CONSTRUCTION EQUIPMENT ASSOCIATION

The Education Landscape

A guide for employers

About the CEA

The Construction Equipment Association is the trade association representing the UK construction equipment industry since 1942. We are recognised by the UK Government as the **voice** of the industry.

Our mission

To represent the interests of our members within the UK construction equipment industry, in a globally changing competitive environment.

Our vision

To be the voice of the construction equipment industry, deliver value to our and excellence to our members, be a positive influencing factor on government policy, and directly contributing to the sustainability and growth of the sector.

Introduction

A skilled work force is at the heart of every business. As a business leader you get enquiries to work with local schools, colleges and universities - and you'll probably have some questions given the education and skills landscape can be complex to understand. There are many different ways to get involved - but which are the best fit for your business, and how will they help connect you to your future workforce, or boost productivity by upskilling your current team?

That's why we've created this resource - the Education Landscape: A Guide for Employers. It describes options for working with schools, colleges and universities, young people* and older learners, and the benefits of doing so for your business. You can also find out how technical education, including apprenticeships, T Levels and Higher Technical Qualifications, can meet your skills needs.

In the accompanying Index you can find out more about the business benefits of different opportunities - from providing workplace experiences for students, using your industry expertise to help design courses, to getting training for your new employeesand existing staff. You can find the Index, along with a range of supporting resources, at **educationlandscape.org.uk**.

Developed in partnership with:

British Chambers of Commerce · CBI · fsb · IoD · The Careers & Enterprise Company · Department for Education · Gatsby

* The term young person is used to include students up to age 24. This includes those at schools, colleges, specialist schools or colleges, alternative providers, independent training providers, universities and more.

The benefits for business

Fresh perspectives

Working with education connects you to a diverserange of young people and professionals. These fresh perspectives can drive innovation, support social mobility and create a more vibrantand inclusive workplace. They can bring awareness of emerging trends and new ideas to your business, and help you reach new audiences. Placement students and apprentices also quickly acquire new skills and make a real contribution to your team as they do so.

Build partnerships

Connecting with schools, colleges and universities offers a strong value exchange. The institutions gain broader insight into your industry needs, and you can get involved in shaping the skills being taught in your local area, while benefitting from building your existing knowledge and expertise, for example, in developments in technology. This collaboration also demonstrates the widercontribution your business makes to the community.

Staff development

Getting your employees involved in education engagement activities can be rewarding and inspiring. It contributes to your current team's professional development, helping to build communication, leadership and management skills, and can support employee well-being and strengthen their loyalty to your company. Linking up with your local college or university can also open the door for technical training to upskill your existing staff.

Support your local community

Working with your local education institutions can contribute to your company's social responsibility and reputation. Your real-world input brings the curriculum to life and gives learning a concrete focus. It's also a great opportunity to inspire, inform and help young people - which is good for them for the community, and you.

New talent

Being involved with schools, colleges and universities is an opportunity to identify potential employees who are a good fit with your company. In the medium to longer-term this can reduce expensive and time-consuming recruitment activity, develop a talent pipeline for hard-to-fill vacancies and support succession, growth and workforce development planning for the future.

Ways to get involved

Supporting high-quality teaching

Your input into classes will ensure that teachers can share up-to-date knowledge, and gives you the opportunity to shape the skills being taught around your business needs. You could help design a course or support a student project, give teachers the opportunity to find out about current industry practice by hosting a site visit, teach a masterclass yourself, or even donatesome equipment or workshop time for students.

Providing expert guidance

Nobody knows your business like you do. Sharing your knowledge and expertise with government, and with the education institutions around you, will help to influence what is taught so that it is relevant to your business. You could work with a school or college as a governor, or you might contribute to the expert employer panels that shape technical education nationally or locally.

Providing experiences of the workplace

Nothing beats hands-on experience for gaining an insight into working life, and your business can also benefit in a number of ways. Opening your doors to young people is an opportunity to raise awareness and understanding of your company and industry, and to help students transition into the workplace. You could even have a future employee. Activities include hosting short workplace visits or longer industry placement opportunities.

