



transportation professional

Gearing up for climate summit



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Strategies set out to improve the skills of professionals

road safety

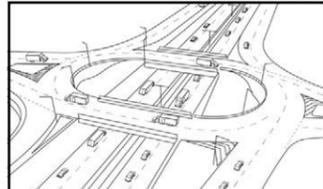
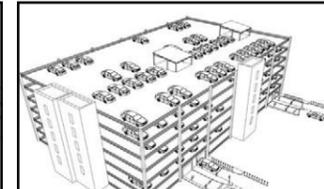
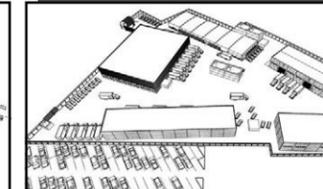
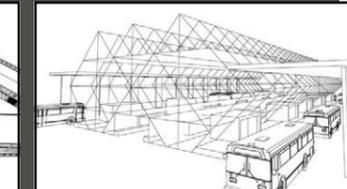
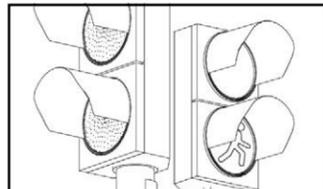
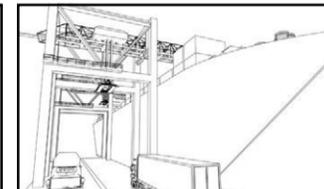
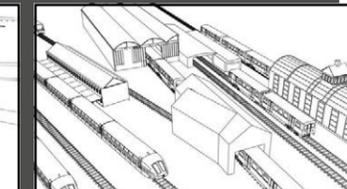
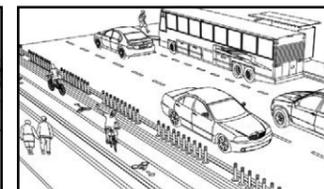
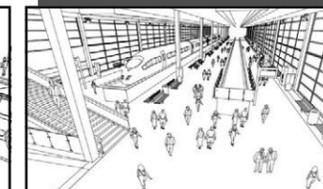
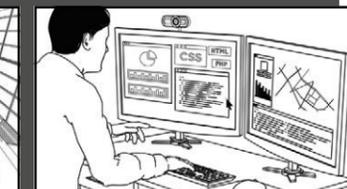
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Welcome to our digital issue:

Once again, Transportation Professional is provided as both an electronic version and as a printed magazine. Readers who receive a copy in the post may also like to browse this digital version to gain access to additional content, such as videos.

Look out for the hand icon  against some of the photographs in this issue which will direct you to further content. Certain articles also contain interactive links highlighted in blue which will take you to documents providing extra detail.

Our next issue – the combined November/December edition – will be digital only and TP will return to print in January.

Mike Walter, Editor



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This issue's cover: Bicycles available to hire in the centre of Glasgow, which hosts the COP26 climate summit later this month (see page 4).

COVER IMAGE: IAN RUTHERFORD - ALAMY



Bold action urged on carbon at summit

Government needs to show greater ambition if the UK is to meet its climate commitments, several sustainable transport champions told TP ahead of the COP26 summit in Glasgow.

They say a promise to electrify the vehicle fleet is not enough and more attention needs to be paid to promoting cycling, walking, shared and public transport as well as reducing travel demand.



↑ Richard Dilks

“Electric vehicles alone won’t get us there,” said Richard Dilks, chief executive of shared transport charity CoMoUK, part of the Sustainable Transport Alliance.

“Greater recognition of the contribution which shared transport and sustainable transport more broadly make – and steps to further those agendas – would point us in the right direction.

“Policies need to be developed and implemented involving several Government departments,” he added. “While the Transport Decarbonisation Plan this summer was a good start, it didn’t break anywhere near enough ground.”

Centre for Climate Change & Social Transformations’ director, professor Lorraine Whitmarsh, agreed that electrifying the vehicle fleet is not going to be sufficient to meet the UK’s net zero carbon target.

Instead she said advocates of active travel need to talk up the health benefits and economic opportunities of switching to more



↑ Car charging is welcome but not enough

← Active and public transit are encouraged

sustainable modes, and more people should consider whether all journeys are necessary.

“One of the things missing in the Transport Decarbonisation Plan was a look at reducing



↑ Lorraine Whitmarsh

travel demand,” she added. “We had ways to ‘shift’ modes and ‘improve’ transport in there, but not really to ‘avoid’ travel.”

Campaign for Better Transport’s head of policy and research Silviya Barrett said much of the talk ahead of the COP26 climate summit has been about the role of cleaner vehicles. While welcome, she added: “We can make gains now if people started shifting towards walking and cycling, public transport and shared mobility rather than waiting until after 2030 when we expect the vehicle fleet to slowly start moving towards electric.

“Big progress needs to be made in the next few years in terms of modal shift and reducing

travel demand. I also want to see more support for local authorities and public transport operators to improve services and make them cheaper and more attractive.”

CIHT climate change associate Andrew Crudgington pointed out that COP26 is about more than just what Britain can and should do; international agreements need to be forged on strategies to reduce transport emissions.

“The focus cannot just be domestic, this agenda needs to be broadened out and other countries should firm up their commitments towards ending the sale of new petrol and diesel vehicles,” he said.



↑ Andrew Crudgington

“We need governments and financial institutions to commit resources to international, collaborative research.”

Another issue is the need to raise awareness among the British public of the importance of adopting

less carbon intensive travel, pointed out Richard Dilks.

“There is a startling level of carbon illiteracy in this country where very intelligent people do not seem to have the first clue about the link between car use and greenhouse gases,” he said.

“But it is not enough to preach at people to change; radical policy moves are needed.”



↑ Silviya Barrett

Silviya Barrett said road pricing should be seriously considered as a means to cut traffic emissions and incentivise healthier ways to travel, but

added that lack of awareness is a problem. Parents at the school gates, for example, all too often are seemingly not aware of the impact of air pollution and how bad engine idling is for children’s health.

Lorraine Whitmarsh said car use needs to be made harder, by reallocating road space away from vehicles towards walking and cycling and reducing the availability of parking to make driving less convenient and more expensive. But she also said community engagement needs improving regarding street changes.

Andrew Crudgington added that a greater proportion of the transport budget needs to be allocated towards active travel. “As a sector, we need to do more to influence the Government as to where it should be putting its resources,” he said, adding that “incentives need to be introduced to make sustainable travel much cheaper”. **MW**



← Cycling was a key topic in Brighton

Bike sharing working in tandem with bus and train

Cycle hire initiatives can act as a ‘catalyst’ for mass transit alternatives to the car, a Labour Party conference event in Brighton heard.



↑ Julian Scriven

Brompton Bike Hire’s managing director Julian Scriven said cycle share schemes such as those in the south coast city and London enable more people to access buses and trains, with nearly half of bicycle hires being

combined with a trip using other modes.

He added that bicycle share schemes help to ‘normalise’ cycling for more people. “If you see someone using a cycle hire in London, it is unlikely they have got the Strava app running and highly unlikely they are going to be wearing lycra.” Having people “riding regular looking bikes in regular clothes” also helps “break down the tribalism” of ‘them and us’ on the roads.

“We talk about ‘drivers’ and ‘cyclists’ but no one talks about ‘busists’ or ‘tramists’,” he remarked. “I’m not a ‘cyclist’, I am a person who uses cycling as a mode of transport.”

Also at the event was the Port of London Authority’s head of environment Tanya Ferry who spoke up for the idea of passenger vessels on the River Thames being used to carry parcels, in an effort to cut vehicle miles and reduce emissions. “Low or zero carbon vehicles or even pedal powered vehicles could then carry (goods) short distances from most piers along the 95 miles in London,” she said.

The fringe meeting also heard from Wrightbus chief executive Buta Atwal who said that hydrogen is a more sustainable fuel source for vehicles than electric batteries. “There is a view that electricity is ‘green’ but right now it is not. If you live in Norway, you can plug in and be very clear that you are participating in a green network,” he said. “But we are five years away

from that in this country, maybe longer. Electric is a step forward from diesel, but hydrogen can be the greenest.”

London Borough of Hackney’s mayor Philip Glanville said the bus has a pivotal role in encouraging more sustainable travel and added that millions more journeys should be cycled or walked. Covid has sent some people back into private cars, he noted, adding that targeting peak time car commutes where passenger seats are empty should be a priority.

At a second fringe event Labour’s shadow transport minister Kerry McCarthy said “it would not be a success if we replicate all internal combustion engine miles with electric.

“There does need to be a shift in people’s behaviour as there are still carbon and pollution impacts from brakes and tyres.”

One sustainable travel champion remarked at conference that the use of private vehicles for the school run must be challenged and said a “massive cultural change” is needed to discourage parents from buying their children cars when they pass their driving test.

● Great British Railways has been urged to put an end to the “ridiculous timetable planning process” where changes to rail service patterns can take a year.

At a Conservative Party conference fringe event Chris Loader MP said overhauling the current system “will probably be the biggest factor of success in the new world for the railway; to be able to respond to passenger demand so much more ably than before”.

The event, organised by Public Policy Projects, also heard Transport Minister Chris Heaton-Harris speak about how new Passenger Service Contracts will allow more data on passenger use to be “spread far and wide” to allow the private sector to innovate.

Car sharing championed for employees

Employers must do more to discourage single occupancy car use among their staff to reduce traffic and help the UK meet its climate targets, a webinar heard last month.

“You don’t have to follow (comedian) Peter Kay and go for the car share option”, said University of Hertfordshire visiting professor Stephen Joseph, “but employers can promote sharing,



↑ Sharing the drive to cut commuting

as well as public transport and cycling. Targeting commuting can help to reduce single occupancy car use.”

Stephen also told the event – hosted by think tank Green Alliance – that more must be done to tackle housing developments “that build in car dependence”. He also welcomed a recent report from the Create Streets Foundation which calls for urban roads to be put “on a street diet” by removing dual carriageways from town centres and making roads more people friendly.

Disabled person’s charity Wheels for Wellbeing’s campaigns and policy manager Dr Kay Inckle told the event that promoting forms of transport other than the car can help to “create more connected communities” and encourage greater social participation.

Climate charity Possible’s innovation director

Leo Murray spoke of his ambition to see overhead catenary cables strung along motorways so that a lane “can be dedicated to a combination of freight and mass transit” to help tackle vehicle emissions. This could, he added, help to attract people out of their cars and make alternatives such as coach travel more appealing.

● Government is working to ensure that all special guests who fly home from COP26 in Glasgow do so with sustainable aviation fuel in their aircraft, Grant Shapps told the Transport Select Committee last month. But the Transport Secretary also said that reducing aviation emissions is not an easy task.

