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Skills Supplement 2017



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Good progress in taskforce's first year



Transport is fundamental to everyone's lives. It drives our economy, connects our communities, and links us with jobs and essential services. And right now the government is putting record investment into transport infrastructure with schemes such as HS2, Crossrail and smart motorways. As our networks develop, we will need at least 10% more highly skilled workers by the middle of the next decade.

That is a big challenge. But it is one I am confident we will meet, with apprenticeships at the heart of our plans.

Last year, I took over as chair of the Strategic Transport Apprenticeship Taskforce (STAT), which is focused on delivering the skilled workforce we need. Already we have made good progress. STAT is all about collaboration across the transport industry. Consequently, it includes partners like the Rail Delivery Group, the Trades Union Congress, and most recently participants from the aviation, maritime and road freight sectors. We have also invited apprentices to join the taskforce's board, so their ideas and experiences are reflected at every level of our work.

We have commissioned and developed a new skills forecasting tool which enables a much richer and more comprehensive look at the skills

we need and where we need them. It means that the Government and employers now have a much more strategic view of demand across the workforce, and educational institutions will be able to gear up to meet it.

Transport for London, HS2, Network Rail, Highways England, Crossrail, the train companies and the DfT have incorporated ambitious skills requirements into their contracts and business plans, and we are already beginning to see results. In STAT's first year, through direct levers alone we have seen the creation of around 2,000 apprenticeships. We expect to see further increases in the coming years. Road freight's expectation to provide 15,000 apprenticeships next year alone, and Heathrow's commitment to 10,000 apprenticeships show the scale of what we can achieve together.

But STAT is not just looking at new recruits to transport – our remit is also to develop the skills of the existing workforce. Nor are we focused purely on boosting apprenticeship numbers. It is essential that the opportunities created provide high-quality apprenticeships. That is why we have been working with Investors in People to define what we mean by this, with the ultimate aim of developing a quality mark for those who employ apprentices. Member organisations are working

together to develop new standards for careers such as railway engineering.

If we are to achieve our goals, apprenticeships must be open to everyone. Organisations with diverse workforces are stronger and more innovative, yet women and black, Asian and ethnic minority communities are not represented proportionately within the transport industry. One year on, we are beginning to make some headway towards our gender diversity targets – 39% of reported new apprenticeships in the supply chain at the highest NVQ levels are female, although the gender split across all levels in the sector is much lower and still woeful. We know there is a problem with ethnic diversity too and will develop a plan here.

STAT's aims for the year ahead include a continued focus on how we ensure our apprenticeships reflect our diversity as a country. We will ensure that apprenticeships continue to make an important contribution for social mobility. We will continue to drive the delivery of more apprenticeships through the supply chain. Though these are big tasks, STAT begins its second year with a great deal of optimism. Transport is an increasingly exciting sector in which to work, and gradually the message is spreading that an apprenticeship in our industry can be the first step in a hugely rewarding career.

STAT is all about collaboration across the transport industry

Mike Brown is chair of the Strategic Transport Apprenticeship Taskforce and transport commissioner for London

Nurturing success

Melanie Clarke, Highways England's operations customer service director, is a role model for women in the organisation, founder of the Leading Women's Network and advocate of International Women in Engineering Day

Having worked for the company for 12 years, my career has taken me from the traffic officer service, right through to my present role as customer service director in our operations directorate.

I've always been creative, and my early schooling and career was driven by a passion for literature and art. In my earliest jobs I worked in design studios, printing firms and even as an assistant librarian, but all aligned to my natural interests.

A common theme in all those jobs was teamwork and providing a service to customers. Joining Highways England as an operations manager in the Traffic Officer Service opened the doors to a totally dynamic world, where great teamwork is essential to ensure that our customers have safe and reliable journeys on England's strategic roads.

The most challenging aspect of a career predominantly spent in frontline operations is the huge responsibility, especially when looking after the safety of your teams and our road users. But making that a priority, alongside meeting the needs of our customers, also makes jobs in Highways England incredibly rewarding – delivering a huge infrastructure programme, keeping the performance and standards of our roads high and operating them effectively for optimum journeys and a good quality experience of using our network.

It's vital we have the right skills in our company. We are committed to developing our workforce to meet new challenges by encouraging greater



diversity and inclusion, driving innovation and creating a work environment that ensures we can recruit and retain the best talent that is available to the industry, building a more sustainable and innovative sector.

In the wake of Women in Engineering Day I am particularly interested in encouraging more women to seek jobs like mine. My career at Highways England has been an exciting journey and one that I hope will encourage other women to apply for similar roles, which is why I'm proud that women within Highways England now have the added support of the Leading Women's Network, which I introduced in September 2014.

I recognised the need for a forum where women could share their knowledge and experience, while supporting each other with business challenges. We currently have 173 women as part of the network, a number which is growing, but it's proved to be an incredibly success-

ful aid with both men and women attending events – adding credibility and an additional layer of support.