Supporting students

Much of your future workforce is currently in education. Sharing your knowledge, experience and advice will inspire and inform their career choices - helping them to develop the confidence to move into a role that is right for them - and to be the right employee for you. Opportunities include giving a class careers talk or providing one-to-one mentoring for a student on a longer-term basis.

Work-based learning

Helping an individual learn while they work in your business is a great way to develop a motivated, skilled, and qualified employee. For example, apprenticeships offer real job experience while a person studies for a formal qualification. You can adapt these training programmes to meet the needs of your company and fill gaps within your workforce skillset. Managing students also offers professional development for existing employees.

For more information

To find out more about this wide range of opportunities take a look at **The Education Landscape: Index** or visit **educationlandscape.org.uk**. You will find more information about these different activities, the likely commitment required from your business, and the benefits they offer to you and the students.

Technical education

In England at age 16, young people have a range of options for the next step towards their career. The academic path, with GCSEs, A Levels and undergraduate degree courses, is well-understood. But not everyone is familiar with our technical education system and the many ways that the Government has been working with businesses to ensure that technical education meets employer needs and helps individuals gain good jobs.

What's key?

- **Employers are at the heart of our system for technical education.** Groups of employers are setting the standards for different occupations. Each occupational standard describes what a person needs to know and be able to do for a particular role. These standards are grouped into 15 technical education routes - from agriculture, to catering, to health and science. The Institute for Apprenticeships and Technical Education works with panels of employer experts to make sure that the standards stay up-to-date.

- **Apprentices** are employed and learn through on and off-the-job training. An apprentice develops the knowledge, skills and behaviours set out in the employer designed standardfor their occupation. They are assessed against this standard so employers can be sure individuals can do the job. Most of the apprentice's training is on-the-job, often working with a mentor, and additional off-the-job training provided by a training organisation. Depending on the occupation an apprenticeship can take between one and six years to complete.

- **T Levels** are two-year courses that launched in September 2020. They will be the main college-based technical option for students at age 16, sitting alongside apprenticeships and A Levels. T Levels offer students a mixture of classroom learning and on-the-job experience during an industry placement of around 45 days. The content of T Levels has been developed with employers, using the occupational standards as their reference. Alongside their technical knowledge, T Level students also build maths, English and digital skills. So you can be sure that these new qualifications meet the needs of industry and prepare students for work, further training or study.

- **Higher Technical Qualifications** are specialised post-18 training at higher levels 4 and 5 (A Levels and T Levels are at level 3). Employer expert panels decide which qualifications meet the employer designed occupational standards. Only level 4 and 5 qualifications that do this are approved by the Institute as a Higher Technical Qualification. These qualifications are awarded a quality mark so you can be sure they develop the knowledge and skills needed by employers.

Supporting engineering scholarships

Webtec, a specialist in hydraulic measurement and control, has been supporting The Arkwright Engineering Scholarships since 2014.

Following the passing of Webtec's founder, Roy Cuthbert, in 2013, the company sought a meaningful way to continue his legacy of promoting engineering to young people. The Arkwright Scholarship was identified as the perfect platform for this, leading to the creation of the Roy Cuthbert Arkwright Scholarship. Since then, Webtec has sponsored at least one scholar every year, sometimes two.

Challenge

Webtec recognised a need to formally structure its engagement with young engineers. Roy Cuthbert had long worked with schools, colleges, and universities to provide engineering work experience, but there was no established framework for long-term support.

Two key challenges drove Webtec's decision to support Arkwright Scholars:

1. **Inspiring young engineers** – encouraging local students to consider careers in engineering and manufacturing.
2. **Future workforce development** – ensuring a steady stream of talented candidates for Webtec's future apprenticeships and roles in engineering, R&D, manufacturing, and sales.

