a career in one of the other industries within the sector, you will need to achieve the relevant Level 2 or Level 3 qualification to be recognised as qualified within that industry.

Opportunities are also available to upskill into industry-related Environmental Technologies Installation and Maintenance by achieving one or more of the following qualifications (each of which has the Level 3 Award in the Fundamental Principles and Requirements of Environmental Technology Systems embedded within it):

- Level 3 Award in the Installation of Water Harvesting and Re-use Systems
- Level 3 Award in the Installation & Maintenance of Water Harvesting and Re-use Systems
- Level 3 Award in the Installation of Solar Thermal Hot Water Systems
- Level 3 Award in the Installation & Maintenance of Solar Thermal Hot Water Systems
- Level 3 Award in the Installation of Heat Pump Systems (Non-refrigerant Circuits)
- Level 3 Award in the Installation & Maintenance of Heat Pump Systems (Non-refrigerant Circuits)

To identify how closely you meet the generic skills required to work in the sector and to find out which jobs you may be most suited to, review the job changer matrix found at <http://www.goodday.org.uk/public/cms/File/LMI%20Job%20Changer%20Matrix.pdf>

3.9 Information on points of entry or transfer into the industry from another industry.

Many people seek to enter the Plumbing & Domestic Heating industry each year. It is a very common choice among young people, by those who are made redundant, by those changing career and by those returning to work after a break. However, there are insufficient job opportunities available to satisfy demand so careful thought needs to be given before embarking on a training programme.

You will need to achieve an Level 2 or Level 3 qualification to achieve qualified status, depending on the level of responsibility and the complexity of systems being worked on and this will take 2 to 3 years to complete whilst working in the industry.

Many Plumbing & Domestic Heating training courses are advertised but you should ensure that they will provide you with what the industry requires.

Summit SKILLS

In order to work in the Plumbing & Domestic Heating industry, there are certain skills and traits you will need. These are the same, generic skills, whichever industry you work in but the levels may differ depending on the job you will be doing.

- Communicate
- Use Numbers
- Manage Information
- Demonstrate Positive Attitude & Behaviours
- Be Responsible
- Be Adaptable
- Learn Continuously
- Work Safely
- Work With Others
- Think and Solve Problems
- Participate in Projects and Tasks
- Customer Care
- Job Specific Aptitude
- Underpinning Knowledge
- Practical Skills & Techniques

Levels:

- 1 = Basic ability (I can get by)
- 2 = Medium ability (I am as good as other people)
- 3 = Advanced ability (I am really good at this)

If you are considering changing jobs to a career in the Plumbing & Domestic Heating industry, you may already have some of these. To find out how suited you would be, you might like to carry out the self-assessment found at <http://www.goodday.org.uk/public/cms/File/LMI%20Job%20Changer%20Matrix.pdf>.

3.10 Job profiles

The Plumbing & Domestic Heating & Building Services Engineer job profiles can be found at <http://www.goodday.org.uk/Careers/Careers-Information/103>

3.11 Case studies

Seamus Convery – Plumber

http://www.goodday.org.uk/public/cms/Media/SEAMUS_CONVERY_768K_Stream.wmv

Tony McCreath – Domestic Heating Installer to Business Owner

<http://www.goodday.org.uk/Employers/Whos-Training/37>

Alf Ramsay – Domestic Heating Installer to Business Owner

<http://www.goodday.org.uk/Careers/Case-Studies/38>

Summit SKILLS

David Edwards - Project Engineer

http://www.goodday.org.uk/public/cms/Media/DAVID_EDWARDS_768K_Stream.wmv

Ivan Chan – Senior Mechanical Engineer

http://www.goodday.org.uk/public/cms/Media/IVAN_CHAN_768K_Stream.wmv

Mary Ann Wright – Senior Engineer

<http://www.goodday.org.uk/Careers/Case-Studies/42>

3.12 FAQs

Question	Response
What qualifications do I need to start an apprenticeship?	You are expected to have a good level of education, GCSEs grade C or above in Maths, English and Science, or the Higher Diploma in either Engineering or Construction and the Built Environment (CBE) or, in Wales, the Welsh Baccaalaureate.
Can I choose between a trade and a technical/professional job in the sector?	If you want to learn a trade, an apprenticeship is the best way in. If you want a technical/professional job, there are two entry routes - you can either start work immediately and do an apprenticeship, then go on to get a suitable Higher/National Diploma, Foundation Degree or full degree; or you can go on to any of these straight after completing your A levels.
How long does it take before I am skilled enough to get full pay?	Once you have completed your apprenticeship (2-4 years) or technical/professional qualification, you will then need to gain further work experience for a few years before earning the top rates of pay. Often, pay increases are linked to achievement of qualifications.
Is it better to do a full-time course at college or take an apprenticeship?	Apprenticeships, although fewer in number than full-time places, provide the best route as they not only provide the knowledge required but the practical work experience as well. Higher/National Diplomas and degrees with Hons can be studied full time or part time whilst in employment. Foundation Degrees are designed to provide a higher education qualification with a vocational focus and should ideally be completed whilst in relevant employment to enable participation in appropriate work based learning as well as college or university based learning.
What qualifications will I need to work in the plumbing and domestic heating industry?	The Plumbing & Domestic Heating industry requires you to have a Level 2 or Level 3 qualification to achieve qualified status, depending on the level of responsibility and the complexity of systems being worked on.

Summit SKILLS

<p>Where can I find an employer?</p>	<p>You should begin by thinking about whether any members of your family or friends run or work for a Plumbing & Domestic Heating business or another business that employs those who work in the plumbing and domestic heating industry – they may be able to help.</p> <p>There is a new website where you can look for local or national vacancies https://apprenticeshipvacancymatchingservice.lsc.gov.uk/navms/forms/candidate/visitorlanding.aspx.</p> <p>You could also try contacting businesses from your local Yellow Pages and adverts for apprentices sometimes appear in local newspapers and on websites such as Workthing or Monster. Your local Jobcentre may also be able to help.</p> <p>The Association of Plumbing & Heating Contractors Association www.competentpersonsscheme.co.uk/, the Heating & Ventilating Contractors Association www.hvca.org.uk and The Chartered Institute of Plumbing & Domestic Heating & Heating Engineering www.ciphe.org.uk all have a search facility on their websites which enables you to find Plumbing & Domestic Heating businesses in your area or in other locations in the UK.</p> <p>The Chartered Institute of Building Services Engineers www.cibse.org also has a search facility which enables you to find Building Services Engineering businesses across the UK</p> <p>It is important to remember that employers take on apprentices based on the needs of their business and may change from year to year. The recession is having an impact on recruitment. Therefore, a good CV and reference are essential.</p>
--------------------------------------	---