He was asked more generally if he would look to restrict the right to fly or the use of internal combustion engine vehicles if transport emissions were not falling fast enough. “What I would do is redouble our efforts,” the Secretary of State said, “and we already have the solutions.



↑ Glasgow aims for greener business flights

“We have the electric car, we may end up with more hydrogen perhaps in cars and almost certainly in larger vehicles.”

He went on: “In five years’ time, if we are not on track, we will have to redouble our efforts and work even harder, but I see no good reason why technology can’t provide the solutions.”

He added that he hoped more people will embrace active transport “not in a coercive way, but because people want to”.



← Preparing the ground for the Gull Wing bridge

Lift off for Lowestoft bridge construction

Supports for a striking new opening bridge which is set to improve road connectivity across Lake Lothing in Lowestoft, Suffolk, will soon start to rise out of both the water and the ground following completion of piling work currently under way.

Construction activity started in the spring on Suffolk County Council's Gull Wing project, which will deliver a 300m long, eight span bridge featuring a rare 'rolling bascule'

section capable of opening to allow ships to access the nearby port.

It will be Lowestoft's third crossing of Lake Lothing and – with the deck standing at 12m above high tide – will not need to open as frequently as the town's existing bridges, helping to alleviate congestion and improve north-south connectivity.

Council project director Simon Bretherton said: "The bridge is seen as an integral part of

the regeneration of Lowestoft and it was felt that having a visually striking design would help with that regeneration."

He explained that a major current focus for contractor Farrans is on completing marine piling works for the bridge's main pier foundations. Piles will be bored up to 60m in depth – protected by cofferdams in the water – before pile caps are constructed.

The bridge piers will then start to rise out of the ground. Meanwhile steel fabrication is under way off site for the main bridge deck spans. A key milestone is set to come in the spring when a section of bridge will be placed over a railway during a possession of the line. The project is due to open in 2023.



Lancashire upgrade pushes forward: Construction is ramping up on National Highways' A585 Windy Harbour to Skippool upgrade which promises to remove a key bottleneck from the main route to Fleetwood on England's north west coast.

The 4.5km dual carriageway scheme is being built mostly off line to bypass the village of Little Singleton. It is expected to improve journey times and safety as well as reducing the impact of traffic on communities.

Work is under way to widen a junction in Skippool where a roundabout has been removed to make way for a signalised arrangement. Heading east along the existing A585, bored piling is now starting for a new double bridge to replace an existing structure.

The upgraded route will then head south and an embankment is being built up to carry the road across a flood plain. Vertical drains have been installed to speed up settlement, explained contractor Kier Highways' senior project manager Jonathan Hornsby.

Excavation of a cutting is ongoing in the eastern portion of the project, where the new A585 will pass under Lodge Lane.

Contracts

Arcadis has been appointed as commercial partner to the East West Rail Company, which will see the firm develop a business case for the next stage of the Oxford to Cambridge project.

Galliford Try has started work on a £135M dual carriageway upgrade to a frequently congested section of the A303 in Somerset, running

for 5km between Sparkford and Ilchester.

National Highways has appointed 50 firms to its new Scheme Delivery Framework to carry out up to £3.6Bn worth of renewals across England's motorways and major A roads.

VolkerStevin will deliver a £31M 'smart bridge' for pedestrians and cyclists to cross the River Wear in Sunderland, featuring technology that creates 'interactive experiences' for users.

CIHT 100

Would you feel more confident driving, cycling or walking if the streets were occupied by fully autonomous vehicles?

YES 24%

Driverless vehicles promise to be as safe as, if not safer than, motorists whose attention behind the wheel can sometimes lapse.

NO 76%

We cannot be entirely sure that autonomous vehicles will always be able to avoid potentially hazardous situations.

To take part in the driverless vehicles discussion and other transport conversations, visit CIHT Connect at ciht.org.uk Also, see page 8.

Tube extension to Battersea completes

London's first major extension to the Underground network in over two decades has opened to passengers, following a challenging six year project to bring the Tube to Nine Elms and Battersea.

The Northern Line extension runs for 3.2km in twin bore tunnels from Kennington and – despite opening nine months later than originally planned – came in £160M under a revised budget of £1.26Bn set in 2016.

"The amount of work we have been through since 2015 when excavation started to get to where we are now is phenomenal," said Transport for London's project director Martin Gosling.



↑ Martin Gosling

He added that the connectivity promised by the scheme has acted as an important catalyst for development in the area where more than 20,000 homes are being built, including in the former Battersea power station. "If people cast their minds back 10 years to what it was like here, you can see the transformative effect that investing in infrastructure has had."



↑ An update to the Tube map and a Battersea train



↑ Outside the station and a roundel suspended between two power station chimneys, in a nod to Pink Floyd

Journey times to central London take around 15 minutes, with peak time services set to increase from six an hour to 12 by the middle of next year.

"We are really proud of what we have done on this project and this has only been achieved through collaborative working with our supply chain," Martin added.

Collaboration proved particularly crucial early on in construction when significant design changes were required to enable planned over site development above the new Battersea Power Station terminus.

A revised opening date of Autumn 2021 was announced following a process to work out the implications of the redesign, which was achieved despite pandemic related disruption.

Two tunnel boring machines launched in 2017 to carve out the new route and a novel approach was taken to remove excavated material from site, explained main contractor Ferrovial Laing O'Rourke's project director David Darcy.

"All the spoil from the two tunnel boring machines and from digging the station at Battersea went by conveyor across the power station site to a jetty and was loaded onto barges," he said. "Seven hundred loads of spoil went down the river to Tilbury where it went to a land rehabilitation scheme."

This approach is believed to have taken 47,000 truck movements off the roads.

Four new cross passages for people were completed at Kennington station in 2018 and track was installed throughout the Northern Line extension the following year. Testing of trains began at the end of 2020 while finishing touches were made to the stations.

"This has been a tremendous 'people' job," added David, with around 1000 jobs having been supported by the programme including 79 apprenticeships.

Martin Gosling said the spacious design of the new stations – which feature double height ceilings – is fortunate from a passenger experience perspective in terms of Covid.

"People using these spaces will feel they are light and airy and not enclosed." He added that the business case behind the project "has not been detrimentally affected" by the decline in passenger numbers since the pandemic.

"It is a fantastic investment, will generate revenue and improve access and opportunity for the locals," he said. Both stations are also step free and the Battersea Power Station terminus features new public realm outside and, in its ticket hall, artwork by Brazilian artist Alexandre da Cunha. SD

To view a video interview with Martin Gosling taken on site, visit: bit.ly/3ig94zZ

Active upgrades support sustainability aims

Safer and more enjoyable active travel is promised across the Nine Elms and Battersea regeneration area where an initial phase of street improvements completed last month, coinciding with the opening of the Northern Line extension.

A 2.5km stretch of Nine Elms Lane and Battersea Park Road will ultimately be redesigned to make

it more accessible to pedestrians and cyclists.

A first phase of work close to the new Northern Line terminus at Battersea Power Station involved widening footway and installing new crossing points, as well as a new section of segregated cycle lane and more accessible bus stops.

Transport for London worked with Wandsworth Council and local

developers on the improvements.

Council spokesman John Locker said: "As a new town centre emerges around Battersea Power Station and the new Northern line stations open, these new connections will encourage more people to walk, cycle or use public transport to get here."

Future phases of the work are set to be delivered between 2023 and



↑ Cycle routes have been enhanced

2025 as funding and land becomes available from developments along the corridor.

Would you feel more confident driving, cycling or walking if the streets were occupied by fully autonomous, rather than conventional, vehicles?

Yes



Chris Holmes
Transport director
West Midlands 5G

There has been a lot of talk about autonomous vehicles over the last five years as manufacturers jostle for perceived leadership.

Autonomous car technology has advanced rapidly – with sensors, intelligence in image interpretation and powerful computing capable of digesting vast amounts of data very quickly – enabling hands free driving functionality for a number of tasks from motorway driving to parking.

Most manufacturers already have or will soon be launching cars with this capability. These early hands free driving functions are the stepping stones for more highly automated cars able to deal with a much more diverse range of road and traffic scenarios.

Having worked on connected and autonomous vehicles, I am confident these vehicles will be at least as good as a very competent driver.

They also have two other distinct advantages: they always pay attention and any learning that a manufacturer has of any areas for improvement will be applied to all future vehicles and not be confined to the individual driver who learns from their own experience.

There is a third advantage brought about by V2X (safety critical messaging transmitted over the air). V2X data provides long range sensing information

beyond the reach of an in built vehicle sensor and beyond the vision of a human eye. Very fast and secure communication necessary for this information transfer is provided by 5G.

Hazards, other vehicles' movements and even data from other vehicles or from the road operators can all be shared using V2X. This will result in a much wider range of traffic and road conditions which can be negotiated safely and comfortably.

Having roads capable of hosting highly automated vehicles is equally important, such as with services that monitor road traffic and live kerbside parking. WM5G has been working with companies and operators to develop new products in this area.

With well managed infrastructure and competent autonomous vehicles, roads will be a safer place.

communicate 'over the horizon', but they don't have experience of how to deal with the unexpected – or the weather.

For cyclists and pedestrians real world incidents are building a picture of autonomous vehicles that can be confused by what a vulnerable, or obstinate, human might do.

Some experts may think they can design an operating domain to cope with anything, but as we saw recently in Tokyo (when a self driving car hit a Paralympic athlete) mistakes can be painful.

We are also worried that the safety of motorcyclists is being forgotten in the rush to test vehicles to cope with other cars.

Autonomous vehicle studies show the potential for humans to still get it wrong. This highlights a real dilemma: how far can we allow our current roads to be testbeds for new

technology when it might never be possible to safely have humans involved?

By definition, semi autonomous vehicles give back control in moments of crisis – hard luck if you are driving, riding or walking nearby and the motorist is asleep.

This explains why many car makers are now 'leapfrogging' to the highest levels of autonomy to remove the human factor altogether.

By doing so they hope to avoid a legal minefield of blame when things go wrong. Because things will go wrong.

The sooner people start being more realistic about claims that autonomous vehicles will eradicate all deaths on the road, the sooner we can all start working together to maximise the benefits and minimise the hype.

No



Neil Greig
Director of Policy &
Research
IAM RoadSmart

Fear of the unknown and losing control mean it's no surprise that many road users have qualms about interacting with autonomous vehicles.

Despite spending millions, manufacturers are still struggling to come up with systems that replicate what a human being can do in seconds.

Vehicle detectors can scan quicker and they can

Jane Cole



Job title – Managing director of Blackpool Transport and president of the Confederation of Passenger Transport

Terms of reference – As managing director, I lead my team to deliver an exceptional transport service on the Fylde Coast and beyond. In my role as CPT president, I represent the interests of members to key stakeholders and the wider passenger transport industry.

Suitability for the job – My day job involves putting the customer and employees at the centre of my decision making and choosing planet before profit. My experience and credibility within the industry has given me the opportunity to serve a term as president of the CPT.

