

# Bridging the skills gap – equipping the UK for a low carbon future

**Prepared for:** NWDA Sustainable Buildings Policy: Communities and Employment & Training Event

**Presented by:** Rob Wellman, Operations Manager, SummitSkills

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**The building services sector represents the electrotechnical, heating, ventilating, air conditioning, refrigeration and plumbing industries.**

**61,000 businesses in the sector:**

23,000 electrotechnical

13,000 heating, ventilating, air conditioning & refrigeration

22,000 plumbing

3,000 consultants

**613,000 employees throughout the sector**

The sector carries out £20 billion of work each year

- 3% of GNP (Gross National Product)

and at any one time is training **18,000 apprentices.**



## SummitSkills - the sector footprint

Typical Job Roles	Occupational Area					
	Electrotechnical	Electrical and Electronic Servicing	Heating and Ventilation	Domestic Heating	Plumbing	Refrigeration and Air Conditioning
<b>Skilled worker</b>	<ul style="list-style-type: none"> <li>• Electrical Installation</li> <li>• Electrical Maintenance</li> <li>• Audio Visual Systems Installation</li> <li>• Electrical Instrumentation Installation</li> <li>• Data/Communications Systems Installation</li> <li>• Electrical Panel Building</li> <li>• Electrical Machine Rewind and Repair</li> <li>• Building Management Systems Installation and Maintenance</li> <li>• Security Systems Installation</li> </ul>	<ul style="list-style-type: none"> <li>• Domestic Appliance Installation</li> <li>• Commercial Electronic Equipment Installation</li> <li>• Domestic Electronic Equipment Installation</li> <li>• Signal Reception Systems Installation</li> </ul>	<ul style="list-style-type: none"> <li>• Heating and Ventilating Ductwork Installation</li> <li>• Heating and Ventilating Industrial and Commercial Installation</li> <li>• Heating and Ventilation Systems Maintenance</li> <li>• Heating and Ventilation Systems Servicing and Commissioning</li> </ul>	<ul style="list-style-type: none"> <li>• Domestic Heating Systems Installation and Maintenance</li> </ul>	<ul style="list-style-type: none"> <li>• Domestic Plumbing Systems Installation and Maintenance</li> <li>• Industrial and Commercial Plumbing Systems Installation and Maintenance</li> </ul>	<ul style="list-style-type: none"> <li>• Refrigeration Systems Installation</li> <li>• Refrigeration Systems Testing and Commissioning</li> <li>• Refrigeration Systems Service and Maintenance</li> <li>• Air Conditioning Systems Installation</li> <li>• Air Conditioning Systems Testing and Commissioning</li> <li>• Air Conditioning Systems Service and Maintenance</li> </ul>
<b>Technical worker</b> (Roles stated may be across occupational areas)	<ul style="list-style-type: none"> <li>• Building Services Engineering Design Engineer</li> <li>• Building Services Engineering Commissioning Engineer</li> <li>• Building Services Estimator</li> <li>• Building Services Engineering Contract or Project Engineer</li> </ul>			<ul style="list-style-type: none"> <li>• Building Services Engineering Computer Aided Design Technician</li> <li>• Building Services Engineering Service and Maintenance Engineer</li> <li>• Building Services Engineering Quantity Surveyor</li> <li>• Building Services Engineering Site Supervisor</li> </ul>		
<b>Professional worker</b>	<ul style="list-style-type: none"> <li>• Higher level roles as stated for technical worker</li> <li>• Building Services Engineering Contract or Project Manager</li> </ul>			<ul style="list-style-type: none"> <li>• Building Services Engineering Consulting Engineer</li> </ul>		
<b>Environmental Technologies/ Microgeneration</b>	<p>The design, installation and maintenance of systems employing the following environmental technologies fall within the SummitSkills footprint:</p> <ul style="list-style-type: none"> <li>• Solar Water and Heating</li> <li>• Combined Heat and Power</li> <li>• Ground Source Heat Pumps</li> <li>• Air Source Heat Pumps</li> <li>• Biomass</li> <li>• Bio-Fuels (Liquid)</li> <li>• Rainwater Harvesting</li> <li>• Grey Water</li> <li>• Mechanical Heat Recovery Ventilation</li> <li>• Photovoltaics for Micro-generation</li> <li>• Micro Wind Energy</li> <li>• Micro Hydro Generation Systems</li> <li>• Fuel Cell Technology</li> </ul> <p>In relation to the above technologies, the footprint that is primarily covered by SummitSkills is typically associated with the production of electrical energy up to 50 kilowatts, and the production of heat up to 45 kilowatts thermal.</p>					