Summit SKILLS

<p>What does the aptitude test involve?</p>	<p>Colleges/Training providers use their own tests. These will generally include:</p> <ul style="list-style-type: none"> • 24hour clock & working with timing devices • Basic calculations • Calculating materials quantities • Calculating volumes • Mathematical series • Reading instruments • Taking measurements • Interpreting charts • Using formulae • Interpreting servicing/installation instructions (comprehension section) • Object recognition & applying logic <p>You may also be tested for colour blindness, depending on what work you will be doing, and will be asked to complete a health declaration form.</p>
<p>What will I be asked at an interview?</p>	<p>This will vary depending on the employer but you will usually be asked about:</p> <ul style="list-style-type: none"> • your qualifications • previous work experience - in the trade or elsewhere • availability to travel and work away from home
<p>How much does a those who work in the plumbing and domestic heating industry get paid?</p>	<p>Pay scales in the industry vary depending on the employer, the number of hours you are prepared to work, your location and any company bonus schemes. As a guide:</p> <ul style="list-style-type: none"> • First-year apprentices start on around £10,000 a year • Newly-qualified plumbers and domestic heating installers earn around £17,000 a year • Experienced plumbers and domestic heating installers earn around £30,000 a year
<p>What are the chances of me getting a job when I complete my training?</p>	<p>If you join as an apprentice or undertake a work-based qualification, you will already be employed as training cannot be completed without work experience. However, there is a great deal of competition for jobs and apprenticeships in this industry and employers only take the very best applicants, usually those with some work experience.</p>
<p>What is the difference between Plumbing & Domestic Heating and Heating & Ventilating?</p>	<p>Simply put, Plumbing & Domestic Heating provides sanitation systems and hot & cold water supplies within a building; heating controls the environmental temperature; and ventilating provides the means to control air movement.</p>

Summit SKILLS

What is a CSCS Card and how do I get one?	<p>CSCS stands for Construction Skills Certification Scheme and this is often mistaken as the card required by building services engineering workers. However, the correct card for anyone working in Plumbing & Domestic Heating occupations is the JIB-PMES Card.</p> <p>Skillcards are increasingly demanded as proof of occupational competence by contractors, public and private clients and others.</p> <p>For more information about these cards and how to get one, visit http://www.skillcard.org.uk/index.html</p>
---	--

3.13 Sources of additional information, web-links etc

General careers information can be obtained from SummitSkills' careers helpline 08000 688336. Further general information is also available on SummitSkills' careers website www.goodday.org.uk. Further information about Plumbing & Domestic Heating careers is available at <http://www.goodday.org.uk/Careers/What-is-Building-Services/48>

The following organisations are associated with the Plumbing & Domestic Heating industry:

- The Association of Plumbing & Heating Contractors (APHC) represents Plumbing & Domestic Heating companies www.aphc.co.uk
- The Chartered Institute of Plumbing & Heating Engineering (CIPHE) is the UK's professional and technical body for all Plumbing & Domestic Heating and heating professionals www.ciphe.org.uk
- The Joint Industry Board for Plumbing & Mechanical Engineering Services is the registration body for the Plumbing & Domestic Heating Industry in England and Wales www.jib-pmes.org.uk

3.14 Plumbing & Domestic Heating Regional Information

3.14.1 East Midlands

There are 5,350 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 233.

3.14.2 East of England

There are 7,500 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 333.

3.14.3 London

There are 10,110 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 325.

3.14.4 North East

There are 4,640 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 166.

3.14.5 North West

There are 10,060 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 392.

3.14.6 South East

There are 10,750 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 467.

3.14.7 South West

There are 7,820 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 307.

3.14.8 West Midlands

There are 6,440 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 283.

3.14.9 Yorkshire and the Humber

There are 8,020 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 313.

4. Heating and Ventilating

4.1 A brief description of what the industry covers at UK level

From the grilles on a classroom wall, to the large networks of pipes that we see in factory ceilings, clues to how buildings work are all around us. Everywhere we go, whether it's a shop, an office, even a laboratory, we can see the precise and complicated systems that make those buildings work.

The Heating and Ventilating industry installs systems and technology to make environments habitable and as energy efficient as possible. It requires highly trained people who have the ability to adapt and apply their skills to the installation of these complex systems:

Summit SKILLS

- Pipework and ductwork installers use their skills to cut, form, weld, and join a wide range of materials that combine to create a heating and ventilating system
- Control and commissioning engineers use their knowledge to ensure systems meet design requirements for the building
- Maintenance engineers identify faults, fix them and, more importantly, plan and carry out service and maintenance activities on systems to make sure they work efficiently and effectively.

4.2 Information on careers available and new emerging jobs, transferability of skills career paths and opportunities for progression

Jobs currently available in the industry include (titles can vary between regions, nations and employers):

- **Heating Installers** install complex heating equipment and pipework systems to exact design specifications within large buildings such as office blocks, hospitals and schools
- **Ductwork Installers** install complex ductwork and ventilation systems to exact design specifications within large buildings
- **Service and Maintenance Engineers** develop service and maintenance programmes and carry out regular maintenance and repairs on all Heating and Ventilating systems and equipment

The Heating and Ventilating industry is at the forefront of environmentally-friendly technologies, designing and installing low carbon footprint systems involving solar water, combined heat and power (CHP) units, ground source heat pumps, biomass and fuel cells.

Key Common Attributes across all occupations involve:

- an aptitude for technical subjects or be practically orientated
- an interest in technology
- an ability to solve practical problems
- motivation to succeed within the industry/sector
- willingness to learn and apply that learning in the workplace/job role
- enthusiasm and attitude to work
- potential to complete the relevant qualifications/apprenticeship programmes
- ability to communicate effectively with a range of people
- be numerate and literate
- have good colour vision to recognise colour coded wires and components
- ability to work at heights or in confined spaces
- willingness to undergo a police check (for example when working with children and vulnerable adults)

Typical progression routes from this industry are into technician (the collective term that is used to broadly describe a diverse range of jobs normally qualified to Level 3/4, Higher National Certificate or Foundation Degree level or equivalent) or professional building service engineering roles. For more information, see

<http://www.goodday.org.uk/public/cms/File/Good%20day/Technician%20Graduate%20Booklet%20final%2010%20July.pdf>.

4.3 Information on pay scales in the industry

Pay scales in the industry vary depending on, among other things, the employer, the number of hours you are prepared to work, your location and any company bonus schemes.