Where based – Rigby Road bus depot and Starr Gate tram depot in Blackpool.

Transport to work – Unfortunately car, as I live in a rural location and work a variety of hours. Any local travel from my office is by walking, tram or bus and long distance is by train.

Top of in-tray – The National Bus Strategy, a redevelopment of our bus depot for electric buses and a tramway extension to Blackpool North station.

Best aspect of job – Continual personal learning around sustainable, digital and technical advancements in the bus, tram and rail industries. I am also scanning the horizon for the future possibility of tram / train in the region.

Worst aspect – Dealing with the bus driver skills shortage as a result of the pandemic.

What is the most important transport issue today? Migrating people from car to public transport. Decarbonisation needs to be backed up by Government policy on reducing car usage and investing in infrastructure to enable seamless integrated public transport.

How do you relax? Holidays in the sun and European city breaks. I run and walk to keep fit and I always have a novel and a personal development book on the go.

What advice would you give to your younger self? If you do not go after what you want, you will never get it.



The Highway Engineer was the first journal of the Institution of Highway Engineers. It was followed by **Highways & Transportation** magazine and **Transportation Professional**. Here are extracts of stories from the past.

10 years ago

King's Cross station has completed its giant dome shaped roof designed to cover a new passenger concourse. The 1700t steel and glass construction is believed to be Europe's largest single span structure in a railway environment and runs alongside the western elevation of the London terminus, where brickwork and masonry have been restored.

The concourse will create a new entrance to the station opposite St Pancras International. "This will provide a real welcome for passengers to the capital during the 2012 Olympics and in the future," said the project consultant Arup's director John Turzynski.

25 years ago

Traffic calming research shows that 20mph speed limits in residential areas and town centres cut the annual accident toll by an average of 60%. Children benefit most according to a Transport Research Laboratory study, which shows that the number of road accidents involving child pedestrians and cyclists fell by two thirds.

For all cyclists the saving was 29%. The study covered 200 schemes where an average cut in overall vehicle speeds of 9mph was recorded after 20mph limits were introduced. There was no evidence of accidents being displaced to surrounding areas and residents generally supported the schemes in the places surveyed.

50 years ago

Much thought has been given to establishing the best way of allocating funds for trunk road maintenance – and several formulas have been tried, wrote R Chettoe of the Ministry of Transport.

However, these were not satisfactory because they did not take into account the wide variations in the condition of the roads in different areas. Ministers, therefore, have found it best to rely on the estimates of agent authorities. They report the likely cost of maintaining the roads under their care during the next financial year and an allocation is then made to carry out the proposed work.

75 years ago

At weekends, business on the roads is transferred from industry and trade to personal travel, wrote Mervyn O'Gorman. Townsfolk turn out in their millions by motor vehicle for a change of air and for health, light and green scenery.

They set forth immersed in vehicle congestion: the roads they travel are for the first few miles shut in by suburbs, then the country is hidden from them by long tentacles of ribbon development.

Eventually – from behind the advertising hoardings – trees and fields appear. This experience misrepresents to many urban folks the "serenity of millions of uncrowded square miles of this country".



New ways of working

Thursday, it turns out, is the new Tuesday – and the Monday morning blues may be a thing of the past. According to the mobile phone company O2, commuter numbers in the City of London are now peaking on Thursdays as opposed to Tuesdays before Covid.

The popularity of going into the office on Thursdays has also brought forward by 24 hours the conventional time for some people to get together after work to unwind over a drink or two. If office staff haven't overdone the socialising the night before, Friday is now a popular day for working from home, as is Monday.

Last month's study of crowd movement data also reveals that commuter numbers in London remain down by as much as 50% compared to before the pandemic. Just over 160,000 journeys into the City were made on the first Tuesday back after the school holidays, less than half the number recorded on a comparable day before Covid. But on Thursday 23 September, over 200,000 journeys were recorded in the City compared to 130,000 the next day.

The mobile phone company's head of data and analytics Chris Wroe says the data shows that London commuters are adopting a true 'hybrid' approach to work. But tellingly, he added that "understanding changing commuting patterns is key to planning office spaces and everyday services like transport".

Chris is right. Transport operators including train companies must ensure they stay on top of adapting mobility patterns so that greater capacity is provided when it is actually needed and not just at times that suit the old arrangements pre Covid. No longer should we casually refer to 'peak times' of travel without making clear which day of the week we are talking about.

As we report on page 5, one request made of the incoming Great British Railways is to ensure that changes to the timetable can be pushed through more quickly. In addition to this I would add that operators must either be ready to bring more carriages into service at very short notice to suit demand, or ensure that more trains are as lengthy as they can possibly be.

In this world of continued social distancing, passengers want enough space around them to travel with confidence. Very few would now welcome a return to the sardine like conditions of many trains before the pandemic.

Protests overstepping the mark

Advocates of greater action to reduce transport emissions and encourage sustainable modes of travel will be gathering in Glasgow in the coming weeks for the COP26 climate conference. As we hear on page 4, there are calls for more commitment to encourage a switch away from private vehicles.

Influential people pushing for change will, in the main, be making their points calmly when rubbing shoulders with politicians and policymakers. While others, no doubt, will take a more direct approach by hosting noisy protests near conference venues; and in a democracy it is right that they can voice their views.

But the actions in recent weeks of one group of protesters, Insulate Britain, to block roads around the M25 while calling for the Government to improve the energy efficiency of homes goes too far. One can only wonder how much extra pollution is created by drivers caught in long delays behind the demonstrators.

Government has acted swiftly to bring in injunctions to potentially imprison protesters on and around the M25, but at the time of writing this doesn't extend to main roads all around the country.

Let's hope the authorities are ready for any roads protests near Glasgow and have sufficient legal powers to deal with those who cause such disruptive action.

Mike Walter, Editor



Transportation Professional welcomes letters from readers on all subjects raised by the magazine and about any other transportation issue. Please keep your letters brief and include your CIHT designation, if applicable. The Editor reserves the right to condense.
Address your letters to: mike@transportation-mag.com or write to: The Editor, Transportation Professional, 7 Linden Close, Tunbridge Wells, Kent TN4 8HH or use Twitter: @CIHTUK

Off road automation is miles ahead

Seeing the autonomous 'Hyperbus' in the July/August edition reminded me to contact you. Although many of your readers will be familiar (some even involved with) the widespread development of automated and autonomous vehicles, most will probably only have seen this technology in the context of road vehicles.

There is, however, extensive interest and development of this technology for off-highway vehicles. In some ways – particularly for mining and agriculture – implementation is far ahead of on-road use.

Despite this widespread use of off-highway automated vehicles, there was no universal operational safety standard for all off-highway landscapes. Due to the wide range of use cases within the off-highway sector, there is substantial variation in the operational constraints and hazards encountered by automated vehicles.

In addition, compared with on-highway,



← Quarries are looking to use more driverless plant
ZARAJSKY - SHUTTERSTOCK

which has a Highway Code that can be programmed into an automated vehicle, there are no predefined rules for off-highway vehicles, such as speed limits or junction etiquette.

The off-highway sector also has to deal with the challenge of automated vehicles interacting with things in the environment, either because they block the vehicle's path (e.g. undergrowth

or tree branches) or because engaging with them is part of the vehicle's primary function (e.g. harvesting or excavating).

These factors present a significant challenge for developing generic safety standards for the use of automated off-highway vehicles.

Earlier this year, TRL published a new 'Code of Practice for the Operation of Automated Off-highway Vehicles'.

This document was one output of a project funded by Innovate UK, delivered in partnership with Oxbotica. The project was launched last October and completed in April.

Malcolm Palmer
Senior safety consultant, TRL
mpalmer@trl.co.uk

Great Musgrave bridge concern

I was horrified to see the picture from Cumbria on p10 in the July/August edition. Dumping of concrete is not an environmentally satisfactory method of dealing with a weak bridge.

Even if the bridge was weakened by heavy vehicles this traffic does not need to be on the B6259 when the A685 and A66 are better suited to such traffic. There is also a local railway preservation group which has plans to restore the line that used to pass under the bridge.

Even if the rail preservationists do not succeed, the bridge could form part of a walking, cycling or riding route away from such traffic as there is going over the bridge.

Angus Plumb MCIHT
Nellfield Place, Aberdeen

For more about Great Musgrave, including a response from National Highways, see the September issue of TP.

Rail is an answer to lorry driver crisis

Shortage of heavy goods vehicle drivers has impacted our supermarket aisles, restaurants and retail stores, to name but a few. With the huge impact on the UK logistics sector, it is understandable that the Government would rapidly roll out a series of announcements and initiatives looking to fix the problem.

However by offering only a short term solution, it runs the risk of a short sighted approach. The long term answer is not to continue to sustain and move huge amounts of goods by road, but to invest and grow the ability to move more goods by rail.

Every freight train removes 76 lorries from our roads, according to the Rail Delivery Group, cutting carbon emissions and congestion across the country and improving

the air quality and safety of our streets.

Movement of freight on our rail network has already bounced back quicker to near pre-pandemic levels when compared to passenger travel and more should now be done to alleviate capacity constraints and drive growth.

Freight operating companies need confidence in the future electrification programme across our routes, as well as incentives and support when choosing to invest in their future rolling stock. The pinch points in the UK network also need urgent attention, with sustained investment in the infrastructure and an integrated programme to provide greater capacity and opportunities for freight.

The main causes of the HGV driver shortages are pay, working conditions and limited career opportunities.

Combined with the pressures to make our streets safer and the need to decarbonise transport, the answer to our supply issues cannot simply be to attract more lorry drivers and add more lorries to our roads.

Jonathan Edwards
Transportation market leader, GHD
Level 6, 10 Fetter Lane, London



↑ Moving freight by rail is encouraged



Working together to shape the future

Learning & Development Guide 2021

PRESSMASTER - SHUTTERSTOCK



Skills strategies set out to help transport take the next step

↑ Effective public consultation forms a crucial part of planning for major infrastructure projects such as the Lower Thames Crossing NATIONAL HIGHWAYS

Professionals demonstrated resilience during Covid but their skills will need developing further to address the carbon challenge and meet public demands, a recent discussion heard.

Under investment in skills is not a new problem for the sector but is the subject of renewed focus following the worst of the pandemic, according to CIHT's chief executive Sue Percy.



↑ Sue Percy

"In many ways Covid accelerated the skills issue for highways and transportation, and we continue to compete for skills with other parts of the economy," she says. "Going forwards, we all need to think more about how the profession has to change to address the climate crisis and better engage with communities."

"This is not just for specialists within organisations to address, but everyone; these issues have to become mainstream for all of the workforce."