Solution

Webtec partnered with the Arkwright Engineering Scholarship programme, which identifies high-potential students and connects them with industry sponsors. The scholarship process includes rigorous selection, ensuring that only the most promising young engineers receive support.

Webtec's involvement includes:

- Sponsoring scholars with £2,500 over two years
- Providing mentorship and career guidance
- Offering Engineering Blue Day, giving scholars hands-on experience in a real engineering environment
- Facilitating work placements and internships.

Scholars apply during Year 11 in England and Wales, S4 in Scotland, or Year 12 in Northern Ireland. Webtec then selects scholars from a shortlist provided by Arkwright, meeting them for the first time at the prestigious prize-giving ceremony in London.

Experience and implementation

Once selected, scholars can engage with Webtec at various levels, depending on their interest.

- Every scholar is offered a mentor from Webtec's engineering team.
- Many participate in Engineering Blue Day, where they experience a day in the life of a design engineer.
- Some go on to do week-long work placements to gain deeper exposure to real-world engineering challenges.
- Scholars often maintain a relationship with Webtec beyond their scholarship period, leading to further placements during university studies.

Impact

In addition to the Arkwright Scholarship, Webtec also supports local schools and has introduced an annual award called The Webtec Award for Resilience in Technology at Swavesey College, which was awarded for the first time in December. Webtec also sponsors a local boys' football team. While these initiatives fall outside the scope of the Arkwright programme, they form a crucial part of Webtec's wider outreach efforts to encourage STEM subjects and engineering opportunities for all students.

Other activities include participation in careers fairs and engagement with local schools to inspire future engineers.

For the scholars, Webtec's sponsorship provides:

- Real-world engineering exposure beyond academic theory.
- Hands-on experience in R&D, machining, assembly, test, IT, marketing, procurement, finance, and sales.
- Mentorship from experienced engineers, helping shape their career direction.

For Webtec, the impact is equally significant:

- A consistent pipeline of young engineering talent.
- Improved links with universities and young engineers.
- The opportunity to nurture talent from an early stage, reducing recruitment challenges in the future.

Industry importance

Engineering scholarships like Arkwright provide a crucial link between academic learning and industry experience. Schools often lack strong industry connections, and companies have limited time to develop early talent pipelines. Arkwright acts as a bridge, ensuring talented students get the exposure they need while allowing companies like Webtec to engage with top-tier future engineers.

Advice for other companies

For businesses looking to develop young engineering talent, Webtec recommends:

1. Defining a clear Outreach strategy aligned with company goals.
2. Partnering with an established initiative such as The Arkwright Scholarship (part of The Smallpeice Trust).
3. Ensuring engagement extends beyond financial sponsorship to include mentoring, work placements, and career opportunities.
4. Encouraging company-wide awareness to integrate scholarship support with work placements, recruitment, and workforce development.

By taking these steps, businesses can play a vital role in nurturing the next generation of engineers while securing future talent for their own companys.

Success story

One scholar, Ethan Green, sponsored by Webtec four years ago has had an outstanding journey.

After securing the Arkwright Scholarship, he worked for Webtec during university holidays. Webtec later sponsored his Aeronautical Engineering degree at Loughborough University. He completed a one-year work placement at Webtec as part of his 'thick sandwich' degree. In 2024, he was a finalist for Young Manufacturer of the Year in The Manufacturer MX Awards.

This case highlights how early engagement through the Arkwright Scholarship can lead to long-term benefits for both the scholar and Webtec.

Award-winning apprentice at RSP

Joel Gardener won the Central Bedfordshire College Apprentice of the Year Award.

Many of the engineers at RSP UK Suction Excavators, including their director, began their careers as apprentices. RSP is a leading player in a specialised market, making product knowledge and procedural expertise essential to our apprenticeship program. This ensures apprentices acquire the specific skills and knowledge required for our ever-evolving industry. While creating opportunities for individuals, we also support the industry's growth by providing career pathways for young people.