The main objectives of the forum are: to promote diverse role models for women in Highways England and to challenge the organisation; to create the right culture and do the right things so that we can attract, retain and promote a diverse workforce; and finally to provide a network of support for women in Highways England.

Currently, the network organises conferences that give colleagues the chance to hear from inspirational women who work in our industry, as well as workshops, most recently about being our best self, confidence building, and nurturing talent.

Our forum also offers opportunities for tailored coaching and career development, and we're delighted to support a women returners' programme for female colleagues who want to come back into the workplace after a break.

As well as establishing a national network, we're also increasing support in all our regional offices, allowing women to make a difference locally and support each other wherever they work.

This is all vital to helping our company achieve its goals.

What happens between 2020 and 2025 is the next big step for Highways England. So it's important that we work to evolve our workforce now to ultimately ensure we have the right skills to continue providing a strategic road network that remains safe and fit for the future.

Picture © Highways England

Sandie Forte-Gill, regional delivery director for Yorkshire and the North East, describes her role

What has been your journey through Highways England?

I am responsible for overseeing major infrastructure projects in Yorkshire and the North East. I've worked for Highways England for nearly four years, originally joining as a senior project manager leading the A1 Leeming to Barton improvement scheme in North Yorkshire.

In 2014, an opportunity arose to be the construction manager for major projects in the North. I spent an interesting

but challenging two and a half years leading the construction team on schemes such as the A556 Knutsford to Bowden improvement, the M1 J39-42 smart motorway and the A1 Coalhouse to Metro Centre project. All of which opened my eyes to critical safety, customer and delivery challenges that occur during the construction phase, and made clear the importance of planning delivery in the early development phases.

In my latest role, I lead a team of 60 people to deliv-

er 16 major schemes during this Roads Period.

What do you see as the opportunities for women in engineering?

For me, it's all about the work-life balance for all and creating an environment where people don't rule themselves out of roles. In today's world, almost everyone, male or female, has childcare or other responsibilities that need to be accommodated around the working week.

It's vitally important that businesses in this sector become fully inclusive in order to thrive and make themselves into attractive employers. With improvements in technology and the use of virtual meetings or job-sharing, a career in engineering could become a lot more appealing to all.

The teams I've worked with at Highways England are the most diverse in my career to date. It makes a real difference to the style of conversations that are held, the approach to problem-solving.

In 1801 the invention of the high pressure steam engine changed the face of Britain's economy. Not only did it connect up cities and towns in Britain, but hundreds of thousands of men and women left their agricultural jobs to build thousands of miles of railway, changing the make-up of Britain's workforce forever.

HS2 may not be quite on the same scale, but the similarities between the two projects are easy to see. HS2 will build on our country's ambition to better connect our cities and town and, as the largest infrastructure project in Europe, has the potential to create a skills legacy that will transform Britain's modern workforce.

HS2 will create 25,000 jobs, with a further 3,000 roles needed to maintain and operate the railway and rolling stock once operation starts in 2026. These jobs come at a time when the sector faces its own employment challenges: an ageing workforce, a need to increase the skills of the current workforce, and a shortfall in the number of people entering the industry. They also include jobs not yet in existence.

With HS2 comes a new world for rail: a high tech, intelligent infrastructure which will demand a different way of doing things, a workforce with world class digital skills, and a chance to change the demography of the sector.

Many of the seeds needed to address these challenges have already been planted. The National College for High Speed Rail opens its doors this year and, supported by HS2 Ltd and the wider industry, it will upskill and reshape the workforce providing the skills needed to build HS2. It will also introduce the digital and technological skills needed for future maintenance of the railway.

HS2 Ltd and its supply chain have already begun discussions with employment and skills organisations at a national, regional and local level



HS2 rises to skills challenge

Two centuries ago the rail industry created the jobs that shaped the future economy. HS2 has the chance to do the same, says **Kate Myers**

to consider how they can help prepare individuals for upcoming jobs in the construction of the project. Whether it's mums returning to work, ex-armed forces personnel, long-term unemployed or NEETS, HS2 Ltd wants to open up the industry to a more diverse workforce and it's taking early steps to make this happen.

Research by the Education and Employers' Taskforce has shown that repeated engagement by employers in schools can make a real difference to student prospects. HS2 Ltd's outreach programme was established in 2013, and has to date engaged over 35,000 students during

the course of 250 events in schools close to the line of route. Almost 150 HS2 education ambassadors have been involved in activities ranging from tailored HS2-themed STEM Inspiration Days to mock interviews and careers workshops.

Over 2,000 apprenticeships will be offered by HS2 Ltd and its supply chain and will help shape the current and future workforces of the High Speed Rail industry.

But there is more to be done, by HS2 Ltd and the wider industry. The infrastructure sector is changing dramatically and there is a need to challenge outdated perceptions of jobs in rail and transport. The digital and technological mindsets of today's youth are vital to maintaining an intelligent railway infrastructure and we need to showcase the world-class jobs this will offer. Whether that's attracting gamers to manage the BIM interfaces HS2 maintenance will require, or social media supremos to fulfil ambitions for a step change in customer experience, younger generations already have many of the skills our industry will require.