As a guide:

- First-year apprentices will earn between £9,100 and £11,250 a year
- Newly-qualified installers earn around £20,000 a year
- Experienced engineers earn between £22,000 and £24,000 a year

4.4 Information on entry requirements, application processes (e.g. Apprenticeships)

You must be employed to sign up to a Heating and Ventilating Apprenticeship.

You are expected to have a good level of education, GCSEs grade C or above in Maths, English and Science, or the Higher Diploma in either Construction and the Built Environment or Engineering. You may also have completed the Level 1 or Level 2 Access to Building Services Engineering qualification. You will usually have to have an interview and, depending on your age and experience, you may have to undertake a skills/aptitude test before the employer/provider/college will take you on.

Information about the Heating and Ventilating Intermediate and Advanced Level Apprenticeship can be found at <http://www.summitskills.org.uk/cgi-bin/go.pl/frameworks/index.html>

For more information about Heating and Ventilating apprenticeships, contact:

- BEST: www.best-ltd.co.uk or telephone 01628 607800
- JTL: www.jtltraining.com or telephone 08000 852 308
- Your local college

4.5 Qualifications

The Heating and Ventilating industry requires you to have a Level 2 or Level 3 qualification to achieve qualified status. The level will depend on the level of responsibility and the complexity of systems being worked on. Apprenticeships typically take between 2 & 4 years to complete. The following competence qualifications are available:

- Level 2 NVQ Diploma in Heating & Ventilating - Industrial & Commercial Installation
- Level 2 NVQ Diploma in Heating & Ventilating - Ductwork Installation
- Level 2 NVQ Diploma in Planned & Reactive Maintenance on Heating & Ventilating Equipment
- Level 3 NVQ Diploma in Heating & Ventilating - Ductwork Installation
- Level 3 NVQ Diploma in Heating & Ventilating - Industrial & Commercial Installation
- Level 3 NVQ Diploma in Planned and Reactive Maintenance on Heating & Ventilating Systems

Summit SKILLS

You will also be required to achieve the following functional skills:

- Maths Level 2
- English Level 2
- ICT Level 1

Always check with your training provider that the course you are planning to do will give you the qualification you need.

4.6 Data on employment and labour market trends and forecasts

There are around 9,000 businesses in the industry employing 38,000 people mostly white male. Around 90% of businesses employ fewer than 10 people.

The number of new people required each year to replace those who retire or leave the industry is around 2,100.

Around 60% of people in the industry work in Heating & Ventilating Installation while 20% work in Service & Maintenance and 20% work on Ductwork.

Females comprise less than 1% of the skilled workforce and ethnic minorities around 3% although this is improving albeit very slowly. Approximately 1.4% of the workforce is from Indian, Pakistani or Bangladeshi backgrounds.

The majority (63%) of the workforce are aged between 35 and 54.

From 2010 onwards, there is likely to be an increase in the number of people required at technician and professional levels, thereby improving prospects for new entrants to the sector. This will particularly benefit graduates seeking to enter the industry and gain employment within consultancies.

4.7 Skill shortages

Because of the effects of the economic downturn in 2008-2010, the skill needs of the sector in 2011-2012 are likely to be met by the redeployment of displaced workers, in some regions. Therefore, recruitment to replace those retiring or leaving the industry is likely to be minimal.

4.8 Information on opportunities for adults changing career direction

Typical progression routes in this industry are into technician (the collective term that is used to broadly describe a diverse range of jobs normally qualified to Level 3/4, Higher National Certificate or Foundation Degree level or equivalent), supervisory management or professional building services engineering roles. Many qualified people also run their own businesses.

Summit SKILLS

Technician and professional roles typically sought after by experienced people (10-15 years) working in the sector are:

- Contract or Project Engineer
- Commissioning Engineer
- Controls Engineer
- Contract or Project Engineer
- Site Supervisor
- Design Engineer
- Contract or Project Manager
- Consulting Engineer
- Estimator/Quantity Surveyor
- Educator or Trainer
- Business Manager or Proprietor

For more information, see

<http://www.goodday.org.uk/public/cms/File/Good%20day/Technician%20Graduate%20Booklet%20final%2010%20July.pdf>.

If you want to move to or develop a career in one of the other industries within the sector, you will need to achieve the relevant Level 2 or Level 3 qualification to be recognised as qualified within that industry.

Opportunities are also available to upskill into industry-related Environmental Technologies Installation and Maintenance by achieving one or more of the following qualifications (each of which has the Level 3 Award in the Fundamental Principles and Requirements of Environmental Technology Systems embedded within it):

- Level 3 Award in the Installation of Solar Thermal Hot Water Systems
- Level 3 Award in the Installation & Maintenance of Solar Thermal Hot Water Systems
- Level 3 Award in the Installation of Heat Pump Systems (Non-refrigerant Circuits)
- Level 3 Award in the Installation & Maintenance of Heat Pump Systems (Non-refrigerant Circuits)

To identify how closely you meet the generic skills required to work in the sector and to find out which jobs you may be most suited to, review the job changer matrix found at

<http://www.goodday.org.uk/public/cms/File/LMI%20Job%20Changer%20Matrix.pdf>

4.9 Information on points of entry or transfer into the industry from another industry.

Heating and Ventilating is a little known industry and so it is rare as a career choice by young people, by those who are made redundant, by those changing career and by those returning to work after a break. Some work in Heating and Ventilating is very similar to work done by those who work in the plumbing and domestic heating industry.

You will need to achieve a Level 2 or Level 3 qualification to achieve qualified status, depending on the level of responsibility and the complexity of systems being worked on and this will take 2 to 4 years to complete whilst working in the industry.

Summit SKILLS

In order to work in the heating and ventilating industry, there are certain skills and traits you will need. These are the same, generic skills, whichever industry you work in but the levels may differ depending on the job you will be doing.

- Communicate
- Use Numbers
- Manage Information
- Demonstrate Positive Attitude & Behaviours
- Be Responsible
- Be Adaptable
- Learn Continuously
- Work Safely
- Work With Others
- Think and Solve Problems
- Participate in Projects and Tasks
- Customer Care
- Job Specific Aptitude
- Underpinning Knowledge
- Practical Skills & Techniques

Levels:

- 1 = Basic ability (I can get by)
- 2 = Medium ability (I am as good as other people)
- 3 = Advanced ability (I am really good at this)

If you are considering changing jobs to a career in the heating and ventilating industry, you may already have some of these. To find out how suited you would be, you might like to carry out the self-assessment found at <http://www.goodday.org.uk/public/cms/File/LMI%20Job%20Changer%20Matrix.pdf>.