For some, the pandemic represented "an eye opener regarding the way that we work" says the Project Centre's deputy managing director Ken Simmonds MCIHT. He adds that Covid has led to more of an emphasis on the need for "human focused design, rather



↑ Ken Simmonds

than delivering conventional solutions" to improve mobility.

"I don't think there is enough empathy in the sector for good design and it is not something that is really taught in colleges and universities," he remarks. "There is, I think, a missing skills set there."

Morgan Sindall Infrastructure's learning and development partner Sarah Haywood says the pandemic has "presented a new way to think differently" around skills, with more of an emphasis now on community engagement, considering the environment and carbon reduction.

"Professionals must continue to rethink and reframe their behaviours; asking why they do what they do, and when they do it," she says.

Efforts to strengthen the skills and understanding of sector professionals must also recognise "our increasingly complex world" according to Stantec's equity and access consultant Andi Adams. "The problems we face have

roots that go deep down into society such as with inclusion and diversity which feed into social impact and the environment." If the needs of a broad range of transport users are ignored, she warns, professionals risk developing systems that "inadvertently shut people out".

Last year's CIHT Young Professional of the Year, transport planner Kate Lodge from Arup, says it can be tempting for skilled people in the sector to continue doing things in the way they have always been done.

However she points out: "We must encourage professionals to be more curious and to challenge one another at all levels of business, rather than just following the next person."

Network Rail's head of people and leadership development Steph Oerton says the pandemic has shown many professionals to be resilient in their approach to work, "so let's build on that", but adds there is a need to plan ahead to meet the skills

Carefully considering the climate

"We need to attract people with all sorts of experience, from all backgrounds and with true imagination to be able to design solutions for the widest number of users," says Andi Adams about the importance of considering fully the needs of the climate in future work.

"We also have to make sure we get as much right now as we realistically think we can, so we do not have to redo so much in the future."

The discussion also heard of the need to develop greater 'carbon literacy' in both professional and public discourse. Sue Percy says that greater progress in advancing the climate agenda might

be seen if professionals can have a shared understanding of terms such as net zero, carbon neutral and offsetting.

Washington Yotto Ochieng spoke of the Government's new transport decarbonisation plan and said solutions are not just those that involve low carbon technologies, but also the choices people make regarding the impact of their journeys on the environment.

"Universities are conducting research on materials, operations, engines and fuels to reduce carbon in transport," he says. "But everyone in the sector needs to collectively look at the plan and relate it back to skills."



↑ Carbon neutral travel is encouraged

needs of the future. Programmes of Continuing Professional Development and qualifications can help people to prepare for change, she adds. Steph also calls for more employers to encourage staff to develop a wider range of capabilities to become, as she calls it, 'skills agnostic'.

Participants in the discussion, hosted by TP this summer, considered what can be done to encourage greater take up of continuous learning in the sector. "It is about changing embedded cultures and finding new ways of incentivising people to get more involved," says Imperial College London professor Washington Yotto Ochieng FCIHT, head of the university's department for civil and environmental engineering.

"We also need a range of stakeholders to get together around

training in a meaningful way – including industry, institutions, Government and universities – to ensure graduates are fit for purpose when they enter the world of work."

The event heard that CPD represents a cornerstone of professional competence and last year's restrictions on movement opened up opportunities for online learning, which can be a more inclusive way of delivering content, allowing people to fit learning in around their busy lives.

University of the West of England professor John Parkin FCIHT agrees with the need to encourage more lifelong learning, but has reservations around the delivery of content online. "I understand the point about online learning improving access to training," he says. "But learning is about absorbing the behaviours, skills and



↑ Sarah Haywood

mentalities of the person teaching you. The issue is how to make online learning engaging. I'm not sure I've cracked it."

It was also said that employers must guard against professional development programmes simply becoming 'tick box' exercises. "We need to show how CPD will be of value to work in future," says Sarah Haywood. "The workforce is transient with some engineers wanting to become quantity surveyors, for instance, so we have to help people be agile and see the career opportunities."



↑ Andi Adams

Those promoting the sector should also look to showcase the creative side of transport engineering to encourage more people from younger generations into the profession, it was said, and highlight the role of transport in addressing issues they care about.

Kate Lodge says CPD is a good way of understanding what is going on more widely in transportation, inspiring and engaging people and making sure the sector has the right breadth of skills. Going to several events early on in her career also helped her to broaden her knowledge, she adds.



↑ Kate Lodge

Ken Simmonds describes CPD as a means of "striking the balance" between someone's experience and their qualifications. While qualifications may get you through the door, "it is experience that gives greater value to the sector".

He also says that apprenticeships offer great scope for the transportation profession. >



↑ Transport designs must focus on the needs of users

Ensuring better representation

Senior role models from a diverse range of backgrounds could help to show a wide range of young people that transportation can be a career for them, the skills discussion heard.

But while the sector is slowly getting better at recruiting more women, many employers could do more to help those looking for work after a career break raising children. It was also said there is a need to address unconscious biases in the recruitment process and ensure women are not put off applying for roles they feel may be suited to them.

One participant pointed out that while an increase in flexible working brought about by the pandemic may have been useful for many, Covid might also have had a detrimental impact on people's work / life balance. Being at home for longer with access to emails could also lead to more pressure for some to work longer hours.



↑ Working from home can present challenges DRAGON IMAGES – SHUTTERSTOCK

> Discussion moved on to the issue of conflict and how enhanced professional capabilities could give those in the sector the skills to diffuse difficult situations and convey points to the public more clearly, such as around the introduction of new streetscape measures.

"In many ways civil engineering is a form of public health," says Andi Adams, who began her career with the NHS. "In transport, I don't know how many people got into the sector because they consider themselves to be 'people people', but if we don't engage with our communities properly the infrastructure is probably not going to be fit for purpose."

"We have skills as planners and engineers to impart important information to people and as the old doctors' adage goes: 'listen to your patient, they are telling you what is wrong.'"

Sarah Haywood agrees. "Truly listening to your customer is

important, but is not something we have always done well. And we have to bear in mind the different audiences we have.

"While some members of the public – and staff – are very digitally enabled, others struggle with technology. So when we create learning opportunities, they have to be right for everybody and when we communicate we have to do it in the right way for every audience."

It was also said that engineers might benefit from adopting strategies to cope better with conflict and displaying more emotional intelligence of people's needs, especially if members of the public feel change is being imposed on them.

John Parkin – who works with several different stakeholder groups to understand their needs – warns that while some are vocal at pushing for better infrastructure, other groups are less forthcoming. "It raises the question of which communities we are talking to and why," he says. "We have



↑ Steph Oerton

to engage with everybody and not just listen to the loudest voices."

John adds that it is important for engineering students to go out on to the street and see how their designs work for a range of users such as blind persons with guide dogs.

Sue Percy points out that sector professionals have to communicate clearly their intentions and strategies to members of the public. "When I got involved in the sector I was struck by the specialist language that many engineers were using.

"We need to translate what we say into words that everyone can understand, including hard to reach groups who can be excluded from the decision making process."

Kate Lodge adds that successful professionals are those who can "look back at what has been built, ask themselves if anything has gone wrong and be prepared to change things".

This need for personal accountability is echoed by Steph Oerton, who says large organisations should ensure that each and every person feels they can play their part in working well, collaborating effectively with the supply chain and keeping sustainability in mind.

"It is about having values that are alive in an organisation so they become a compass for doing the right thing," she says. "It is important to have a strong set of values that can be followed by everyone from senior leaders to frontline workers. If people know what they are, they can follow them." **MW/SD**



↑ Washington Yotto Ochieng



↑ John Parkin

← Learning is a cornerstone of competence



KBI – SHUTTERSTOCK

Views of professionals sought to inspire the next generation

Future leaders will be asked by a sector alliance about their work experiences to help shape a new recruitment and retention drive.

Highway professionals will be canvassed for their views about what makes the sector a great place to work – and where improvements may be needed – to help build a campaign around attracting and retaining staff.

A questionnaire will be circulated this autumn by the Highways Sector Council's future leaders group, led by Anna Delvecchio of consultant Mott MacDonald.

"We really need support from the sector to help us populate the survey," she says. "The stronger our baseline of knowledge, the better our call to action will be collectively.

"As many of us know, highways is a fantastic sector to be in," continues Anna. "I'm passionate about helping to inform the next generation and bridging the skills gap through the work of the Council and partnering with others to make this happen."

Future leaders targeted by the survey are not just those who stand a chance of leading a multi million pound turnover company or directing a team of thousands.



↑ Worthwhile careers are being promoted for those working on and around highways



↑ Anna Delvecchio



↑ Leon Daniels

They could also be those with the drive and motivation to lead much smaller teams, explains the Highways Sector Council's chair Leon Daniels.

"Having a job that is relevant and where you can physically see the difference you are making on the ground (such as in highways) is very attractive," he says.

"No matter what your skills are, you can watch them materialise into practical benefits."

Anna Delvecchio agrees. "Working on highways is about more than just roads; it is about social value, digital, decarbonisation and customers.

"The ability to impact on people's lives is significant whether you are

designing highways or providing goods and services. It is an exciting sector to be in."

To those considering their career choices or thinking about returning to work, she says: "Don't discount highways: you will learn so much and the reward is great when you see the outcomes of what you've worked on."

Further aims of the Council to promote highway related careers include carrying out a sector skills assessment to better inform future thinking. It is also working to promote the benefits of a larger settlement for local roads in the forthcoming Spending Review.

Council grows during a turbulent 18 months

Launch of the Highways Sector Council coincided with the arrival of Covid, but since last year the group has worked to strengthen ties between public and private sector partners.

The Council now includes client bodies, professional institutions, several major contracting groups and suppliers as well as local authority representatives.

"We are all about seeing what

the highways sector can do better collaboratively rather than separately, in a non competitive way," says the group's chair Leon Daniels.

"Ours is a broad council and we are pushing for a multi year funding settlement for all highways in the Spending Review to help encourage more investment in apprenticeships, training and people as well as plant."

The group introduced 'Project Safe Start' early on in the pandemic to help the sector recover and is working to promote the value of capital renewals to the UK economy.

Earlier this year it set out four areas for development. Alongside skills, they include supporting the transition to digital innovation, helping the Government in its Project Speed initiative and promoting new approaches to tackling carbon.



↑ Road teams worked through Covid

TERRY MATHEWS – ALAMY

CHESHIRE EAST COUNCIL

Big efforts made to enhance engineers' standing in society

Boosting public confidence in the sector is a broad aim of a four year strategy launched by the regulatory body which oversees professional competence.

Priorities for 2025 set out in the Engineering Council's new 'Advancing Regulation' document include attracting a more diverse and inclusive workforce and fostering a profession that is founded on the principles of sustainability and good business ethics.

The group's chief executive Alasdair Coates MCIHT says learning and skills are very much at the heart of engineering and is keen to champion the importance of registered engineers and technicians maintaining their levels of competence, such as through programmes of Continuing Professional Development.