At the beginning of the 19th century the railway industry offered people the jobs of the future. If we are going to do this again with HS2 the industry must challenge old perceptions of our sector and show young people the exciting and diverse careers waiting for them.

Above: Kate Myers
Below left: An HS2 education ambassador at an all-girl STEM day in a Hertfordshire school



Kate Myers is head of skills and employment at HS2 Ltd



↳ The college will also provide skills for those working on modernising existing railways

Fast track to practical skills

This September the National College for High Speed Rail opens its doors to its first intake. It's not too late to sign up for its industry-led curriculum

The National College for High Speed Rail, the largest of five new, national employer-led colleges, has urged businesses to move quickly and secure a place for their apprentices to join the pioneering higher apprenticeship training programme due to begin in September 2017.

The college has been created by the Government to help British learners develop world-class engineering skills as the UK rail industry enters a period of exciting development. With just a few apprenticeship spaces left for 2017, it is the last chance for businesses to sign their apprentices up.

In its first year, the college will offer higher apprenticeships in operations and departmental management, civil engineering, track systems and systems engineering.

Currently the UK needs at least 182,000 people with engineering skills each year until 2022, but it is falling short by 69,000 engineers a year. The National College for High Speed Rail will play a vital role in addressing this nationwide shortage when it

opens its state-of-the-art campuses in Doncaster and Birmingham.

Work on the first phase of HS2 is set to get under way in a matter of months and the college, with its pioneering curriculum and innovative training programme, will produce workers who will represent the human face of Britain's largest infrastructure project.

This September, a cohort of apprentices already working in the rail industry will commence study at the college.

Among the businesses committed to sending their apprentices to the college is the Fusion joint venture, a partnership between Morgan Sindall, BAM and Ferrovial. The joint venture has a successful track record of delivering large infrastructure projects, having previously collaborated on projects such as Crossrail and Thames Tideway Tunnel.

The 2017 apprentices will be followed by over a thousand learners in September next year, who will get the opportunity to study HNC and continuing professional development courses, all of which have been developed with industry employers and will

The NCHSR's campuses at Doncaster (above and below) and Birmingham (right) will add HNC and CPD courses from 2018



be taught by specialists in the subject.

Learners who attend the college will be seizing a once-in-a-lifetime opportunity to educate themselves at a state-of-the-art £40m establishment that has been specifically designed to train the workforce who will initially be part of HS2, Britain's largest infrastructure project.

The college is employer-led because it's important that learners and apprentices graduate with the expert training and skills that businesses need, to tackle the acute skills shortage in the rail and infrastructure industries head on.

Businesses from within the rail industry have played a critical role in helping to write the college's curriculum. They have been heavily involved to forge better connections between industry and education to create the next generation of workers that Britain needs to solve its productivity crisis.

Courses at the National College will offer hands-on experience, so learners don't just learn the theory behind the skills. They will try their new skills out on actual working equipment, track and trains.

At the Doncaster campus, the curriculum will focus on high-tech engineering, innovation, rolling stock, track systems and power. Doncaster has a rich railway history and is at the forefront of keeping the UK's rail network moving and building the infrastructure of tomorrow. It is home to more than 20 major rail companies and so will provide the perfect environment for the expertly trained graduates from the National College.

Clair Mowbray, chief executive of the National College for High Speed Rail, said: "As a ground-breaking institution,



The innovative approach by the college will give learners a direct gateway into the industry with the latest educational expertise and hands-on experience in the industry fresh in their mind.

Once it's fully launched the college will produce 1,300 highly-qualified professionals each year, who will be ready to enter to the industry immediately and deliver the infrastructure that Britain is investing in.

The college will not only focus on training for high-speed rail; it will also provide transferable skills for those working on modernising Britain's existing railways.

The Birmingham campus will specialise in advanced digital technology, civil engineering and command, control & communications. Birmingham will be at the heart of the UK's new high-speed rail network, with trains from the city serving both the planned phases of the route.

we want businesses to send us their brightest and best to help us create a workforce ready for the 21st century.

"Our apprenticeship programme will provide a unique opportunity to demonstrate the skills of these talented engineers and designers and the businesses they work for, providing a shop window to showcase British expertise in rail to the rest of the world. Those that choose to send apprentices to the college will give their business a future competitive advantage."

The college is keen to hear from businesses that want to upskill their current workforces on one of the available apprenticeship pathways. The college also has access to a pool of talent looking for apprenticeship vacancies and are able to assist businesses by matching these candidates with positions. Businesses are being urged to act fast to snap up this prestigious opportunity.

To find out more visit www.nchr.ac.uk

National College chief executive Clair Mowbray and Fusion project director Nissar Mohammed



Leading by example

Fusion is among the first to sign up trainees to the NCHSR's pioneering apprenticeship scheme and is encouraging supply chain partners to follow

The National College for High Speed Rail is calling on other businesses to follow Fusion's lead and sign up their talented workers to its pioneering higher apprenticeship scheme which opens in September.