4.10 Job profiles

The Heating and Ventilating & Building Services Engineer job profiles can be found at <http://www.goodday.org.uk/Careers/Careers-Information/103>

4.11 Case studies

Gemma Martland – Heating and Ventilating Apprentice
http://www.goodday.org.uk/public/cms/Media/GEMMA_MARTLAND_768K_Stream.wmv

Kieran Lacey – Ductwork Draughtsman
<http://www.goodday.org.uk/Careers/Case-Studies/41>

David Edwards - Project Engineer
http://www.goodday.org.uk/public/cms/Media/DAVID_EDWARDS_768K_Stream.wmv

Summit SKILLS

Ivan Chan – Senior Mechanical Engineer

http://www.goodday.org.uk/public/cms/Media/IVAN_CHAN_768K_Stream.wmv

Mary Ann Wright – Senior Engineer

<http://www.goodday.org.uk/Careers/Case-Studies/42>

4.12 FAQs

Question	Response
What qualifications do I need to start an apprenticeship?	You are expected to have a good level of education, GCSEs grade C or above in Maths, English and Science, or the Higher Diploma in either Engineering or Construction and the Built Environment (CBE) or, in Wales, the Welsh Baccalaureate.
Can I choose between a trade and a technical/professional job in the sector?	If you want to learn a trade, an apprenticeship is the best way in. If you want a technical/professional job, there are two entry routes - you can either start work immediately and do an apprenticeship, then go on to get a suitable Higher National Diploma, Foundation Degree or full degree; or you can go on to any of these straight after completing your A levels.
How long does it take before I am skilled enough to get full pay?	Once you have completed your apprenticeship (2-4 years) or technical/professional qualification, you will then need to gain further work experience for a few years before earning the top rates of pay. Often, pay increases are linked to achievement of qualifications.
Is it better to do a full-time course at college or take an apprenticeship?	Apprenticeships, although fewer in number than full-time places, provide the best route as they not only provide the knowledge required but the practical work experience as well. Higher National Diplomas and full honours degrees can be studied full time or part time whilst in employment. Foundation Degrees are designed to provide a higher education qualification with a vocational focus and should ideally be completed whilst in relevant employment to enable participation in appropriate work based learning as well as college or university based learning.
What qualifications will I need to work in Heating and Ventilating?	The Heating and Ventilating industry requires you to have a Level 2 or Level 3 qualification to achieve qualified status, depending on the level of responsibility and the complexity of systems being worked on.

Summit SKILLS

<p>Where can I find an employer?</p>	<p>You should begin by thinking about whether any members of your family or friends run or work for a heating and ventilating business or another business that employs heating and ventilating engineers – they may be able to help.</p> <p>There is a new website where you can look for local or national vacancies https://apprenticeshipvacancymatchingservice.lsc.gov.uk/navms/forms/candidate/visitorlanding.aspx.</p> <p>You could also try contacting businesses from your local Yellow Pages and adverts for apprentices sometimes appear in local newspapers and on websites such as Workthing or Monster. Your local Jobcentre may also be able to help.</p> <p>The Heating & Ventilating Contractors Association www.hvca.org.uk has a search facility on its website which enables you to find heating and ventilating businesses in your area or in other locations in the UK.</p> <p>The Chartered Institute of Building Services Engineers www.cibse.org also has a search facility which enables you to find Building Services Engineering businesses across the UK</p> <p>It is important to remember that employers take on apprentices based on the needs of their business and may change from year to year. The recession is having an impact on recruitment.</p>
<p>What does the aptitude test involve?</p>	<p>Colleges/Training providers use their own tests. These will generally include:</p> <ul style="list-style-type: none"> • 24hour clock & working with timing devices • Basic calculations • Calculating materials quantities • Calculating volumes • Mathematical series • Reading instruments • Taking measurements • Interpreting charts • Using formulae • Interpreting servicing/installation instructions (comprehension section) • Object recognition & applying logic <p>You may also be tested for colour blindness, depending on what work you will be doing, and will be asked to complete a health declaration form.</p>

Summit SKILLS

What will I be asked at an interview?	This will vary depending on the employer but you will usually be asked about: <ul style="list-style-type: none"> • your qualifications • previous work experience - in the trade or elsewhere • availability to travel and work away from home
What are the chances of me getting a job when I complete my training?	If you join as an apprentice or undertake a work-based qualification, you will already be employed as training cannot be completed without work experience. However, there is a great deal of competition for jobs and apprenticeships in this industry and employers only take the very best applicants, usually those with some work experience.
What is the difference between Plumbing & Domestic Heating and Heating & Ventilating?	Simply put, Plumbing & Domestic Heating provides sanitation systems and hot & cold water supplies within a building; heating controls the environmental temperature; and ventilating provides the pipes necessary to control air movement.
What is a CSCS Card and how do I get one?	CSCS stands for Construction Skills Certification Scheme and this is often mistaken as the card required by building services engineering workers. However, the correct card for anyone working in Heating and Ventilating occupations is the Engineering Services SKILLcard. Skillcards are increasingly demanded as proof of occupational competence by contractors, public and private clients and others. For more information about these cards and how to get one, visit http://www.skillcard.org.uk/index.html

4.13 Sources of additional information, web-links etc

General careers information can be obtained from our careers helpline 08000 688336. Further general information is also available on our careers website www.goodday.org.uk. Further information about Heating and Ventilating careers is available at <http://www.goodday.org.uk/Careers/What-is-Building-Services/40>

The following organisations are associated with the Heating and Ventilating industry:

- The Heating and Ventilating Contractors' Association (HVCA) represents the interests of firms active in the design, installation, commissioning and maintenance of heating, ventilating, Air Conditioning and Refrigeration (HVACR) products and equipment www.hvca.org.uk

4.14 Heating and Ventilating Regional Information

4.14.1 East Midlands

There are 3,290 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 142.

4.14.2 East of England

There are 4,620 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 205.

4.14.3 London

There are 6,220 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 231.

4.14.4 North East

There are 2,850 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 103.

4.14.5 North West

There are 6,190 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 241.

4.14.6 South East

There are 6,620 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 287.

4.14.7 South West

There are 4,810 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 188.

4.14.8 West Midlands

There are 3,970 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 174.

4.14.9 Yorkshire and the Humber

There are 8,020 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 313.