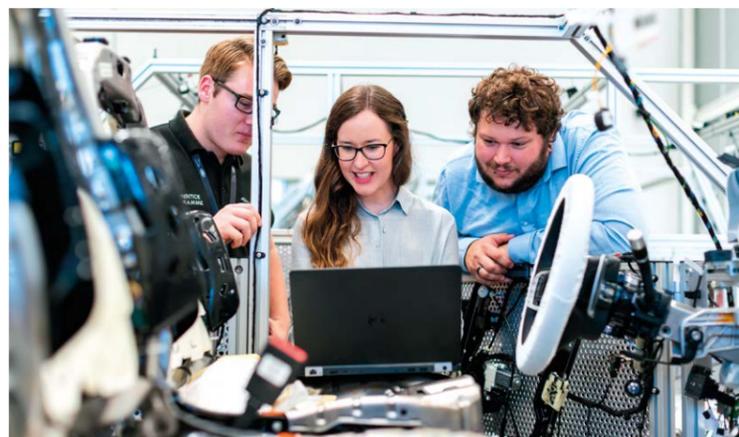
"We always need more engineers to meet the needs of society, and we are very keen to encourage people to become professionally registered," he says.

Alasdair adds that transportation engineers with post nominals help demonstrate a level of competence and commitment to their sector, which the public can trust.

He also says that having "clear speakers and clear influencers on key topics as they arrive" can help to promote engineering's standing. There is, he notes, "a real voice for engineers"



"We always need more engineers and encourage them to become registered." Alasdair Coates



↑ Digital innovation is a key component of the Engineering Council's new strategy

in helping to shape what future infrastructure should look like.

"There is a respect for engineers in society and a recognition of what they can provide," he adds. "We should not feel shy to make our points."

On enhancing diversity and inclusion, Alasdair says: "It is really important that engineering doesn't have any artificial barriers or restrictions; it has to be open to all."

Targets will need to be set by the profession to measure success, he adds, and metrics such as how many people come back into the sector after a career break will need to be understood.

And in terms of promoting good ethics, a piece of work carried out with the Royal Academy of Engineering is to be published later this year.

Another strand of the new strategy is around digital innovation. "Many

more engineers are working in this area and some professionals may not even see themselves as engineers, when they are," Alasdair explains. "It is important as a profession that we encompass new skills and requirements."

The four year strategy is also focused on promoting the Engineering Council's work on maintaining standards internationally. "Britain's exit from the EU brings opportunities and we need to ensure engineers can take part in them around the world.

"We are a UK regulator, but have an international standing too," he adds. "Many engineers are keen to work overseas and not all countries have a competence based system, so that is where mutual recognition agreements are important to allow free movement for engineers."

Improvements seen in transport planner training

Changes to the Transport Planning Technician Apprenticeship aim to improve the quality and consistency of training for those entering the profession.

The Level 3 apprenticeship was launched in 2016 to provide a dedicated route into transport planning. Several changes were made last August. CIHT assesses candidates at the end of the programme, which is aligned with the requirements for becoming an Engineering Technician. Around 200 people have started the apprenticeship, with close to 100 having gone



↑ Caroline Sudworth

through their End Point Assessment.

"The biggest change is that before you could

deliver the apprenticeship without delivering the underpinning qualification that was designed by employers; the BTEC in transport planning," says Dr Sudworth. This is now a mandatory part of the programme to help promote consistency.

Further amendments were introduced to take account of changes to the Engineering Council's UK Standard for Professional Engineering Competence, and a new 'distinction' grade is now available at End Point Assessment in addition to 'pass' and 'fail' grades.

For more information visit bit.ly/3DY2siM

Driving change for site workers

Development of autonomous construction plant could one day present – rather than threaten – job opportunities for operatives.

Imagine a future where driving an excavator or operating a piling rig involves not being out on site, but sitting behind a computer screen at home hundreds of miles away.

A future where cameras inside a cab and attached to machinery allow a plant operative to 'see' and make decisions remotely. And where artificial intelligence plus data analytics can determine how the equipment is performing and advise on what should happen next.

Far fetched? Not according to National Highways, which is working with smart infrastructure solutions provider Costain as well as technology specialists and equipment manufacturers to promote change in construction and introduce new connected autonomous plant.

Last year the highways client launched a 'roadmap' to 2035 which promises productivity gains of £200Bn within 20 years and supports a pledge that all construction and maintenance activities carried out on the strategic road network will be net zero by 2040.

Helping to develop connected autonomous plant at National Highways is its innovation supply chain manager Muneer Akhtar. "The big drivers for autonomy on site are the drive to net zero, a need to create efficiency and improve safety," he says.

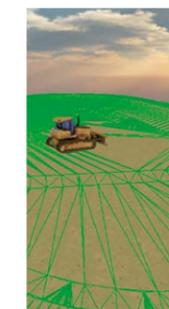
Removing people from potentially harmful situations is a key aim, he adds, "but crucially we will still need a



"People are an important part of the autonomous journey." Muneer Akhtar



"Technology will help to create jobs and revitalise the industry." Tim Embley



←↑ In future, plant may be worked remotely

very highly skilled workforce. People remain an important part of the autonomous journey.

"Building digital, data and technology skills is critical to achieving the vision laid out in our Digital Roads Strategy," he continues.

Costain's research and innovation director Tim Embley says he used to speculate that the remote operation of plant on a large scale might not be seen in his lifetime. But he now thinks it could become a reality on many sites in the not too distant future.

Recent trials of semi autonomous construction plant – where an operative is on hand to oversee works – have been seen on the A19 in north east England. Here, the more efficient operation of equipment including earthmovers and piling rigs led to fuel savings of up to 28%.

Further outings for the connected plant are due shortly on the A30 in the south west. But while the technology is still "in the transition phase" to full automation, construction operatives will need to start demonstrating new skills soon, so that they can competently oversee plant from afar.

"This is a great opportunity for the next generation to get into construction and it taps into many young people's experiences of playing computer games," Tim explains.

"The skills of machine operatives in dealing with technology and data in future years will become very prized and could help to create new jobs."

Covid allowed many sectors of the economy to introduce more technology and new ways of working – and construction sites may see a hybrid model going forwards too, he

adds. "People may not want to drive plant remotely from home all the time, so might come to site sometimes."

The manner in which connected autonomous plant is being developed bears similarities to that of driverless vehicles on roads. Costain is working alongside research company TRL to develop five levels of automation for plant. But unlike highways which have clear boundaries within a carriageway, plant is expected to roam freely across brown or greenfield sites.

"Much of the technology required for autonomous plant will need to determine not so much where it is, but where its limits are," Muneer says. He adds there is likely to be an appetite to take this technology forward. "Those who work on roads might start to appreciate they will not have to go out on to cold, wet sites all the time and it promises to make their jobs safer."

Telematics data from over 300 earthwork machines has been fed into a new cloud based digital platform, the Intelligent Infrastructure Control Centre developed by Costain and technology partners SAP and Keytree to determine how machines perform, how efficient they are and where improvements may be needed to reduce, for instance, machine idling.

Data collected showing the location of utilities in the ground is also being used to develop systems that prevent the striking of underground services by connected autonomous plant.

Digital skills will be key to developing these types of capabilities. Muneer Akhtar adds.

This article has been produced in association with Costain.



↑ Semi autonomous plant was used on the A19

Employers spell out talent needs

Addressing skills shortages is front of mind for human resource professionals and senior leaders. TP asked a major client, consultant and contractor for their views on recruitment and training.

In which areas are a shortage of talent most keenly felt?

Natalie Jones, National Highways talent delivery lead: "There are currently more jobs than candidates available in the sector. Skills that are increasing in demand include those covering digital, social value, the environment and sustainability.

"There is a need to consider how current employees can be developed to meet the future skills requirements and how we bring new people in and develop their skills base in the required areas."

Rory Poole, AECOM UK & Ireland roads sector leader: "We are finding that there is a shortage of high calibre graduates being produced by universities to satisfy demand. As an industry, we need to do everything we can to attract those that graduate with STEM qualifications, rather than losing them to other professions."

Laura Marks, Kier Highways early careers manager: "I feel the most important thing is about growing awareness of careers available in the sector so that we can engage with potential recruits from the earliest opportunity to build a pipeline of talent."

What key qualities do you look for when recruiting future talent?

Rory: "One of the things we're always impressed by is young people putting themselves forward for self development opportunities and taking every opportunity they can to further their skills. We want our graduates and apprentices to have the



← Young people are encouraged to be inquisitive
AECOM



↑ Natalie Jones



↑ Rory Poole



↑ Laura Marks

confidence to ask lots of questions and be inquisitive enough to get to know our business and tell us what we can do better."

Laura: "When recruiting young talent into our business, we look for individuals who show enthusiasm, passion, ambition and a willingness to learn."

Natalie: "Most of our early talent programmes don't require a prior qualification or experience in the area they will be working in but we look for people who have the right behaviours, share our values and show an aptitude for wanting to learn."

How can the sector attract people from a broader range of backgrounds?

Laura: "It is important to understand the varying needs of people from different backgrounds so we can support those who are keen to learn. We as an industry need to look at how we can provide a wider range of opportunities that don't perhaps follow the 'traditional' route."

Natalie: "Outside of our standard recruitment – which aims to attract a diverse pool of people – we have other programmes which encourage people to consider a career in the sector. For example, we run a returners programme aimed at people who have taken a career break."

Rory: "Equality, diversity and inclusion is at the forefront of all our recruitment initiatives. We target

universities across the UK that have high numbers of under represented groups, our graduate diversity programme is designed to address gender imbalance at entry level and STEM outreach work is an important part of our long term strategy."

How can companies promote continued learning and development among staff?

Natalie: "In having regular conversations and producing development plans, employees become more aware of what they require. As a business we have a responsibility to lead by example, making learning easy to access in a variety of formats such as through a 'learning library', formal courses, coaching and mentoring."

Laura: "Employees are a company's greatest asset, and those employees need to be listened to and invested in. It is important to understand the needs of staff and the opportunities to continually engage in their personal and professional development."

Rory: "We are committed to delivering blended learning programmes and providing tools and resources to develop our people across all stages of their careers. One example is our company's 'University' learning platform which gives employees opportunities to learn new skills and take ownership of their development."

At a glance: **Careers** ✓ **Training** ✓
Professional Qualifications ✓



↑ Employees are a crucial asset for companies in the sector

Embracing a diversity of skills to engineer a net zero future

People with advanced skills can help the sector to achieve decarbonisation says Atkins' local transport market director Jason Pavey.

Infrastructure systems are becoming ever more complex as we bring together the physical with the digital. Sustainability and driving to net zero bring further additional demands, so we need to radically rethink how we recruit and develop our people to be fit for both now and in the future.