Standing out from the crowd

Initially uncertain about his career path, Joel took the opportunity to embark on an internship at RSP UK, rotating across various departments. This experience helped him identify his strengths and gain clarity on the career journey he wanted to pursue. After working in the RSP UK workshop alongside the engineering team, Joel discovered his passion for the field and realised it was the right fit for him. Impressed by his approach and attitude, the RSP UK team recognised his potential. When Joel expressed his desire to develop his skills further in an engineering role, he was quickly enrolled as RSP UK's first apprentice!

Joel has participated in various projects at RSP UK, including major overhauls, servicing and repair work, and electronic radio control testing. The various dynamic tasks and responsibilities he has taken on have been instrumental in his development, honing his skills and technical expertise to become an outstanding engineer in this specialised market! Joel has made significant progress and has become a valuable member of the RSP UK team. He has gained practical experience that has enhanced his technical skills alongside his college education.

Skills and training

At RSP UK, apprentices receive comprehensive training and hands-on experience to become skilled engineers. This includes supporting the team with equipment maintenance, troubleshooting and diagnostic testing, service documentation, parts management, workshop support, helping to build a strong foundation for their careers. Additionally, apprentices develop customer service skills through both virtual and face-to-face interactions with customers, further preparing them for their professional future.

Positive impact

At RSP UK, the environment is fast-paced, with customer queries and tasks arising at any time and often requiring quick turnaround times. This makes the role both demanding and challenging. However, Joel's exceptional work rate and positive attitude have enabled him to thrive in the engineering team's dynamic environment. Additionally, Joel possesses a natural problem-solving ability, enhancing his effectiveness in the role.

Joel has distinguished himself through his dedication and passion. He consistently goes above and beyond, applying himself fully in all areas, even when faced with challenging aspects of the training. His eagerness to learn and grow and his positive attitude greatly impact the team and add significant value.

Award-winning work

Joel was incredibly grateful to be nominated for the award, feeling that it has significantly boosted his career and increased his confidence. The award further motivated Joel, strengthening his determination to continue in this industry and fuelling his drive for success.

Developing future engineers

It is remarkable that an apprentice at RSP UK received the Apprentice of the Year award! This accomplishment highlights RSP UK's commitment to and investment in apprenticeships, emphasising the value we place on developing talent from within.

The award has been a source of pride for the entire RSP UK team and is a testament to the engineering team's dedication. They have worked closely with Joel, supporting his growth and development. It reflects our high standards and commitment to delivering engineering expertise of the highest quality while also aiding in retention and attracting new talent to RSP UK. This recognition reinforces our dedication to investing time and resources into apprenticeships, providing career opportunities for young people and individuals eager to pursue engineering careers.

Family business

As a family business, having Joel as an apprentice and seeing him receive this award is incredibly meaningful. It's a source of immense pride to watch someone from within our extended family not only embrace the opportunities we provide but also excel and be recognised for their hard work and dedication.

Joel's achievement reflects our values - commitment, growth and a strong work ethic. It reinforces our belief in investing in talent from within and supporting individuals toy develop their skills and careers, and highlights the impact of our efforts to nurture talent in this industry.

Joel said: "Receiving this award is an incredible honour and a huge confidence boost for me. It's a clear acknowledgment of the hard work I've put in, and it motivates me to keep pushing myself to learn and grow.

My experience at RSP UK has been amazing. The support from the team and the hands-on experience I've gained have been invaluable in developing my skills and understanding of the industry.

Looking ahead, I want to continue building strong relationships with RSP customers and deepen my knowledge and expertise in this field. My goal is to keep improving and take on more responsibilities within RSP UK, working my way up in the business."

From graduate to design engineer

Max Harris progressed from assembling products on the shop floor to designing them at Xwatch Safety Solutions, part of Hexagon.

At just 24 years old, Max Harris has already made significant strides in design engineering. Max joined Xwatch Safety Solutions in mid-2020, working in manufacturing assemblies while completing his degree at the University of Portsmouth. During his placement year in the aerospace sector, he gained valuable mechanical design experience, which laid the foundation for his transition into Xwatch's design team.