5. Air Conditioning and Refrigeration

5.1 A brief description of what the industry covers at UK level

From maintaining a comfortable air temperature and humidity in a multi-screen cinema to keeping blood at the right temperature for lifesaving operations, the Air Conditioning and Refrigeration industry has become a fundamental part of our lives.

Highly skilled and very technical, the industry requires committed and enthusiastic people to install, service and maintain the systems we take for granted.

It's also an industry that takes its responsibilities to the environment very seriously. As an air conditioning or refrigeration engineer, technical knowledge and practical skills ensure refrigerant gases are handled in a safe and eco friendly way to reduce the impact on the environment as much as possible.

5.2 Information on careers available and new emerging jobs, transferability of skills career paths and opportunities for progression

Jobs currently available in the industry include (titles can vary between regions, nations and employers):

- **Refrigeration Installers/Service & Maintenance Operatives** install, service and maintain refrigeration systems in places such as supermarkets, hospitals, food processing plants and research establishments
- **Air Conditioning Installers/Service & Maintenance Operatives** install, service and maintain systems and equipment which control and maintain the quality, temperature and humidity of air within modern buildings

Key Common Attributes across all occupations involve:

- an aptitude for technical subjects or be practically orientated
- an interest in technology
- an ability to solve practical problems
- motivation to succeed within the industry/sector
- willingness to learn and apply that learning in the workplace/job role
- enthusiasm and attitude to work
- potential to complete the relevant qualifications/apprenticeship programmes
- ability to communicate effectively with a range of people
- be numerate and literate
- have good colour vision to recognise colour coded wires and components
- ability to work at heights or in confined spaces
- willingness to undergo a police check (for example when working with children and vulnerable adults)

Typical progression routes from this industry are into technician (the collective term that is used to broadly describe a diverse range of jobs normally qualified to NVQ Level 3/4, Higher National Certificate or Foundation Degree level or equivalent) or professional building service engineering roles. For more information, see

<http://www.goodday.org.uk/public/cms/File/Good%20day/Technician%20Graduate%20Booklet%20final%2010%20July.pdf>.

5.3 Information on pay scales in the industry

Pay scales in the industry vary depending on, among other things, the employer, the number of hours you are prepared to work, your location and any company bonus schemes.

As a guide:

- First-year apprentices start on around £10,000 a year
- Newly-qualified workers earn between £20,000 and £27,000 a year
- Experienced workers earn around £30,000 a year

5.4 Information on entry requirements, application processes (e.g. Apprenticeships)

You must be employed to sign up to an Air Conditioning and Refrigeration Apprenticeship.

You are expected to have a good level of education, GCSEs grade C or above in Maths, English and Science, or the Higher Diploma in either Construction and the Built Environment or Engineering. You may also have completed the Level 1 or Level 2 Access to Building Services Engineering qualification. You will usually have to have an interview and, depending on your age and experience, you may have to undertake a skills/aptitude test before the employer/provider/college will take you on.

Information about the Air Conditioning and Refrigeration Intermediate and Advanced Level Apprenticeships can be found at <http://www.summitskills.org.uk/cgi-bin/go.pl/frameworks/index.html>

For more information about Air Conditioning and Refrigeration apprenticeships, contact:

- BEST: www.best-ltd.co.uk or telephone 01628 607800
- Your local college

5.5 Qualifications

The Air Conditioning and Refrigeration industry requires you to have a Level 2 or Level 3 qualification to achieve qualified status. The level will depend on the level of responsibility and the complexity of systems being worked on. Apprenticeships typically take between 2 & 4 years to complete. The following competence qualifications are available:

- Level 2 NVQ Diploma in Installing & Maintaining Refrigeration Systems
- Level 2 NVQ Diploma in Installing, Testing and Maintaining Air Conditioning and Heat Pump Systems
- Level 3 NVQ Certificate in Installing & Commissioning Air Conditioning and Heat Pump Systems
- Level 3 NVQ Certificate in Installing & Commissioning Refrigeration Systems
- Level 3 NVQ Certificate in Servicing and Maintaining Air Conditioning and Heat Pump Systems
- Level 3 NVQ Certificate in Servicing and Maintaining Refrigeration Systems

Summit SKILLS

You will also be expected to achieve the following Functional Skills:

- Maths Level 2
- English Level 2
- ICT Level 1

Always check with your training provider that the course you are planning to do will give you the qualification you need.

5.6 Data on employment and labour market trends and forecasts

There are around 4,500 businesses in the industry employing 19,000 people mostly white male. Around 90% of businesses employ fewer than 10 people.

The number of new people required each year to replace those who retire or leave the industry is around 1,020.

About 65% of people in the industry work in Refrigeration while the other 35% work in Air Conditioning.

Females comprise less than 1% of the skilled workforce and ethnic minorities around 3% although this is improving albeit very slowly. Approximately 1.4% of the workforce is from Indian, Pakistani or Bangladeshi backgrounds.

The majority (63%) of the workforce are aged between 35 and 54.

From 2010 onwards, there is likely to be an increase in the number of people required at technician and professional levels, thereby improving prospects for new entrants to the sector. This will particularly benefit graduates seeking to enter the industry and gain employment within consultancies.

5.7 Skill shortages

Because of the effects of the economic downturn in 2008-2010, the skill needs of the sector in 2011-2012 are likely to be met by the redeployment of displaced workers, in some regions. Therefore, recruitment to replace those retiring or leaving the industry is likely to be minimal.

5.8 Information on opportunities for adults changing career direction

Typical progression routes in this industry are into technician (the collective term that is used to broadly describe a diverse range of jobs normally qualified to NVQ Level 3/4, Higher National Certificate or Foundation Degree level or equivalent), supervisory management or professional building services engineering roles. Many qualified people also run their own businesses.

Summit SKILLS

Technician and professional roles typically sought after by experienced people (10-15 years) working in the sector are:

- Contract or Project Engineer
- Commissioning Engineer
- Controls Engineer
- Service and Maintenance Engineer
- Contract or Project Engineer
- Site Supervisor
- Design Engineer
- Contract or Project Manager
- Consulting Engineer
- Estimator/Quantity Surveyor
- Educator or Trainer
- Business Manager or Proprietor

For more information, see

<http://www.goodday.org.uk/public/cms/File/Good%20day/Technician%20Graduate%20Booklet%20final%2010%20July.pdf>.

If you want to move to or develop a career in one of the other industries within the sector, you will need to achieve the relevant Level 2 or Level 3 qualification to be recognised as qualified within that industry.