Since March 2020 the pandemic has been at the forefront of everyone's minds. As we recover from Covid we face an even more complex challenge in tackling the climate emergency. To meet the challenges of net zero, we must decarbonise our energy system, our infrastructure and our transport systems.

Engineering net zero transport

Transport is responsible for approximately 28% of emissions in the UK. Engineering a net zero transport system will require a sharp focus on a common objective.

We have recently seen several strategic plans such as the Transport Decarbonisation Plan from the Department for Transport, a Net Zero Plan from National Highways and decarbonisation strategies from sub national transport bodies and local authorities.

The Government is also due to release its Net Zero Strategy ahead of the COP26 conference later this month.

As with the pandemic, we need to join up as part of a collective response. We must have one masterplan, a fully costed investment strategy, detailed timescales and most importantly: understand the individual skills and competencies we require to deliver net zero.



↑ Working together to grow a greener tomorrow

The skills challenge

Last month a report from the Institute for Fiscal Studies on job opportunities during the pandemic suggested there are more labour shortages in lower paid sectors than in others. To deliver net zero, we will need advanced skills.

We will need supporting technology capabilities and the skills and tools to benchmark, monitor, develop and maintain our net zero transport systems.

These skills will require new knowledge and the talent to support the alternative energy and fuel systems we will need and the infrastructure to run and maintain our transport systems.

Investing in our future

Besides the policy and financial interventions highlighted in the Transport Decarbonisation Plan, we quickly need to understand the types of capability we will need across the workforce. We must ensure that we develop the knowledge, skills and competencies we will require to design and deliver our net zero future.

Developing the right skills and capability, not to mention technology, will take time and decarbonising transport is a pressing challenge.

But agreeing on what skills we will need also provides an opportunity for individuals to develop their skills and knowledge and will help to ensure we maximise our chances of success.

Reimagining transport

As we collectively work to meet the challenges of the climate emergency and develop a strategy to shape the future of transport, it provides an opportunity to radically change our approach; embracing talent from other sectors and industries.

It means placing sustainability and net zero at the front of our talent plans. We also need to actively embrace new suppliers, technology providers and other businesses working as a part of the green supply chain.

Some of these organisations already exist, some will be new, but we need to identify them. Solutions such as the Digital Intelligent Brokerage – developed by Atkins and trialled by the Department for Transport and Wiltshire Council – can help to identify new solutions that can support the sector in delivering net zero and help build diverse teams, encourage innovation and develop a strategy for achieving net zero efficiently and quickly.

It is time to be radical in recruiting and developing the workforce of the future. What served us well in the past will not achieve the step changes we need going forward.

This article has been produced in association with Atkins.



"Knowledge and skills must be developed to help deliver net zero."
Jason Pavey

Mentors providing global support



↑ Jeevan Rana on a construction site in Qatar. Every professional can learn from one another, he says

Members around the world are benefiting from professional development opportunities offered by CIHT. Here we profile two senior engineers with close ties to India and Qatar.

Several young engineers from India – as well as Bahrain, the United Arab Emirates, Qatar, the UK and Ireland – have benefited from the experiences of Jeevan Rana, who acts as a mentor for overseas professionals and promotes CIHT qualifications.

Jeevan is a principal engineer with Atkins and started working on transport projects in India in 2007 on completion of his Masters from the Indian Institute of Technology

Kharagpur, before moving to the Middle East in 2012. He became an Incorporated Engineer with CIHT in 2014, moved to the UK in 2015 and became Chartered in 2018.

He has conducted several presentations for young Indian engineers on the benefits of professional registration and has sponsored eight individuals from across the Middle East, India and the UK. This involved discussing their work experiences and education,



“Be consistent in your training efforts and keep yourself up to date.”
Jeevan Rana

advising them on the next steps needed to gain further recognition and signing off their portfolios.

“Every professional can learn from each other and I had a very kind mentor who supported me early on in my career,” he says. “I feel it is my duty to give something back to the profession by mentoring others.

“The main focus is about being consistent in your efforts and keeping yourself up to date. I strongly believe that becoming Chartered or Incorporated helps you to get a job in the UK and also shows that you are a capable professional,” he adds. “Anyone looking for overseas opportunities like me should find that accreditation helps.”

Jeevan’s recent project experiences have included the A9 dualling in Scotland, the Edinburgh tram extension and several public realm and active travel schemes.

He now works on schemes for Wiltshire Council and in the east of England carrying out pavement and traffic engineering, highway design and project management.



↑ Talking with others about the benefits of professional registration

French civil engineer Herve Etave is helping to develop a Qatari highway scheme and recently became Chartered with CIHT to become more accustomed with the UK’s approach to engineering.

Now he is offering support and advice to others.

Herve – a technical director with Arcadis – is nearing the end of a six year placement near Doha, helping to design and build a 46km section of the Al Majd Road.

The project is core to the road network in Qatar and is also set to improve access to football stadiums ahead of next year’s World Cup.

He joined the Institution two years ago shortly after the project was highly commended in the CIHT Awards’ International

category in 2019 and he became a Chartered Engineer in March.

“Before the pandemic the Qatar Group held many technical meetings and site visits, which were a good way of gaining insights into the engineering sector. More recently its virtual meetings have been very useful,” he says.

Herve now helps to promote the benefits of Institution membership among his colleagues, has mentored one engineer and was invited by neighbouring CIHT Dubai to give a

testimony of his experience gaining Chartership.

“Becoming a member helped with professional development and networking, and means my skills and competency are well recognised,” he adds.

Herve’s early career included five years with the French government developing the highway network in Normandy, before joining a private engineering company near Paris. He later started a small engineering practice with several others. After 22 years, he and his wife decided to move to the Middle East.

His advice to younger engineers is to “continue learning, get involved in professional development opportunities and be mindful of new technologies and issues such as climate change.

“Covid has changed a lot of things, especially for the young engineer looking for guidance from a mentor or team leader, and it can be difficult for them,” he points out. “The internet makes it possible to work alongside other people, but the social interaction is not the same.”

Herve says his next move could be to Africa to work on sustainable and community engineering projects. “Sustainability is so important now and has to be incorporated in any project to meet carbon and net zero targets.”

For more about qualifications with CIHT visit ciht.org.uk/education
To find out about becoming a mentor visit bit.ly/3oBWChV and to request a mentor visit bit.ly/3iBGiKO



↑ Part of the new Al Majd Road near Doha, which will be completed shortly



↑ Working with schools could inspire more children

Sector champions urged to come forward

Highways and transportation professionals can play their part in helping to overcome major skills shortages facing the sector by signing up as STEM Ambassadors and engaging with young people, says CIHT’s President Deborah Sims.

Deborah’s presidential theme for the year is ‘Route to Professionalism’ and she emphasises: “I think it should be integrated in everyone’s professional life that you not only absorb and take on knowledge yourself, but you share it with the next generation.”

She explains that while reports suggest increasing numbers of students are getting interested in pursuing STEM, there remain widespread misconceptions about the roles of engineers and more can be done to promote the broad range of careers available in the profession.



“They say you don’t really learn something until you teach it; that’s so true.”
Deborah Sims

“Doing a civil engineering degree opens up so many different pathways, but a lot of them I think are almost invisible to young people,” says Deborah. “We need to be getting into schools and inspiring the next generation.”

She adds that having visible role models in senior positions within the industry is crucial in encouraging more women and black and minority ethnic people to join the sector.

As well as providing an opportunity to give back to the profession, becoming a STEM Ambassador can stand members

in good stead at professional review and help them to ‘embed their skills.’ “They say you don’t really learn something until you teach it; I think that’s so true,” says Deborah.

The President is also keen to encourage members to “develop their professionalism” and keep in mind the principles of being “curious, credible and creative” as part of their commitment to the sector.

Engaging in ongoing learning and keeping up to date with latest thinking are particularly important in light of major challenges such as the climate agenda and the proliferation of new technology, she says.

“I think whenever things are uncertain, getting more qualifications, more knowledge and having a stronger CV can only ever be a good thing,” adds Deborah.

To find out about becoming a STEM Ambassador visit bit.ly/3FkIkYS

Board presents bold digital vision

Greater opportunities to host events online will be supported by CIHT's new Education & Professional Development Strategy Board.

Promoting digital learning opportunities, offering structured routes to qualifications and supporting better planning of CPD are among the likely priorities of a new Institution group which held its first meeting earlier this month.

CIHT's new Education & Professional Development Strategy Board has been set up as part of a Governance Review implemented in June this year, which saw a splitting up of the former Membership & Skills Strategy Board.

Chair of the new Board is Richard Llewellyn of Edinburgh Napier University, who is also keen to encourage more specific focus on highways and transportation in traditional civil engineering degree courses.

Richard is currently a PhD researcher at the university, having previously worked there as a lecturer in transportation engineering. He began his career in consulting and spent a year as Transport Scotland's graduate development manager.

"One of the great strengths of CIHT is the breadth of qualifications that we



"One of CIHT's great strengths is the breadth of qualifications that we offer."
Richard Llewellyn



↑ Remote learning has grown in popularity during the pandemic

offer," says Richard. Part of his vision for the new Board is around ensuring members are provided with "clarity and structure" as they work towards professional registration.

"I think one of the best things CIHT has done over the past 18 months is introduce the Professional Development Framework; it is a great start but I am sure there is more we can do, working with employers to improve routes to qualifications."

Richard adds that in light of the pandemic "there is a lot of potential for change on the continuing professional development side; that is something we need to grasp".

Covid brought with it opportunities to host events digitally, breaking down geographical barriers and enabling greater 'on demand' learning. "I think

we have really got to maximise on that going forward," he says.

Richard also highlights a need for professionals at all stages of their careers to think about their skills gaps and plan out CPD accordingly, particularly when it comes to emerging topics around the climate agenda and future mobility. "I think a structured framework for CPD provided by CIHT is something we are going to need to see in the future," he says.

The Board's first meeting saw discussion about its long term priorities as well as particular goals for the year ahead.

For more information, contact education@ciht.org.uk

At a glance: Careers ✓ Training ✓ Professional Qualifications ✓ CPD ✓

Online learning platform to launch

CIHT will be releasing a new digital learning resource for members early next year.

It will offer online training modules in a bite size format on a

range of subjects specific to the highways and transport industry, and allow professionals to work towards earning digital 'badges'.

Modules covering climate

change, sustainability and equality, diversity and inclusion will be released first, with more courses and content added as the platform develops.

Users will be able to log and record their CPD as they work to complete an assessment framework.

The platform will also link to a 'knowledge hub' where users will be able to access supplementary CPD through accredited CIHT courses and learning modules.

The platform will feature a combination of free and discounted courses for CIHT members to follow.

Access will be via the CIHT website and all members will be given an appropriate log in.

"I would really encourage members to make good use of the digital learning platform," said CIHT President Deborah Sims.