Balancing academic commitments with a professional role, Max was promoted to Graduate Design Engineer upon graduation. Since then, he has advanced through the ranks to become a Design Engineer, reflecting Xwatch's growth and his expanding responsibilities within the company. His story showcases how early career experiences, a proactive approach, and a passion for engineering can pave the way for professional growth.

Overcoming challenges

One of Max's most challenging projects involved managing component failures and ensuring effective communication with suppliers and manufacturers. This experience sharpened his technical problem-solving skills and improved his ability to analyse failures in

in system design and develop enhanced mechanical solutions. As Xwatch expanded, Max embraced greater responsibilities, including working on new product designs and integrating safety solutions into heavy machinery. His ability to adapt, learn, and contribute has been instrumental in his career development.

Impact of academic experiences

With a background in mechanical design engineering, Max has also developed a keen interest in electronics and software, further broadening his expertise. During university, his hands-on experience with design tools such as Creo and MATLAB played a crucial role in shaping his approach to problem-solving and innovation in the field.

Future goals

Looking ahead, Max aims to continue growing within Xwatch and the broader Hexagon ecosystem. His professional aspirations include:

- Expanding his technical and leadership skills
- Collaborating with teams across Hexagon's Geosystems group
- Engaging in new product development and exhibitions
- Staying at the forefront of emerging technologies in design engineering.

Advice for aspiring design engineers

Max's advice to recent graduates entering the field is clear:

1. Make the most of university resources – whether it's software tools, lab facilities, or project work, use every available opportunity to enhance your skills.
2. Gain hands-on experience – internships, part-time roles, or any exposure to real-world engineering problems are invaluable.
3. Be proactive in learning – engineering is constantly evolving, so staying curious and adaptable is key to success.

The impact of Hexagon's acquisition of Xwatch

With Xwatch now part of Hexagon, Max sees exciting opportunities ahead. Being part of a global technology powerhouse means access to:

- Enhanced R&D capabilities to develop innovative safety solutions
- Collaboration with international teams across Hexagon's divisions

- Integration of advanced technologies into Xwatch's product range.

This new chapter presents growth opportunities for both Xwatch and its engineers, allowing them to work on larger-scale projects with global impact.

Beyond engineering – a personal touch

Max has a creative side outside of work - he's a musician and has played in several bands, most recently in an alt-rock band called Skinny Knowledge. His passion for music complements his engineering mindset, combining creativity and technical precision in different ways.

Max's journey at Xwatch is a testament to the power of early career experiences, adaptability, and continuous learning. From starting in manufacturing to becoming a key player in the design team, his story reflects the opportunities for growth within Xwatch and Hexagon. With a bright future ahead, Max continues to push boundaries in design engineering, contributing to the evolution of safety solutions in construction and heavy machinery.

A future bright spark

Nathan Rogerson is in his final months of his welder/robot programmer apprenticeship at Miller.

Nathan has developed valuable skills in advanced welding techniques and robotic programming, gaining hands-on experience in a leading manufacturing environment. His journey demonstrates the impact of high-quality apprenticeships in shaping the future of the construction equipment sector.

Due to qualify as a Plate Welder, Nathan is Miller's first apprentice to train on a welder/robot programmer course. In the last few years, Miller has significantly grown its robot welding capabilities - having invested in a state-of-the-art robot welding suite - and Nathan's keen interest and instinctive talent shone through, leading to Miller steering him in this direction with his apprenticeship.

Alan Hall, Nathan's Team leader, spoke about his achievements: "Nathan has hugely impressed us over the past few years. He has been welding products to the same standard as time-served staff for a while now, which is a huge achievement, and a demonstration of his natural ability coupled with an impressive skillset. Typically, we would wait until an apprentice was time-served before moving them onto the robots; however, with Nathan's eagerness to learn new things, it was a natural decision to train him in the next generation of welded automation processes and to do this as part of his course. This is a huge accolade, which Nathan should be very proud of, and he has already proven to be a competent Robot Programmer. He has a bright future ahead of him, and we are committed to supporting him through his development."