Opportunities are also available to upskill into industry-related Environmental Technologies Installation and Maintenance by achieving one or more of the following qualifications (each of which has the Level 3 Award in the Fundamental Principles and Requirements of Environmental Technology Systems embedded within it):

- Level 3 Award in the Installation of Heat Pump Systems (Non-refrigerant Circuits)
- Level 3 Award in the Installation & Maintenance of Heat Pump Systems (Non-refrigerant Circuits)

To identify how closely you meet the generic skills required to work in the sector and to find out which jobs you may be most suited to, review the job changer matrix found at

<http://www.goodday.org.uk/public/cms/File/LMI%20Job%20Changer%20Matrix.pdf>

5.9 Information on points of entry or transfer into an industry from another industry

The Air Conditioning and Refrigeration industry is a rare choice of career by those who are made redundant, by those changing career and by those returning to work after a break. You will need to achieve a Level 2 or Level 3 qualification to achieve qualified status, depending on the level of responsibility and the complexity of systems being worked on and this will take 2 to 3 years to complete whilst working in the industry.

Summit SKILLS

In order to work in the air conditioning and refrigeration industry, there are certain skills and traits you will need. These are the same, generic skills, whichever industry you work in but the levels may differ depending on the job you will be doing.

- Communicate
- Use Numbers
- Manage Information
- Demonstrate Positive Attitude & Behaviours
- Be Responsible
- Be Adaptable
- Learn Continuously
- Work Safely
- Work With Others
- Think and Solve Problems
- Participate in Projects and Tasks
- Customer Care
- Job Specific Aptitude
- Underpinning Knowledge
- Practical Skills & Techniques

Levels:

- 1 = Basic ability (I can get by)
- 2 = Medium ability (I am as good as other people)
- 3 = Advanced ability (I am really good at this)

If you are considering changing jobs to a career in the Air Conditioning and Refrigeration industry, you may already have some of these. To find out how suited you would be, you might like to carry out the self-assessment found at <http://www.goodday.org.uk/public/cms/File/LMI%20Job%20Changer%20Matrix.pdf>.

5.10 Job profiles

The Air Conditioning and Refrigeration & Building Services Engineer job profiles can be found at <http://www.goodday.org.uk/Careers/Careers-Information/103>

5.11 Case studies

Martin Davey – Air Conditioning and Refrigeration Apprentice
<http://www.goodday.org.uk/Careers/Case-Studies/43>

David O'Brien – Refrigeration Apprentice
http://www.goodday.org.uk/public/cms/Media/DAVID_OBRIEN_768K_Stream.wmv

David Edwards - Project Engineer
http://www.goodday.org.uk/public/cms/Media/DAVID_EDWARDS_768K_Stream.wmv

Ivan Chan – Senior Mechanical Engineer

Summit SKILLS

http://www.goodday.org.uk/public/cms/Media/IVAN_CHAN_768K_Stream.wmv

Mary Ann Wright – Senior Engineer

<http://www.goodday.org.uk/Careers/Case-Studies/42>

5.12 FAQs

Question	Response
What qualifications do I need to start an apprenticeship?	You are expected to have a good level of education, GCSEs grade C or above in Maths, English and Science, or the Higher Diploma in either Engineering or Construction and the Built Environment (CBE) or, in Wales, the Welsh Baccalaureate.
Can I choose between a trade and a technical/professional job in the sector?	If you want to learn a trade, an apprenticeship is the best way in. If you want a technical/professional job, there are two entry routes - you can either start work immediately and do an apprenticeship, then go on to get a suitable Higher National Diploma, Foundation Degree or full degree; or you can go on to any of these straight after completing your A levels.
How long does it take before I am skilled enough to get full pay?	Once you have completed your apprenticeship (2-4 years) or technical/professional qualification, you will then need to gain further work experience for a few years before earning the top rates of pay. Often, pay increases are linked to achievement of qualifications.
Is it better to do a full-time course at college or take an apprenticeship?	Apprenticeships, although fewer in number than full-time places, provide the best route as they not only provide the knowledge required but the practical work experience as well. Higher National Diplomas and full honours degrees can be studied full time or part time whilst in employment. Foundation Degrees are designed to provide a higher education qualification with a vocational focus and should ideally be completed whilst in relevant employment to enable participation in appropriate work based learning as well as college or university based learning.
What qualifications will I need to work in Air Conditioning and Refrigeration?	The Air Conditioning and Refrigeration industry requires you to have a Level 2 or Level 3 qualification to achieve qualified status, depending on the level of responsibility and the complexity of systems being worked on

Summit SKILLS

<p>Where can I find an employer?</p>	<p>You should begin by thinking about whether any members of your family or friends run or work for an air-conditioning or refrigeration business or another business that employs air-conditioning or refrigeration engineers – they may be able to help.</p> <p>There is a new website where you can look for local or national vacancies https://apprenticeshipvacancymatchingservice.lsc.gov.uk/navms/forms/candidate/visitorlanding.aspx.</p> <p>You could also try contacting businesses from your local Yellow Pages and adverts for apprentices sometimes appear in local newspapers and on websites such as Workthing or Monster. Your local Jobcentre may also be able to help.</p> <p>The Heating & Ventilating Contractors Association www.hvca.org.uk has a search facility on its website which enables you to find air conditioning and refrigeration businesses in your area or in other locations in the UK.</p> <p>The Chartered Institute of Building Services Engineers www.cibse.org also has a search facility which enables you to find Building Services Engineering businesses across the UK</p> <p>It is important to remember that employers take on apprentices based on the needs of their business and may change from year to year. The recession is having an impact on recruitment.</p>
<p>What does the aptitude test involve?</p>	<p>Colleges/Training providers use their own tests. These will generally include:</p> <ul style="list-style-type: none"> • 24hour clock & working with timing devices • Basic calculations • Calculating materials quantities • Calculating volumes • Mathematical series • Reading instruments • Taking measurements • Interpreting charts • Using formulae • Interpreting servicing/installation instructions (comprehension section) • Object recognition & applying logic <p>You may also be tested for colour blindness, depending on what work you will be doing, and will be asked to complete a health declaration form.</p>