"It is going to provide so many opportunities for people to learn in the way they want to learn; they will be able to focus on topics that are of interest to them in a manageable format that makes it very easy to build up to qualifications."

She added: "This is an exciting opportunity and a really good step in terms of our offering to members."



↑ Climate change will be among the first modules of CIHT's digital resource



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People and skills recognised at annual awards ceremony

Concluding our coverage of this summer's CIHT Awards, we profile winners of the Team of the Year, Employer of the Year and Collaboration categories.

CIHT Team of the Year Award

Winner: Momentum Transport Consultancy
 'Team Momentum' has shown what successful teams can achieve together over the last 18 challenging months. The company adapted quickly to remote working – maintaining a collaborative approach to work – and was able to hit revised business targets while investing in training and looking after staff wellbeing.

The firm continued to win work, collaborated on thought leadership reports with universities and transport operators and brought new ideas to clients on how transport could be used as an enabler for recovery focused on public health, air quality and addressing inequality.

The death of George Floyd in America last year brought staff together and "truly underlined for us what it means to be part of an inclusive, collaborative and progressive team", the company adds.

Momentum's head of marketing Sarah Pryor says: "We couldn't be more thrilled to win the Team of the Year Award. This year has been a difficult one for so many people; to have won our category is a fantastic show of appreciation for the hard work of every member of our team."



Judges' comments: "This entry highlighted how the team in a diverse young consultancy reacted to the challenges of the last year on a number of fronts and did so successfully, while maximising the opportunities it presented."

Highly Commended: Area 9 Alliance
Commended: M6 junction 19 Integrated Project Team – Amey / Sir Robert McAlpine, National Highways and WSP
Commended: Vauxhall Bridge, London – Eurovia Contracting, Ringway Jacobs and Transport for London

CIHT Employer of the Year Award

Winner: Project Centre

Recognising that its greatest strength is the people it employs, Project Centre has made concerted efforts to engage with and listen to staff to improve workplace culture, diversity and inclusion and ensure that employees feel happy,

supported and challenged. Implementing a staff survey was a key first step.

A professional development programme was created to place focus on growing talent and the company has offered more opportunities to get involved in mentoring, STEM and volunteering initiatives.

Creating a more inclusive environment has been key and several schemes have been implemented including an Equality & Inclusion Group and a Women's Learning & Development Network. Through these initiatives the company says staff happiness and retention have increased.

Managing director Keith Hanshaw says: "I cannot put into words how proud I am of this achievement. This is testament to the dedication and involvement from all of our staff and I want to thank each and every one of them for all their hard work and determination in what has been a tough year for everyone."

Judges' comments: "We were impressed with the wide range of initiatives including development opportunities focused on the long term. The company has also introduced a number of specific measures to support, embed and celebrate diversity."

Highly Commended: Stantec
Commended: Civic Engineers



CIHT Collaboration Award

Winner: Collaboration in Action, a South West Journey – National Highways and Ringway Infrastructure Services

Sustained productivity benefits have been delivered on National Highways' South West Maintenance & Response contract through a process of improving collaboration alongside service provider Ringway Infrastructure Services.

The contract went live in 2017 and brought together two former operational areas into a single South West region. Collaboration was low at a local level and each team had deeply embedded cultures, inhibiting the ability to implement the new contract arrangements effectively.

A journey to greater collaboration was needed if both partners' objectives were to be met. This involved open and honest dialogue as to the challenges that needed to be addressed and a series of collaborative working sessions were held across the region to resolve issues and identify action plans.

Ringway Infrastructure Services'

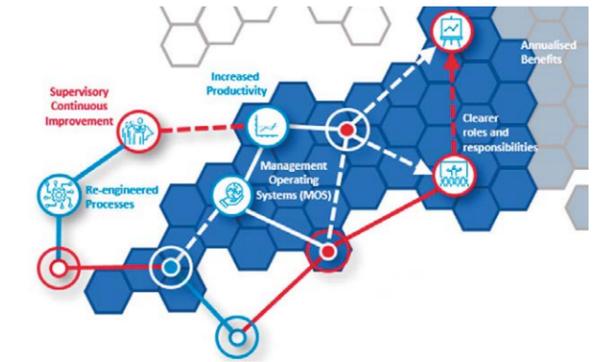
divisional manager Simon Dando says: "Both National Highways and Ringway teams have understood what works best in the delivery of the service and while it hasn't removed all the challenges, it has changed the way we solve them, together."

Judges' comments: "The team overcame tension and frustration of the previous working relationships on this contract and turned them into a very healthy and productive relationship. They recognised that talking about collaboration did not mean it was happening in practice and managed to restore confidence before starting to deliver changes."

Highly Commended: Wiltshire Highways Service – Wiltshire Council, Atkins, Ringway and Tarmac

Commended: Morgan Sindall Infrastructure and Leicestershire County Council

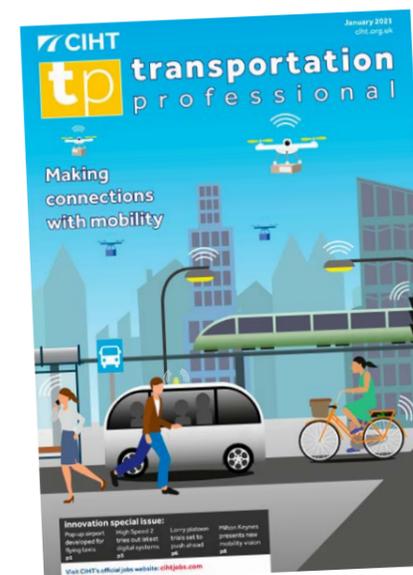
Commended: Vauxhall Bridge, London – Eurovia Contracting, Ringway Jacobs and Transport for London



To read about the winners of eight further categories from the CIHT Awards, please refer back to the July / August edition and the September digital issue of Transportation Professional.

The Innovation Report

Publishing in the New Year



Creative ideas and bold visions that are helping to shape the future of roads, railways, airports, sustainable travel and urban realm are set to appear in Transportation Professional's Innovation special in the New Year.

To find out how you can profile your company and promote your innovations in this special issue please contact Commercial Director Fawad Minhas on 01892 553149 or email fawad@transportation-mag.com

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Urban driver safety brought into focus

Looking over my shoulder, I peer down the nearside of our lorry driving through Mayfair and wince as a cyclist attempts to undertake us through a narrow gap. I hope the driver alongside me has seen him.

Except there is no one next to me and I'm not sitting in a heavy goods vehicle in London, but behind a boardroom desk 25 miles away near Sevenoaks wearing a virtual reality headset.

Today I'm taking part in a safer urban driver training course in the offices of contractor FM Conway immersed in footage shot on busy streets, from the perspective of first a cyclist and then a haulier.

Delivering the training is former lorry driver Andy Wood, probably the most engaging presenter I have ever seen. Frank, charming and relatable in equal measure, his course delivered hard hitting messages in a manner which made you listen and take note. Everything he said made sense. I only planned to stay an hour, but was there for more than two.

"As a driver you must be prepared," he told us, "for cyclists coming up the nearside and pedestrians about to cross. We need to be so careful out there and have to be constantly focused."

Andy pointed out that vulnerable road users account for around half of all road deaths worldwide as they don't have a protective frame around them and are at particular risk from vehicles at junctions.

With headset on, a series of scenarios were played out: from identifying the behaviours of vulnerable road users and sharing the road safely, to negotiating other users and watching as a heavy vehicle turns left.

To begin with I'm in the saddle, cycling through the rain in Shoreditch before the action switches to the nearside of a lorry as it passes over Waterloo Bridge. In each case participants



← Lorries and active travellers in central London

can look up, down and over their shoulders and I really got a sense that I was 'there'. By getting both points of view, it was clear to see how little room for error there can be on busy city streets. "Everyone on the road needs to work together to stay safe," explained Andy.



Lorry drivers sitting the course were reminded to look out for cyclists everywhere, be particularly alert to pedestrians wearing earphones about to step off the kerb and how trying to establish eye contact with other road users is a good idea. We watched sobering footage from a television documentary showing the unsuccessful efforts in a hospital to save the life of a cyclist hit by a lorry, and heard of the benefits of remaining courteous, calm and considerate behind the wheel.

Participants were reminded of the distraction mobile phones can pose to drivers – best to switch it off and put it out of sight – but it was interesting to hear also of the risks of changing the radio channel or eating while driving. By doing so, Andy explained, you are not fully in control of your vehicle and could cause an accident.

Another area of concern is if drivers feel under

pressure to reach a destination on time. While it may be tempting, we were reminded, the more your foot goes down on the accelerator the more the risk goes up.

We also heard of the need to follow the rule of 'COAST' – to Concentrate on your driving, Observe other road users and your surroundings, Anticipate the actions of others and be ready to react, allow enough Space to stop your vehicle safely and allowing more Time to brake, especially in bad weather.

To test drivers' awareness, Andy played a video showing footage of a seagull beside a beach and asked us to count the number of times the seagull drops a stick. Was it six or seven times? Hard to see, so we try again. Maybe it was eight. But it didn't matter.

"Did anyone see the crocodile," he asked. What? Only on a third play of the footage do we notice the enormous reptile in the foreground. So focused were we on the seagull, we hadn't noticed something more important. "You need to be aware of all your surroundings and not just one thing," Andy said.

Later I speak with the company's road safety manager Dave Conway who tells me that the core intent of the course is to try and give drivers empathy for cyclists without placing them in a hazardous environment.

Using virtual reality allows the trainer to point out hazards clearly – pausing and replaying specific scenarios if needed – and is of greater value, he added, than getting drivers to ride bicycles around a deserted industrial estate on a Saturday morning.

On my way out of the building I think about how much I – a pedestrian, cyclist and motorist – had learned, even though I have never driven a lorry. About to cross the road I take half a second longer than usual to check my surroundings and, as I see a lorry approaching, make sure to give a small nod to the driver. **MW**



↑ Hauliers must remain alert to all road users



↑ Lorries turning left pose a risk to cyclists

Putting people rather than traffic first for new housing

'Predict and provide' is being replaced by a new approach to assessing transport need called 'vision and validate' which focuses on active and sustainable travel, says Mike Axon FCIHT.

Introduction

Transport assessments have traditionally been firmly rooted around a traffic focused 'predict and provide' approach. A prediction was made about how many people would like to drive, an 'acceptable level of convenience' was set for commuters at peak hours, and the road network was designed to accommodate that.

We prioritised vehicular movement and the basic premise was that this traffic would 'come what may'. This assumption, however, isn't a true reflection of reality. The fundamental law of traffic is that on a busy network the volume of traffic is a function of the available road space.

Following the traditional 'predict and provide' often leads to either a conclusion that development cannot be accommodated, or that it will require highway works that are probably unnecessary. But the consequences of this are the antithesis of what we are expected to achieve in terms of addressing issues such as climate change, health and housing.