With work on the first phase of HS2 set to get under way in a matter of months, the college is experiencing growing media interest in its first cohort of apprentices.

Among the businesses committed to sending their apprentices to the college is Fusion, a joint venture partnership between Morgan Sindall, BAM and Ferrovial Agroman. In 2016, Fusion was awarded Area Central of HS2's enabling work contracts, providing essential ground preparatory work, before the commencement of major civil activities.

As a Tier 1 contractor to HS2, Fusion feels it has a responsibility not only to send its own apprentices to the college but also to make its future supply

chain partners aware of the apprenticeships offered and to encourage them to follow its lead.

At present one in five rail engineers are aged 55 and over. The combination of an ageing workforce and the development of high speed rail has left a growing skills gap in the infrastructure industry.

Clair Mowbray, chief executive of the National College for High Speed Rail, said: "Our industry needs more forward thinking organisations like Fusion to commit their apprentices to the National College of High Speed Rail as the British rail industry is rapidly approaching its biggest investment in infrastructure for more than a century.

"Our first intake of apprentices are going to be the pioneers of high-speed rail in the UK, ambassadors for Europe's largest infrastructure project and testament to the bright future for the rail industry in Britain."

The National College for High Speed Rail is the largest of five new employer-led colleges that

are being created to help British people learn world-class skills.

The college has developed its courses in partnership with businesses to make sure its graduates learn the skills that businesses need to tackle the acute skills shortages Britain has in rail and infrastructure.

Apprentices at the college will receive industry-leading training, giving them knowledge of the latest skills and techniques in high speed rail, as well as providing transferable skills for those working on modernising Britain's existing railways.

In its first year, the college will offer higher apprenticeships in operations and departmental management, civil engineering, track systems and systems engineering.

The college, which has campuses in both Doncaster and Birmingham, will train up to 1,300 new workers every year with the skills necessary to be part of effective rail and infrastructure teams. As well as the first intake of apprentices in

September, the college is also offering places for courses starting in January and May 2018.

Nissar Mohammed, project director at Fusion, said: "The college's ambition, to provide highly skilled people and close the skills gap through our supply chain, will be a lifeline for the industry, particularly if the UK is to remain competitive in a global high speed rail market.

"It is up to infrastructure businesses like ourselves and the supply chain to work with the college to develop the next generation of rail engineers, the first alumni, trained by the industry for the industry.

"Businesses are urged to explore the potential opportunities available through the college: in addition to the availability of higher apprenticeships, there is also the potential to sign-post apprenticeship vacancies directly through to the college, meaning a more efficient means recruitment, attracting candidates directly from the college's very own talent pool."



New skills for a new generation

Alstom's new rail academy opens in September. It will help to provide the UK rail industry with the skills it needs to thrive, says **Mike Hulme**

It is an exciting time for Alstom as we look forward to the opening of our rail technology centre in Widnes.

The first work that will be completed in Widnes will be the repainting of the Pendolino fleet used by Virgin Trains on the West Coast Main Line. But that's not all that Widnes will be for. We are also finalising the construction and fit-out of the Alstom Academy for Rail, which is also located at the site, so that we are ready to welcome our first students in September.

Our academy will support the training and development of 65 apprentices in its first year. Of these places, 30 will be filled by internal candidates to up-skill our current team, and 35 will be new opportunities.

The plan is to open the academy up to the wider industry in 2018, and when it is fully operational we will offer 15,000 training days a year.

The academy will allow us to ensure that young people starting out in the industry will be equipped

with the very latest digital skills they now need to succeed in their careers.

The high-tech revolution has transformed much of modern work and the rail sector is no exception. In fact, large infrastructure projects such as HS2 and Crossrail are using cutting edge technology and demand a new breed of rail engineer, as comfortable in analytics as in practical work.

At Alstom, we understand the need for industry to help address the skills shortage that has resulted from this change, and the Alstom Academy for Rail will do just that.

We are partnering with local education providers to deliver our apprenticeship programmes. Students will take standard engineering classes at local colleges, such as Riverside College in Widnes, and then learn rail-specific skills at the academy through a blend of traditional and digital tools such as tablet technology, virtual reality and cloud data management.

Many classes will be taught by accredited industry professionals, including Alstom employees, who

tackle engineering challenges as part of their daily jobs, and will cover the safety and maintenance of specific products such as Alstom's Pendolino tilting trains.

At the end of their Alstom apprenticeship, students will achieve qualifications of up to NVQ level 3. By 2020, we hope to offer rail training to NVQ level 7, which is equivalent to a master's degree.

Another ambition for our academy is to attract more women into the sector, which is historically a very male environment. We've been running a variety of initiatives, including female-only events for local prospective students, to showcase the variety of opportunities that rail now offers and encourage women to apply for apprenticeship schemes with us.