Summit SKILLS

<p>What will I be asked at an interview?</p>	<p>This will vary depending on the employer but you will usually be asked about:</p> <ul style="list-style-type: none"> • your qualifications • previous work experience - in the trade or elsewhere • availability to travel and you propose to do it
<p>What are the chances of me getting a job when I complete my training?</p>	<p>If you join as an apprentice or undertake a work-based qualification, you will already be employed as training cannot be completed without work experience. However, there is a great deal of competition for jobs and apprenticeships in this industry and employers only take the very best applicants, usually those with some work experience.</p>
<p>What is a CSCS Card and how do I get one?</p>	<p>CSCS stands for Construction Skills Certification Scheme and this is often mistaken as the card required by building services engineering workers. However, the correct card for anyone working in Air Conditioning and Refrigeration occupations is the Engineering Services SKILLcard.</p> <p>Skillcards are increasingly demanded as proof of occupational competence by contractors, public and private clients and others.</p> <p>For more information about these cards and how to get one, visit http://www.skillcard.org.uk/index.html</p>

5.13 Sources of additional information, web-links etc

General careers information can be obtained from our careers helpline 08000 688336. Further general information is also available on our careers website www.goodday.org.uk. Further information about Air Conditioning and Refrigeration careers is available at <http://www.goodday.org.uk/Careers/What-is-Building-Services/20>

The following organisations are associated with the Air Conditioning and Refrigeration industry:

- The Heating and Ventilating Contractors' Association (HVCA) represents the interests of firms active in the design, installation, commissioning and maintenance of heating, ventilating, Air Conditioning and Refrigeration (HVACR) products and equipment www.hvca.org.uk
- The Air Conditioning and Refrigeration Industry Board (ACRIB) provides a forum for all interests which fall within or are served by the Air Conditioning and Refrigeration industry www.acrib.org.uk
- The Institute of Refrigeration is the professional association for individuals working in refrigeration and air conditioning www.ior.org.uk

5.14 Air Conditioning and Refrigeration Regional Information

5.14.1 East Midlands

There are 1,650 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 72.

5.14.2 East of England

There are 2,310 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 103.

5.14.3 London

There are 3,110 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 115.

5.14.4 North East

There are 1,430 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 51.

5.14.5 North West

There are 3,240 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 121.

5.14.6 South East

There are 3,310 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 44.

5.14.7 South West

There are 2,410 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 94.

5.14.8 West Midlands

There are 1,980 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 87.

5.14.9 Yorkshire and the Humber

There are 2,470 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 96.

6. Electrical and Electronic Servicing

6.1 A brief description of what the industry covers at UK level

Working in this industry, you may work with signal reception, which deals with aerial systems in residences and blocks of flats as well as individual private homes; consumer electronics, such as TVs, audio systems and DVD players; or domestic electrical appliances like washing machines, microwaves and refrigerators. Whichever you choose, you'll cover installation, servicing and maintenance procedures.

Your day-to-day work will include installing and servicing aerial and satellite systems, enhancing existing aerial systems to receive digital television; installing and servicing television receivers and home cinema systems, servicing DAB radios and DVD players/recorders; and maintaining home laundry appliances, fridge freezers and cooking appliances.

While some people work "on call", there are lots of people employed by manufacturers and manufacturer approved service agents and high street retailers.

For this career, you'll need a keen interest in technology, good analytical skills to work out what's causing a device to fail, and practical skills to fix it. A lot of the work involves identifying cables and components by colour; therefore, normal colour vision is important.

6.2 Information on careers available and new emerging jobs, transferability of skills career paths and opportunities for progression

Jobs currently available in the industry include (titles can vary between regions, nations and employers):

- **TV Service Engineers/Technicians** install and service TV & consumer electronics systems including Televisions, DVD players, HI-FI systems & Games Consoles (often known as "brown goods" or "consumer electronics")
- **Domestic Appliance Service Engineers** install and service a wide range of domestic appliances including washing machines, dishwashers, cookers, fridges and freezers, as well as smaller items such as vacuum cleaners, microwave ovens and irons (often known as "white goods")
- **Aerial Installers** install and service signal reception equipment such as TV aerials, satellite dishes & systems both in domestic dwellings and in large buildings such as hospitals, hotels and multi-dwelling housing complexes. This may involve working at heights depending on the type of installation being worked on

Key Common Attributes across all occupations involve:

- an aptitude for technical subjects or be practically orientated
- an interest in technology
- an ability to solve practical problems
- motivation to succeed within the industry/sector
- willingness to learn and apply that learning in the workplace/job role
- enthusiasm and attitude to work
- potential to complete the relevant qualifications/apprenticeship programmes

Summit SKILLS

- ability to communicate effectively with a range of people
- be numerate and literate
- have good colour vision to recognise colour coded wires and components
- ability to work at heights or in confined spaces
- willingness to undergo a police check (for example when working with children and vulnerable adults)

Typical progression routes from this industry are from Level 2 (diagnosis of faults and simple repairs) to Level 3 (diagnosis of faults and more complex repairs). Very few people enter this industry directly at Level 3. Many Domestic Appliance Service Engineers become self-employed and run their own businesses. For more information, see <http://www.goodday.org.uk/public/cms/File/Good%20day/Technician%20Graduate%20Booklet%20final%2010%20July.pdf>.

6.3 Information on pay scales in the industry

Pay scales in the industry vary depending on, among other things, the employer, company bonuses and commission, and your location.

As a guide:

- Apprentices may earn between £8,000 and £12,000 a year
- Qualified Workshop or Field Technicians may earn between £15,000 and £22,000 a year
- A Service Manager may earn around £20,000 a year

6.4 Information on entry requirements, application processes (e.g. Apprenticeships)

You must be employed to sign up to an Electrical and Electronic Servicing Apprenticeship.

You are expected to have a good level of education, having studied Maths, English and Science (preferably Physics) at GCSE Level. You will usually have to have an interview and, depending on your age and experience, you may have to undertake a skills/aptitude test before the employer/provider/college will take you on.

Information about the Electrical and Electronic Servicing Apprenticeships can be found at <http://www.summitskills.org.uk/cgi-bin/go.pl/frameworks/index.html>

For more information about Electrical and Electronic Servicing apprenticeships, contact:

- BEST: www.best-ltd.co.uk or telephone 01628 607800
- Your local college

6.5 Qualifications

The Electrical and Electronic Servicing industry requires you to have an Level 2 or Level 3 qualification to achieve qualified status. The level will depend on the responsibility and the complexity of systems being worked on. The following Apprenticeships are available and typically take between 2 & 4 years to complete. The following competence qualifications are available:

Summit SKILLS

- Level 2 NVQ Diploma in Installing & Servicing Signal Reception Systems
- Level 2 NVQ Certificate in Installing Consumer Electronics and Electrical Products
- Level 3 NVQ Diploma in Installing, Servicing & Commissioning Signal Reception Systems
- Level 2 NVQ Diploma in Installing, Servicing & Commissioning Consumer Electronics and Electrical Products

You will also need to achieve the following Functional Skills:

- Maths Level 2
- English Level 2
- ICT Level 1

Always check with your training provider that the course you are planning to do will give you the qualification you need.