## Bridging the skills gap – equipping the UK for a low carbon future

The building services engineering sector sees work relating to environmental and renewable technologies systems as an extension of existing sector occupations

For operatives this is an extension of the skills at N/SVQ level 3

## Collaboration



Product  
Manufacturers



Awarding and  
certification  
bodies



Regional  
agencies



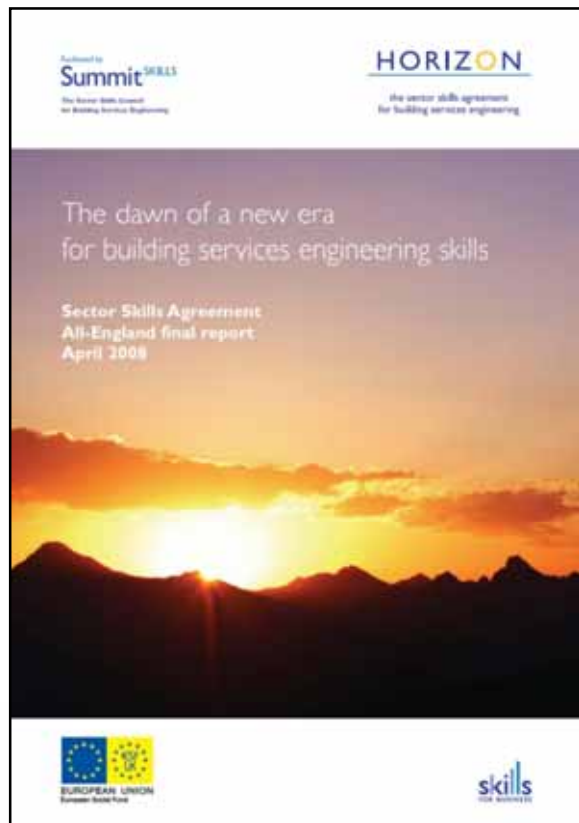
Training  
providers



Other trade and  
professional  
bodies



## Sector Skills Agreement



### 5 sector priorities:

- Professional Image and competence
- Communication and Information
- Training Provision
- Funding
- Management and Leadership

The Sector Skills Council  
for Building Services Engineering

## HOW TO USE THE CAREERS MAP

The map shows the career progression from entry level to the highest level of professional qualification. It is a guide to the career path and the skills and knowledge you will need to progress through the career stages. It is not a guarantee of success and it is not a prescription of what you should do.

It is important to understand that the career path is not a straight line. It is possible to move between different career stages at different points in your career. For example, you may move from an entry level position to a professional qualification level before moving to a typical career function.

When you start your career, you will need to gain the skills and knowledge that are required for the entry level position. As you progress through the career stages, you will need to gain the skills and knowledge that are required for the next career stage. This may involve further education and training, as well as gaining work experience.

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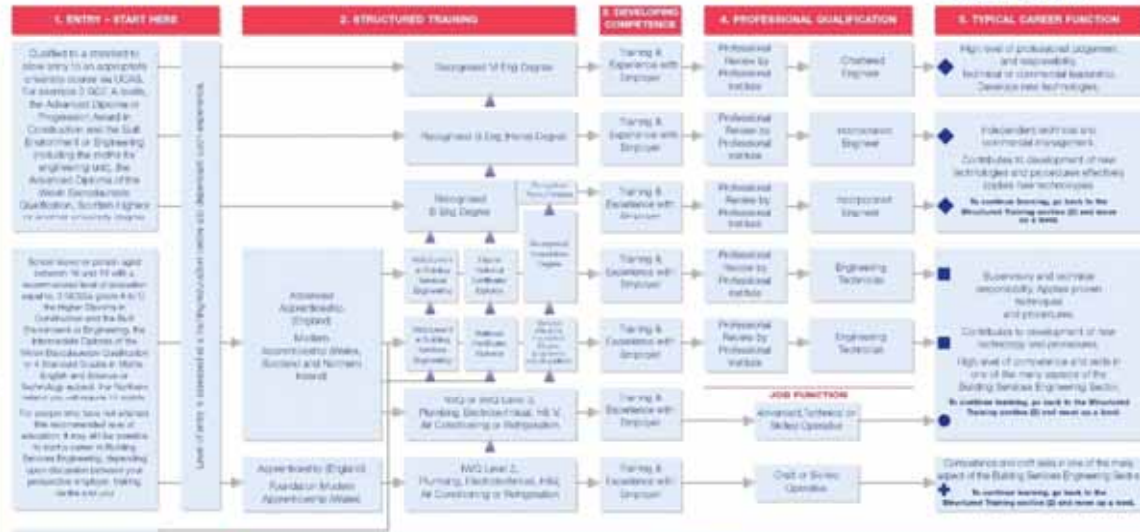
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Building Services Engineering  
Degree Route to Life