Nathan is completing his apprenticeship with TDR, one of the UK's leading training providers of engineering and manufacturing apprenticeships. For almost four years now, as part of the course, he has spent time at college on both block and day release while learning on the job with Miller.

Nathan said: "The best thing about my apprenticeship is that I can develop my skills on the job, gaining first-hand experience which I don't think I would have got if I had have chosen to go down the route of studying at university. I chose to work with Miller as they are very progressive in terms of their manufacturing capabilities, and I was very keen to be given the opportunity to work on the robots to advance my skillset. Doing an apprenticeship is valuable, especially within the trade I am doing, as I can get qualified while developing my skills on the job."

Miller has compiled a glimpse into a day in the life of Nathan Rogerson at Miller - showcasing his hands-on experience, precision welding, and robotic programming in action. See for yourself how apprentices like Nathan are shaping the future of engineering! **Watch here**.

Miller understands the vital role apprentices play in shaping the future of engineering and manufacturing and how their skills, enthusiasm, and fresh ideas drive innovation. Miller would like to thank all its apprentices for their valuable contributions—today and in the future!

Education system at a glance

There are plenty of reasons why business should get involved at all stages of the education system. The starting point is understanding the landscape.

	Age	Phase of education	Where this is provided
	18+	Further education for adults (19+) Higher education (18+)	• Colleges • Universities • Institutes of Technology • Training companies • Employers
Key stage **Five**	16-18	Further education (16+)	• Colleges • School sixth-forms • Training companies • Employers • Charities
Key stage **Four**	14-16	Secondary education	• Secondary schools
Key stage **Three**	11-14		
Key stage **Two**	7-11	Primary education	• Primary schools
Key stage **One**	5-7		
	0-5	Early years	• Nurseries • Primary schools

Description
Higher education (HE) is education and training at a standard beyond A Levels and T Levels. HE programmes are offered by universities or colleges, and vary in size and type. HE can include: Higher Technical Qualifications (including Higher Nationals and Foundation Degrees), undergraduate degrees, higher apprenticeships and postgraduate courses. Many adults also continue to improve their skills by studying Further Education (FE) courses - from basic skills to technical courses.
At this stage young people may undertake a full-time course at college or school sixth-form, such as A Levels or a T Level, or start an apprenticeship. They can also combine work or volunteering with part-time study or training. Education or training is compulsory until the age of 18 in England.
Secondary education starts at age 11 and continues until age 16. Students are usually studying GCSE courses, and/or other courses as appropriate (for example, a technical qualification). Some regions also have middle schools.
Primary schools generally have students aged four to 11 years, with infant and junior classes. Government has set out a national curriculum for all subjects across Key Stages One to Four, and there are national tests and teacher assessments for students at the end of both Key Stage One and Two. Throughout their school and college education some students attend alternative settings, which offer an adjusted curriculum to better meet their individual needs, for example, if they have Special Educational Needs and Disabilities (SEND).
The Government sets standards for learning, development and care of young children to age five in the Early Years Foundation Stage framework. This can take place in state nursery schools, nursery classes and reception classes within primary schools, but also in voluntary pre-schools, privately run nurseries and with childminders.

Next steps

For further information, please see our accompanying resource The Education Landscape: Index or visit educationlandscape.co.uk

If you have any questions about anything within this guide, please contact info@educationlandscape.co.uk

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For more information

thecea.org.uk

info@thecea.org.uk

+44 (0)208 253 4502

Construction Equipment Association (also trading as CEA)
Company limited by guarantee · Registered in England and Wales · Company registration number: 04930967 · VAT registration number: 243 3858 54 · Registered office: 1 Bickenhall Mansions, Bickenhall Street, London W1U 6BP