

Heating & Ventilating

What does this career involve?

From the air grilles on a classroom wall, to the large networks of pipes that criss-cross factory ceilings - heating and ventilating systems often go unnoticed but they play a vital part in every building.

Whether it's a shop, office, sports arena or concert hall, they ensure we have fresh air and warmth when we're indoors. People working in the heating and ventilating (H&V) industry install and manage these systems.



Working in this industry also means you'll be installing systems to help customers reduce their carbon consumption and make buildings as energy efficient as possible, without wasting valuable fossil fuels

H&V engineers work with new and renewable heating systems like ground source heat pumps, which extract heat from the ground and pump it into a building, or air source heat pumps, that take the warmth from the outside air and pipe it indoors.

There are a variety of roles in the H&V industry to suit all interests:

- *Heating installers* install heating equipment and pipework systems in large buildings like office blocks, hospitals and schools
- *Ductwork installers* install ductwork and ventilation systems in large buildings like sports stadia, airport terminals and shopping centres
- *Domestic heating installers* install central heating systems in homes and ensure they work properly
- *Service and maintenance engineers* plan and carry out regular maintenance and repairs on all H&V systems to make sure they are always effective and efficient
- *Commissioning engineers* ensure the systems meet their original design specification by testing and checking carefully that they do what the customer needs them to
- *Control engineers* design and install controls that operate and adjust the H&V systems so they continually work in the way they should.

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What sort of person do I need to be?

There are lots of roles within this industry and they all need different skills.

You could be someone who enjoys designing the systems and making sure they fit in with the building's design requirements. Or you might use your skills to cut, shape, weld and join all the materials that create the H&V system itself and then install it in the building.

If you're a problem-solver you might be the person that spots faults with the system and fixes them, keeping them serviced on a regular basis to ensure they work efficiently and effectively.

Whether you're male or female, the heating and ventilating industry needs people that:

- have good practical and hand skills
- can follow technical drawings, building plans and other instructions
- can work carefully, methodically and safely
- can measure accurately
- have a head for heights and are prepared to work in all sorts of weather
- are willing to work in confined spaces
- are presentable with a pleasant manner
- have good written and verbal communication skills
- are good team players but also able to work on their own initiative
- can adapt to change
- have good problem-solving skills

What hours will I do and what's the working environment like?

You'll probably be working around a 40-hour week, but if you have a particular project deadline you might sometimes have to work additional hours, for instance evenings and weekends, to get the job finished on time.

Depending on what type of work you specialise in, you could be working in all types of buildings like offices, shopping centres and schools

You might also have to work on a construction site, which can be noisy, dusty and cold. Sometimes you may need to work in cramped and uncomfortable conditions in order to access the H&V equipment and you'll be working off the ground using equipment such as scaffolding.

Working in this industry usually means you're based locally, travelling from one project to the next. But some companies work across the whole country for their customers, so if you work for one of these firms you might be asked to stay overnight for short or long periods if a project is far from home.



When you're on a construction site you'll have to wear hard hats, high-visibility jackets, safety shoes and other similar equipment to make sure you stay safe.

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What salary and other benefits can I expect?

Your salary will vary depending on your employer and where you live in the UK, but as a guide you might expect:

- The starting salary as an apprentice may be around £9,100 to £11,250 a year.
- A newly-qualified installer may earn up to £20,000 a year.
- Experienced engineers may earn around £22,000 to £24,000 a year.

Some employers pay more, and you might get bonuses and overtime pay. There are national set rates that will cover your travelling time, travel expenses and accommodation costs.

What other interests would fit well with this career?

The work you'll do as a heating and ventilating engineer is underpinned by mechanics, electronics and mathematics. So if you're interested in these subjects, enjoy knowing how and why things work, and have an interest in environmental matters, this career could be a good fit for you.

What does the industry profile look like?

There are around 55,645 heating and ventilating engineers in the UK workforce. Most are employed by companies that specialise in H&V and electrical work, and they are mainly based in large cities.

How do I get into this industry?

Depending on which level you're going to work at, you'll need a National Vocational Qualification (NVQ) Level 2 or 3, or in Scotland both the Scottish Vocational Qualification (SVQ) Levels 2 and 3. There are also other training on top of the NVQ/SVQ that you'll have to complete in order to become fully qualified. If you're a young person you'll have to do this via an apprenticeship scheme straight from school or college and train on the job. Apprenticeships give you the underpinning knowledge and skills you need to work effectively and professionally.

You'll do both off-the-job training, where you learn at a college or training centre, and on-the-job training, where you apply your skills and knowledge while working on-site for your employer. Generally training will take between two and four years to complete, depending on the apprenticeship scheme.

We have produced guidance booklets, based on where you live, that provide more information on the different types of apprenticeship, entry requirements and the specific training you'll do:

- [England](#)
- [Northern Ireland](#)
- [Scotland](#)
- [Wales](#)

If you're not able to do an apprenticeship straight away, there are programmes around the UK that can help you to progress to an apprenticeship, further learning or a job. Speak to your local careers adviser to find out more.

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What if I'm an adult that wants to join this industry?

Some apprenticeship schemes across the UK are open to people over 25, although the number of places might be limited. Local colleges may have their own training schemes aimed at adults.



If you're over 25 you can still undertake the NVQ/SVQ without doing an apprenticeship.

To gain an NVQ/SVQ, you must be in employment or have the ability to be assessed on site, carrying out real work. Similar to an apprenticeship scheme, you should be prepared to gain the qualification over a number of years, not weeks or months. There is no quick fix to gaining the right qualifications and it will take around four years to complete.

Vacancies for qualified workers are usually advertised in local newspapers, job centres, and on websites such as [Monster](#) or [Workthing](#).

How can I progress further in this career?

If you want to do a degree course, many universities or similar institutions will accept a relevant qualification, or take your work experience into account instead of traditional academic qualifications.

Most large employers have a formal progression structure. If you work for one of these companies you may have the chance to take on more important projects and managerial responsibilities as you progress and gain experience, and could design systems which will have an even greater environmental impact

Self-employment is possible in this industry, but securing new contracts can be difficult. You may need to become a Chartered Engineer or another type of registered engineer if you want to set up your own business.

Once you are fully qualified there are also opportunities for you to work abroad, particularly in countries like the USA, the Far East and Australia.