6.6 Data on employment and labour market trends and forecasts

Businesses in this industry fall into three groups: those which deal with installation and repair of “brown goods”; those that deal with “white goods” and those that cover both. Engineers are employed either directly by manufacturers; by agencies working on behalf of manufacturers; or by independent retailers/repairers.

Although the number of engineers working in the UK is not known, all areas of this industry have seen a decline in the number of engineers mainly due to consumers tending to replace items rather than have them repaired.

The independent retailers/repairers are usually small businesses employing very few engineers. Agencies usually employ between 5 & 15 engineers whilst the manufacturers employ 80-120.

Females comprise less than 1% of the skilled workforce.

The average age of the workforce is around 45 with those working with “brown goods” being older than those working with “white goods”.

6.7 Skill shortages

As the average age of engineers in the industry is in the mid-40s, there is a need for a small number of replacements – given the decline in the industry – usually in the form of apprentices/trainees.

Additionally, because of the upgrade from analog to digital, more installation engineers will be required to fulfill demand levels until 2012 and, with the Olympics (2012) and potential hosting of the World Cup (2018), more engineers may be required. However, it is anticipated that these employment levels will be spikes rather than sustainable.

6.8 Information on opportunities for adults changing career direction

Many Domestic Appliance Service Engineers become self employed and run their own businesses. For more information, see <http://www.goodday.org.uk/public/cms/File/Good%20day/Technician%20Graduate%20Booklet%20final%2010%20July.pdf>.

If you want to move to or develop a career in one of the other industries within the sector, you will need to achieve the relevant Level 2 or Level 3 qualification to be recognised as qualified within that industry.

6.9 Information on points of entry or transfer into an industry from another industry

The Electrical and Electronic Servicing industry is not a common choice of career by those who are made redundant, by those changing career and by those returning to work after a break. However, it has historically been attractive to those with an engineering background in the UK Armed Forces.

You will need to achieve an Level 2 or Level 3 qualification to achieve qualified status, depending on the level of responsibility and the complexity of systems being worked on and this will take 2 to 3 years to complete whilst working in the industry.

6.10 Job profiles

The Electrical and Electronic Servicing job profile can be found at <http://www.connexions-direct.com/jobs4u/index.cfm?pid=48&catalogueContentID=205>

6.11 Case studies

6.12 FAQs

Question	Response
What qualifications do I need to start an apprenticeship?	You are expected to have a good level of education, having studied Maths, English and Science (preferably Physics) at GCSE Level or, in Wales, the Welsh Baccalaureate.
How long does it take before I am skilled enough to get full pay?	Once you have completed your apprenticeship (2-4 years) or technical/professional qualification, you will then need to gain further work experience for a few years before earning the top rates of pay. Often, pay increases are linked both to achievement and qualifications.
What qualifications will I need to work in Electrical and Electronic Servicing?	The Electrical and Electronic Servicing industry requires you to have a Level 2 or Level 3 qualification to achieve qualified status, depending on the level of responsibility and the complexity of systems being worked on.

Summit SKILLS

<p>Where can I find an employer?</p>	<p>You should begin by thinking about whether any members of your family or friends run or work for a Electrical and Electronic Servicing business that employs people in this industry – they may be able to help.</p> <p>There is a new website where you can look for local or national vacancies https://apprenticeshipvacancymatchingservice.lsc.gov.uk.</p> <p>You could also try contacting businesses from your local Yellow Pages and adverts for apprentices sometimes appear in local newspapers and on websites such as Workthing or Monster. Your local Jobcentre may also be able to help.</p> <p>The Radio, Electrical and Television Retailers Association www.retra.co.uk. The Domestic Appliance Service Association www.dasa.org.uk and The Confederation of Aerial Industries www.cai.org.uk all have search facilities on their websites which enables you to find electrical and electronic servicing businesses in your area or in other locations in the UK.</p> <p>It is important to remember that employers take on apprentices based on the needs of their business and may change from year to year. The recession is having an impact on recruitment.</p>
<p>What does the aptitude test involve?</p>	<p>Colleges/Training providers use their own tests. These will generally include:</p> <ul style="list-style-type: none"> • 24hour clock & working with timing devices • Basic calculations • Reading instruments • Taking measurements • Interpreting charts • Using formulae • Interpreting servicing/installation instructions (comprehension section) • Object recognition & applying logic <p>You may also be tested for colour vision deficiency, depending on what work you will be doing, and will be asked to complete a health declaration form.</p>
<p>What will I be asked at an interview?</p>	<p>This will vary depending on the employer but you will usually be asked about:</p> <ul style="list-style-type: none"> • your qualifications • previous work experience - in the trade or elsewhere • availability to travel and you propose to do it

Summit SKILLS

What are the chances of me getting a job when I complete my training?	If you join as an apprentice or undertake a work-based qualification, you will already be employed as training cannot be completed without work experience. However, there is a great deal of competition for jobs and apprenticeships in this industry and employers only take the very best applicants, usually those with some work experience.
---	--

6.13 Sources of additional information, web-links etc

General careers information can be obtained from our careers helpline 08000 688336. Further general information is also available on our careers website www.goodday.org.uk.

The following organisations are associated with the Electrical and Electronic Servicing industry:

- The Radio, Electrical and Television Retailers Association is the UK's leading trade association for independent electrical retailers and servicing organisations www.retra.co.uk
- The Domestic Appliance Service Association (DASA) is the UK National Trade Association of independent domestic appliance service organisations www.dasa.org.uk
- The Confederation of Aerial Industries (CAI) is the recognised body for the aerial and satellite industry www.cai.org.uk
- The National Organisation of Installation and Service Engineers (NOISE) acts as a Trade Association for the Consumer Electronics Service Industry www.thenoiseuk.com

6.14 Electrical and Electronic Servicing Regional Information

6.14.1 East Midlands

There are 1,580 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 62.

6.14.2 East of England

There are 1,080 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 56.

6.14.3 London

There are 2,840 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 101.

Summit SKILLS

6.14.4 North East

There are 540 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 23.

6.14.5 North West

There are 1,740 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 71.

6.14.6 South East

There are 2,760 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 114.

6.14.7 South West

There are 1,830 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 70.

6.14.8 West Midlands

There are 880 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 46.

6.14.9 Yorkshire and the Humber

There are 600 people employed in the industry. The number of new people required each year to replace those who retire or leave the industry is around 33.