We are very proud of what we're offering at the rail academy and truly believe there's nothing else like it in the North West. It is a great opportunity not only to train our own people, but also to support other organisations – our customers, competitors and suppliers – in training theirs.

The Alstom Academy for rail, at the Widnes technology centre, will be opened up to the whole industry next year



Mike Hulme is managing director of trains and modernisation at Alstom in the UK & Ireland



A whole new world

Apprenticeships are starting to shed connotations of lower skills levels, Dana Skelley tells **David Fowler**

What's better than spending 80% of your time on the job and 20% in education, while getting paid?

Apprenticeships are changing – but parents, school students and careers advisers haven't yet fully caught up.

That is the view of Dana Skelley, former TfL director of asset management and chair of TfL's graduate and apprentice board, whom *TT* spoke to shortly before she moved to a new post with Skanska. She says: "Apprenticeship still has certain connotations, of training on the job or being involved with maintenance. It tends to be thought of as NVQ Levels 2 and 3. But there's a whole new world, right up to level 7." For example, TfL's new quantity surveying apprenticeship is Level 6, equivalent to a degree.

TfL this year began rebalancing its recruitment intake from graduates towards apprentices in order to meet apprenticeship targets set by the Enterprise Act 2016. It took on over 140 apprentices in January and will recruit just over 40 graduates in September.

Other new apprenticeships are in development. "We've been working on and expanding them over the last year, working with other employers and education establishments to devise apprenticeships," she says. For example, TfL is working in partnership with Kingston University along with Coventry University, Liverpool University and the University of the West of England as part of the Trailblazer group to develop the Civil Engineering Degree Apprenticeship.

"We're looking at what apprenticeships are already available and what can be done to fill the gap, and where there is one in existence using it instead of a degree," Ms Skelley says. Working with other employers is critical in designing programmes: "All these schemes have to be not specifically for TfL but suitable for many employers."

General management is an area where TfL's intake has shifted from graduates to an apprenticeship, aimed at the people on the front line at stations and those managing operations. Apprenticeships are no longer just for technical subjects, says Ms Skelley. They are also offered in finance and human resources.

Misconceptions about apprenticeships are still rife. "There's still quite a lot of work to do with parents – there's still a taboo. There is a role to play in educating not just parents, but careers advisers and the kids themselves."

But Ms Skelley adds: "What's better than spending 80% of your time on the job and 20% in education while getting paid and working towards a qualification?"

An event for careers advisers attracted 46 practitioners, and included a survey before and after to check their understanding of apprenticeships. In the "before" survey only 26% said they would have suggested TfL as a career destination. In the survey at the end the figure had risen to 75%.

The organisation is finding that it is getting applications not just from school leavers, but from people who have completed a year of a degree. TfL also plans to use the apprenticeship programme to increase the skills of existing staff. The transition brings the need for TfL to change as an organisation, says Ms Skelley: "Line managers have to get used to developing people on the job."

TfL plans to use its apprenticeship programme not only to improve inclusivity but also to help London boroughs with high deprivation, such as Newham and Lewisham, targeting specific socio-economic groups and the unemployed. In Newham, 380 people came to an event to show the range of opportunities on offer, with advice on how to apply and fill in forms and on interview techniques, with PCs available to make applications.

It is also running outreach programmes to attract applications from children on free school meals, and targeting girls' schools known to have an interest in science, technology, engineering and maths subjects.

It is working with social enterprise Reach Society, whose aim is to inspire young black men and boys to realise their potential. Along with its suppliers Stagecoach, KeolisAmey Docklands, and Ferrovial Agroman Laing O'Rourke TfL is running a pre-apprenticeship scheme with the Peabody Trust, focused on people from black and ethnic minority groups in Hackney who have missed out on educational and work opportunities. It aims to show them what helps to make someone employable and to provide opportunities for work experience.

And a pilot has been run in partnership with single parent charity Gingerbread and Women into Construction to show what is on offer from contractors. In the pilot more than 15 women spent two weeks with TfL or supply chain partners Arriva Rail London, Arup and Siemens.

Inclusion figures are on "a good trajectory", with 40% of the 2016 graduate intake being female, 26% from BAME groups and 4% having a declared disability. Of the apprentices, 15% were female (Ms Skelley accepts there is still work to do here but adds "there have been years when there were none") and 34% were BAME.

Ms Skelley adds: "I don't think we are selling the industry very well. It shouldn't be about people in hard hats and hi-vis jackets. It's about getting people to work, to big events like Ed Sheeran concerts. We should be helping people realise that."

"Transport," she concludes, "should be a sector you choose to go into in the same way as fashion and media."

Dana Skelley:
"Misconceptions are still rife"

Jess Ellis joined TfL after gaining A-Levels in maths, biology, chemistry and sociology. As part of her apprenticeship she has completed a BTEC Level 3 course in electrical and electronic engineering at City of Westminster College, and will be going on to complete a level 2 and level 3 NVQ in rolling stock engineering.