www.goodday.org.uk  
Careers Advice Line: 08000 688 336

## BUILDING SERVICES ENGINEERING CAREERS MAP



- 6. JOB FUNCTION**
- Highway Electrical Systems Installer**
    - Responsible for the installation, maintenance and repair of electrical systems on highways.
  - Installation Electrician (Buildings & Structures)**
    - Responsible for the installation, maintenance and repair of electrical systems in buildings and structures.
  - Instrumentation Installer/Engineer**
    - Responsible for the installation, maintenance and repair of instrumentation systems.
  - Maintenance Electrician**
    - Responsible for the maintenance and repair of electrical systems.
  - Electromechanical Panel Builder**
    - Responsible for the construction and repair of electromechanical panels.
  - Domestic Plumber**
    - Responsible for the installation, maintenance and repair of domestic plumbing systems.
  - Computer Aided Designer**
    - Responsible for the design and development of computer-aided design systems.
  - Electrical Repair and Revised Electrical**
    - Responsible for the repair and revision of electrical systems.
  - Security/Emergency/Control Systems Installation/Engineer**
    - Responsible for the installation, maintenance and repair of security, emergency and control systems.
  - Industrial and Commercial Plumber**
    - Responsible for the installation, maintenance and repair of industrial and commercial plumbing systems.
  - Sheet Metal Working Specialist**
    - Responsible for the fabrication and repair of sheet metal components.
  - Roofing and Ventilating Engineer**
    - Responsible for the installation, maintenance and repair of roofing and ventilating systems.
  - Air Conditioning Engineer**
    - Responsible for the installation, maintenance and repair of air conditioning systems.
  - Design Engineer**
    - Responsible for the design and development of engineering systems.
  - Contract or Project Manager**
    - Responsible for the management of engineering projects.
  - Commissioning Engineer**
    - Responsible for the commissioning and testing of engineering systems.
  - Site Supervisor**
    - Responsible for the supervision of engineering work on site.
  - Consulting Engineer**
    - Responsible for the provision of engineering consultancy services.
  - Estimator/Quantity Surveyor**
    - Responsible for the estimation and measurement of engineering work.
  - Business Manager or Proprietor**
    - Responsible for the management and operation of a business.
  - Educator and Trainer**
    - Responsible for the education and training of engineering students.
  - Service and Maintenance Engineer**
    - Responsible for the service and maintenance of engineering systems.
  - Instrument Installer**
    - Responsible for the installation and repair of instrumentation systems.
  - Filter/Blower**
    - Responsible for the installation and repair of filter and blower systems.
  - Domestic Heating Engineer**
    - Responsible for the installation and repair of domestic heating systems.
  - Refrigeration Engineer**
    - Responsible for the installation and repair of refrigeration systems.



## Bridging the skills gap – equipping the North West for a low carbon future

- Developed National Occupational Standards for Environmental Technologies
- Awarding and Certification Body qualifications update
- Integrated into Qualifications and Credit Framework for 2010
- Develop provision across the North West

## More information

- [www.SummmmitSkills.org.uk](http://www.SummmmitSkills.org.uk)
- Environmental Technologies
- Building Services Engineering Ambassador
- Rob Wellman 01744 616465  
[rob.wellman@summitskills.org.uk](mailto:rob.wellman@summitskills.org.uk)