She describes her experience:

"In the sixth form I was studying to be a dentist because I wanted to do something manual and challenging... I wanted to do engineering as well but I didn't really know what was available. I didn't even know about fleet maintenance, but I thought of TfL, went on to their website and saw the vast amount of apprenticeships that they had on there. I chose this one and haven't regretted it since.

"I wanted something challenging that gives me something different to do every day. I don't like sitting still for too long... you change depots every three months, so you're always moving about, and because you're working on so many different trains, you're always learning.

"On my first day I went to the Acton training school for my induction. We played games to get to know everyone and to feel comfortable. They introduced us to our trainers and managers and talked us through the policies of TfL and told us what they had to offer.

"Our year was split into two halves so one half spent six months in college on the BTEC course and the other spent six months at Acton, and then you switch round. I was on the college half first. We did a two-year course in six months – there was a lot of information but it flowed and connected better than it would on block release. Then you spend six weeks in each workshop at Acton: there's four, mechanical maintenance, electrical maintenance, electronics and the bench workshop.

"Working in the workshops is great. Using the machines is amazing stuff. I took loads of pictures



Life as an apprentice

Jess Ellis, 20, is a fleet apprentice at Transport for London

and sent them to my dad because he couldn't believe how big the machines were that I was using.

"You've got to work by yourself and also as part of a team... it was fun but I also felt comfortable to ask my trainers and colleagues for help. My intake all came from different backgrounds, some from university or from another job. Some were mechanics. I had no background knowledge of engineering, but they don't put you in the deep end. You have a support manager as well as a manager at the depot, and one for personal support who checks up to make sure you're OK. Every six weeks you have a meeting with the depot manager to see if you need any courses and so on. It's a very supportive company.

"It's predominantly men. There were a few women in my year.

I love the teamwork. It's the most important thing

But you're made to feel part of the team, they don't exclude anyone.

"At the moment I'm at Transplant [London Underground's rail engineering division] at Ruislip for three months. We maintain the vehicles London Underground uses to maintain the track during engineering works.

"Typically, at fleet depots you attend a meeting in the morning where the team's assigned certain things to do and the time you've got to do it and the work orders and so on... and then you get with your team, you're given a task within the team to complete – fixing a fault or replacing a unit in the train, or an exam, to check the train's being maintained properly.

"I love the amount of teamwork. It's the most important thing. You couldn't do it on your own.

"My dad always encouraged me to be practical – not to be worried about taking a wheel off the car. My mum initially didn't think an apprenticeship was a good idea. It's bad that there's a negative impression of apprenticeships as lower-paid jobs that people may not see a full career in. That's not the case. You're earning while you learn. You can see what you could be doing in five years. There's a good career ladder.

"I'd 100% recommend an apprenticeship even if you don't want to do engineering. Now my brother is doing a project management apprenticeship with TfL in the office.

"TfL is trying to reach out to students in year 10 and 11 at school. I've been back to my old school to tell them what it's like."



Jess Ellis: "They don't put you in the deep end. It's a very supportive company"
Pictures © Transport for London

Mentoring apprentices at TfL

Former apprentice **Garry Pratt**, now a senior project manager at London Underground, acts as a mentor to new apprentices. He explains his view of the role and its importance



When I first joined TfL back in 1998 I never had an opportunity to have a dedicated mentor. All this has changed in TfL and each new apprentice now has a dedicated mentor in the organisation. This not only benefits the person being mentored, it also gives the mentor an opportunity to listen and learn about new ideas, innovations

and technologies which the new apprentices can bring to the table.

The key thing about being a mentor is having a personal connection to someone, through which they can seek advice on a number of matters, whether it's work or personal challenges. Being a mentor allows you to develop an informal relationship and advise and support the apprentice during the challenging first few years

of their career, a different relationship from that of a line manager.

By mentoring apprentices I hope to pass on valuable leadership skills and communication skills which are key to any senior role. I gain a personal sense of satisfaction from knowing that I am helping my apprentices grow within the organisation. By passing on my skills and experience I hope to assist them in expanding their knowledge and skills, gain valuable advice from a more experienced person, and build their professional networks.

My current apprentice brings me back to when I joined and the "not knowing feeling" I used to experience. However, by meeting and supporting my current apprentice I have assured him he's in good hands, and that not asking or questioning is worse than keeping quiet and pretending they have everything under control. As a mentor I also provide important networking opportunities, which offer great exposure, especially for an apprentice project manager who I am currently mentoring.

Mentors can also recommend vital training programmes which they may have experience of, and help apprentices to build the skills needed to aid their development in their apprenticeship and in becoming a future leader in TfL.

Being a mentor has helped me gain valuable knowledge and insights into what training and skills apprentices are receiving today, compared with when I completed my scheme. Mentors can help the apprentices through the ups and downs of their career at TfL, whether this is offering them advice on how to approach a situation or to help with a personal problem. Mentors provide an important backbone to the mentee, especially for those early on in their career.

In common with other senior managers throughout the organisation, I enjoy this role. It gives us an opportunity to identify high performers and future managers who one day could be working in our teams.

My advice to mentees and in particular apprentices is that mentoring is a two-way stream: you have to work equally hard to build your relationship and network, and you only get back what you put in.

So maximise the time with the mentor and stay in touch even after your apprentice scheme, as you never know when you may cross paths again in the future!

First Bus



Alongside apprentice and graduate programmes, First Bus has 50 Workplace Learning Centres

The company

First Bus is one of Britain's largest bus operators with around a fifth of all local bus services outside London. A workforce of around 16,500 moves some 1.6 million customers every day.

First Bus can point to a strong tradition of providing development and skills opportunities for all its colleagues. Through its graduate and apprentice programmes First Bus is attracting the most talented young people in the transport industry.

Training and development opportunities

In 2006, First Bus opened the first of more than 50 of its trailblazing and industry leading Workplace Learning Centres, in partnership with the union Unite.

The centres help colleagues develop and learn new skills: how to use a computer, the internet and email, or improve existing skills such as numeracy and literacy. More than 7,700 vocational qualifications have been awarded to date through the centres.

The learning centres also act as a hub for various "learning campaigns" run across First Bus. The recent "Learning at Work Week" campaign, for example, encouraged all First Bus employees to learn a new skill – some of the highlights included cheese-making in Leeds, drum school in Basilston and a furniture upcycling workshop in Bradford. First Bus will also shortly re-launch its annual short story competition through the centres, which encourages drivers, engineers, cleaners, supervisors, managers and other staff members to submit a short story with winners enjoying the acclaim of having their stories published in a special First Bus book.

There are a host of other skills programmes designed to support various levels and functions that complement the Workplace Learning Centres. For example, senior managers can benefit from courses designed to enhance leadership skills or build high performance teams.



Apprenticeships

First Bus has a good track record of employing and developing apprentices, particularly in the engineering function. Around 50 engineering apprentices begin their careers with First Bus each year. The apprentices are generally school-leavers, with an increasing number of women applying. They will spend around 70% of their three or four year courses on the job and around 30% in the classroom. More than 1,500 applications were received by First Bus for the 2017 apprenticeship intake, a record!

First Bus apprentices are actively encouraged and supported to continue their careers with First following the completion of their course – they are seen as a vital part of a successful business, and many have gone on to secure senior positions.

In addition, First chairs the Passenger Transport Trailblazer Industry Group for the development of new apprenticeship standards in the public transport sector. This forms part of the Government's skills reform vision, which aims to have 3 mil-

lion apprentices on programmes by 2020. To date, four industry standards have been approved, focusing on safety, quality and customer service, and will be launched in the summer.

Graduates

First Bus has established a dedicated bus graduate programme designed to attract the best candidates and provide them with a comprehensive learning experience. This year seven graduates will enter the programme. They spend two years gaining experience from almost every part of the business, even spending time on the front line driving buses. Around 70% of the programme is spent on the job, 20% is based on feedback and coaching from line managers, mentors and the graduate team, while 10% is formal training (e-learning, classroom, workshops).

The engineering graduate programme has been hugely successful. Graduates are supported in obtaining chartered engineer status and are mentored by senior engineers outside First Bus.

Many First Bus graduates have progressed through the programme and now hold senior positions. Indeed, First in 2015/16 was voted the "top company for graduates to work for" in its sector.

Culture

Giles Fearnley, managing director of First Bus, said: "We recognise that by investing in our people, we are investing in the future success of our business.

"We've successfully developed a culture at First Bus that embraces skills and development opportunities. We have a pipeline of talent coming through thanks to our graduate and apprentice schemes, while our Workplace Learning Centres in particular are upskilling colleagues right across the business.

"We're rightly proud of our industry-leading approach to skills and development. However, we must not be complacent – the relentless approach to improvement will continue across First Bus."



AECOM



AECOM heads the CAPRI consortium to develop and test autonomous pods

Aecom

Build a bright future at AECOM

The company

The world is changing. Urbanisation is affecting entire regions. Cities are transforming. New technologies are creating opportunity. In the face of climate change and uncertainty there's crucial need for resilience and security. In an increasingly interconnected and challenging world, new thinking is called for.

AECOM gets the bigger picture and is responding fast to changes, bringing the best minds together to spark new ideas; combining ingenuity with global experience to address many of the world's most pressing issues and realise its clients' boldest ambitions.

From planning and building new cities and connecting people with transport systems, to delivering clean water and energy and helping governments maintain stability and security, AECOM's work in over 150 countries really makes a difference to improving people's lives. And because of the size and breadth of AECOM, it continues to give its employees the scope to grow and expand their experience and knowledge and the opportunity to make an impact.

There's never been a more exciting time to be in infrastructure and AECOM continues to be at the forefront of the industry. Its work with virtual, augmented and mixed reality is helping its clients and wider stakeholders visualise how schemes will look into the future, bringing the proposals to life and helping to positively influence public opinion. Through the CAPRI consortium, which AECOM heads, it recently secured UK government funding to design, develop and test connected and autonomous vehicle pods which could transform the way we travel in the urban environment. Its specialist rail teams have invested in solutions for improving safety on high-speed rail, and through its Social and Market Research team AECOM has gained unique insights into how to improve user experience on the railways.

Investing in future talent

To continue to meet the pace of change, the engineering sector needs talented people coming into the profession and rising up through the ranks. That is why AECOM invests heavily in its training and development programmes.

Over the last three years, AECOM has recruited more graduates and apprentices than any other consultant in the UK and Ireland. Over a thousand graduates in the UK and Ireland have joined its Graduate Development Programme, to learn from the best in the business, to develop their technical skills and work towards professional accreditation. The programme includes a two-day induction, secondments, technical development, residential training events, and continued professional development.

However, AECOM also recognises that there is a wider choice of entry routes now into the industry and that one size does not fit all. For this reason it has increased apprenticeship recruitment, hiring more apprentices than ever this year. Approximately 5% of its UK and Ireland workforce are apprentices and this figure is rapidly growing. AECOM's apprenticeship development programme includes training for specialist skills that will be needed to deliver future projects. The company is also working closely with the Technician Apprenticeship Consortium for example, to develop new apprenticeship programmes for certain in-demand transportation disciplines, such as transport planning and rail.

AECOM has a Structured Training Excellence Programme which is designed to recruit school-leavers who show commitment, aptitude and enthusiasm into science, engineering and technology careers. This combines work-based on-the-job training and learning with further studies undertaken via day release at further education colleges.

A diverse and inclusive workplace

At AECOM, 27% more female graduates joined in 2015-16 and its intake of military veterans has increased by 20% in 24 months. It isn't just about the numbers though. It's important not only to have the right mix, but also to ensure that every voice is heard so that diversity delivers impact.

AECOM recognises that whatever the individual's entry route or level, a supportive, inclusive culture is key to motivating people and helping them to reach their full potential, whatever career path they choose.

That is why AECOM has created a coaching culture across all levels of its organisation. It's achieved this through a number of industry-leading initiatives, such as its mCircles group mentoring scheme for women. This has been set up to reflect specific challenges faced by women, and has the active involvement of all the senior female directors across the company, as well as the backing and support of top-level male directors.

AECOM has also launched its reverse mentoring initiative, whereby its most senior leaders within the business are mentored by junior staff within the organisation, enabling the leaders to see things from the junior employees' perspective, and the company also provides opportunities for apprentices to shadow its most senior directors for a day.

All these initiatives are focused very much around sharing experiences, removing barriers to progression and enabling all levels and groups within the organisation to develop and contribute to the company's success. Since launching earlier this year, over 500 AECOM staff have already benefited from these programmes.

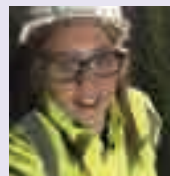
The company continues to support and celebrate the talent within its organisation. This year AECOM's Christian Christodoulou became the youngest Fellow of the Institution of Civil Engineers and Dominik

McCormick the youngest EngTech MICE in the 200-year history of the institution.

Whatever career stage people are at, AECOM recognises that progression and success is all about ongoing learning, developing, growing as an individual and being equipped to deal with future issues affecting the industry and wider society.

The company seeks out those who are passionate about making an impact and playing a part in finding solutions to challenges, whether this is on a local or a global scale. And in return AECOM provides the support, guidance and development opportunities to deliver a rewarding career.

The support and guidance you receive from AECOM is excellent. AECOM recognises your skills and the career path you wish to take and supports you to grow and develop in your area of interest. The company continually encourages you to think outside the box and to strengthen your knowledge and make you the best engineer possible. AECOM offers great experiences that enable you to gain an insight into other areas of the business

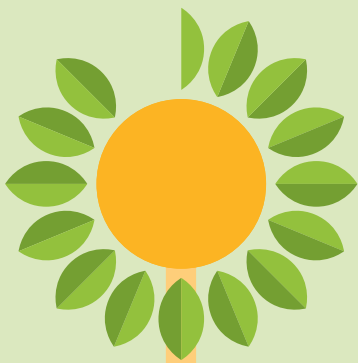


Samantha Stanbridge,
Assistant Engineer,
AECOM

WE BELIEVE IN BUILDING
RELATIONSHIPS AND WORKING
COLLABORATIVELY TO ACHIEVE
A GREATER GOOD

95%

BUSINESS IN THE COMMUNITY
SUSTAINABILITY INDEX SCORE



90%

OVERALL CUSTOMER SATISFACTION
FOR OUR REGIONAL BUS DIVISION



RECOGNITION FOR OUR CONTINUOUS
IMPROVEMENT IN REDUCING CLIMATE CHANGE
FROM THE CARBON DISCLOSURE PROJECT