It is no surprise then that industry bodies such as CIHT, the Town & Country Planning Association and most recently the Department for Transport in its 'Decarbonising Transport' publication in July have advised that the 'predict and provide' approach should be abandoned.

Instead, we say, the transport assessment process should follow an approach that prioritises a reduction in carbon emissions, healthy living and is led by masterplanning. In this way it addresses big policy issues of the day.

Following a new vision

An EU research project called 'CREATE' coined an expression for this approach, which it called 'vision and validate', sometimes known as 'decide and provide'. The idea is to decide what we want to see and design accordingly so



↑ Active travel is at the heart of plans for Harrington



Mike Axon is the managing director of Vectos with 30 years' experience in the development industry. His expertise includes masterplanning and placemaking design, and advising on transport policy.

that the objective is achieved. This is the right way to proceed where it is 'accessibility' – not traffic – that matters most.

This approach means a fundamental shift in transport analysis. Change is already present in planning policy, but often does not find its way into the nuts and bolts of assessment. This is hindering the best delivery of homes and development.

But change means a great deal more than simply reducing the predicted traffic by an amount equal to what we think people may be persuaded to do given no constraints, and then still 'providing' for the residual demand. That is still 'predict and provide'.

In some circumstances it means using road capacity as a tool to limit or reduce traffic volumes. Within this approach, traffic models are being used to inform, explain characteristics and to scenario test, and not as the 'pass' or 'fail' arbiters for which they have often been used in the predict and provide world.

Many schemes strive for this but are thwarted by requirements to invest substantial amounts in expensive road infrastructure on a 'what if it doesn't

work?' basis. This 'what if' approach does not just assume that policy will inherently fail, it is self fulfilling.

Considering climate change

We must have the confidence that our planning policies, our climate aspirations and our health objectives are sound and will succeed. Building road capacity 'just in case' for non strategic reasons is not just weak, it will imperil the delivery of climate change targets.

There is precedence. These include Harlow & Gilston Garden Town in Hertfordshire; Plas Dwr in Cardiff, Silverstone Park in Northamptonshire; Dunton Hills Garden Village in Essex and Worcestershire Parkway Garden Town.

Dunton Hills, for instance, features in the draft Brentwood Local Plan. Landscape and masterplan led, it makes sure that the right land uses come forward and it prioritises active travel connectivity within the design.

It includes connectivity conduits further afield, with its most major access infrastructure being a dedicated shared transport and active travel corridor only. It accentuates

Brentwood Council's 'Sustainable Transport Integration Vision' which seeks to rebalance from car dominance to movement corridors.

Over in Oxfordshire, a 6500 home proposed new settlement at Harrington takes this to the next level. The primary movement network is the active travel network. It knits in 'Third Places' (work hubs) and 'Mobility Hubs' (which include a community concierge, electric bikes, scooters and other shared travel systems) with the landscape and neighbourhoods.

Investment in connectivity infrastructure throughout and beyond the mini arc of places in which it sits focuses on smart shared travel systems including corridors for micromobility and active travel. Private traffic is a choice, but not a priority.

Changing times

One of the many things the pandemic has taught us is that some of the old rules are not necessarily needed any more. Under the 'accessibility' umbrella, transport is often the 'third question' after 'Can I do it online?' and 'Can I do it online and get it delivered?' Parking need not be 'on plot' and the asset (a private car) need not be owned by the individual.

We also look at accessibility across the whole day, not just the commuter peak, because liveability, climate and health are most important. We also want community interaction for mental and physical health benefits.

So when it comes to mobility we encourage it at the local level, to mingle, to pick up parcels from the Hub and for leisure and living. It can be described as 'the 20 Minute Town'.

Encouraging local living

Surface transport is the single biggest emitter of carbon in the UK today. The first task among the measures to combat climate change is to maximise



↑ Better assessment of transport need could improve housing delivery

those trips which are best served by local living including for example, going to school, taking the dog for a walk, visiting friends and buying a pint of milk.

In doing so, the aim is to maximise the relative attractiveness of 'classic mobility': two feet and two wheels.

For those trips that then perform a regionally significant purpose including higher order shopping and interaction between businesses, the task is to make that easy and climate efficient.

Therefore, the accessibility vision can be thought of as follows:

- **Maximise local living** – Ensuring that the community provides the facilities that satisfy day to day living needs including schools, leisure facilities such as open spaces, jobs, other people, day to day shopping, means of receiving deliveries, means of working 'from home' but with other human interactions, otherwise known as 'Third Places'.
- **Creating a place** – Here, local living is undertaken by a good choice of the means of accessibility, but in order of priority. So digital connectivity first, followed by active travel, shared travel and then single occupancy private vehicle travel. The primary movement network may well be the active travel network, alongside which there may be roads.
- **Connectivity** – By this we mean beyond the local area, through a good choice of means across the day, but in order of priority: active travel, then shared travel followed by single occupancy private vehicle travel. There may be a different priority for some business travel.

To put this in context, without any heroic assumptions about change in attitudes, and based on existing data from the Census, the Office for National Statistics and the National Travel Survey, it is likely that the following 'internalisation' of accessibility will be readily achieved in a suitably sized, well planned and well located new settlement:

- 90% + of education trips.
- 60 - 80% of leisure and daily shopping accessibility.
- 20 - 40% of residents travelling to a permanent workplace will travel to that workplace within the settlement.



↑ Providing good access to local facilities is urged

- 30 - 40% of working residents will work from home, or from a local 'Third Place' within the settlement on any given weekday post the Covid period, an increase from typically 20 - 30% pre pandemic.

These are 'observed effects' from typical small towns, except for the work from home figure, which is an expected figure based on a portfolio of reported surveys.

This often equates to about 65 - 80% of all reasons for accessibility being contained within the local community. With good design or retrofit – and accentuating changing attitudes particularly between generations – we can do better. It is now possible to make estimates based on published data of likely working from home proportions on any single day based on authority area without the benefit of any further intervention.

Conclusions

Key drivers for a new settlement are size and location, and creating a critical mass of homes and on site services that allow trip 'internalisation'. Transport is not a subject in its own right when it comes to new settlements, it is instead a critical subset of masterplanning.

'Vision and validate' offers great potential for housing development by rebalancing investment in the infrastructure required to make housing happen, away from highways towards social, green and sustainable infrastructure supporting well designed places for the future.

Acknowledgements

This technical paper has been peer reviewed by CIHT's Urban Design and Sustainable Transport panels.

Investment priorities outlined ahead of Comprehensive Spending Review

Placing sustainable travel at the heart of Covid recovery, committing to longer term funding arrangements across transport networks and improving resilience to meet the climate threat are among CIHT's key asks in its submission to the Government's Comprehensive Spending Review.

The submission sets out major benefits of investing in highways and transportation infrastructure and services and details seven core priorities for the three year spending review, the outcome of which is set to be revealed at the Autumn Budget on 27 October.

CIHT has told the Government that transport spending "is not just critical to economic performance and productivity, but it addresses other key policy areas where it is often not recognised or seen as a barrier".

The sector is crucial to achieving Government objectives around climate action and 'levelling up' the economy, the Institution emphasised, with investment in transport also helping to address agendas such as inequality, housing and sustainable communities and public health.

One top priority for Government should be to develop a National Transport Strategy setting out a vision over a minimum 10 year period that details requirements across all modes and is consistent with net zero ambitions. This would support greater coordination of activity across the UK and help those involved in and dependent upon transport to plan and invest for the future, CIHT's submission says.

The Institution is also calling for High Speed 2's delivery plan to be confirmed as part of the



↑ Greater active travel investment would offer societal benefits including improvements to health

Comprehensive Spending Review and urges long term funding certainty for local roads to put them on a similar footing to the strategic network.

CIHT Chief Executive Sue Percy said: "When it comes to climate action and levelling up, we see investment in the local highway network as the biggest transport priority; without adequate funding other Government plans will not be met."

Government is urged to commit to delivering the Institution's four point 'Improving Local Highways' strategy which includes a proposal for a 10 year additional funding settlement worth £15Bn to address the maintenance backlog.

CIHT has also emphasised that investment in sustainable transport must be at the core of

post-Covid recovery work by the Department for Transport and says cross departmental funding should be identified to support the switch to low carbon and active modes, which can offer major health benefits.

On road safety, a long term strategy is urged to significantly reduce the number of people killed and seriously injured on the roads, with CIHT considering target setting to be "vital" to measuring and reviewing casualty reduction and providing vision and focus to activity in this area.

Skills must also be a key priority and the Institution says Government should work with the sector on a strategy for developing the workforce to deliver on planned transport investment. An upskilling plan is also needed to support the transition to net zero as well as a long term STEM education strategy.

CIHT's final major priority for Government aims to ensure transport networks are resilient to the threat of climate change. It calls for 'transport resilience assessments' to be made a statutory requirement for all transport asset owners to identify vulnerable areas and for a central fund to be established to support the mitigation efforts.

CIHT's submission for the Comprehensive Spending Review can be read in full by visiting bit.ly/3B4iqWA



← Longer term funding for local roads is urged

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Copy to be considered for publication in the next issue should be submitted by Friday 29 October

CIHT looks ahead to climate conference

Transport is set to be a key topic at the forthcoming COP26 conference in Glasgow where CIHT will have a significant presence as part of a Built Environment virtual pavilion.

The pavilion – accessible both online and to physical attendees – will be showcasing global low carbon projects from across the built environment sector and will host a series of events focused on the conference's daily themes.

On 'Transport Day', 10 November, CIHT Chief Executive Sue Percy will be a panellist at a session titled 'Planning for transport and connectivity: How do we build holistic net zero and resilient places of the future?'

Other pavilion events the Institution will be contributing to are set to include a session on empowering young people to become climate aware professionals on 5 November. Details of how to register for the pavilion and the events programme will be made available shortly.

CIHT is also supporting a Sustainable Innovation Forum that will take place at COP26 and online between 8 and 10 November. This forum aims to identify key innovations and technologies that can be deployed and introduced at scale to support decarbonisation.

The UK's published objectives for the conference include accelerating the global transition to zero emission vehicles, with the Government hoping to



↑ Glasgow will play host to COP26 which starts at the end of October

encourage advanced economies to ensure that all car and van sales are zero emission by 2035, and by 2040 across the rest of the world.

CIHT supports this goal but continues to remind Government that technology on its own will not get the UK or the world to net zero. The Institution welcomed that the recent Transport Decarbonisation Plan recognised the need for action to reduce the demand for travel and to shift journeys to more sustainable modes.

Meanwhile, the Institution is continuing to push ahead with its Route to Net Zero project which is placing an initial focus on helping members ensure

they have the awareness, knowledge and skills needed to support decarbonisation in the sector.

Work is under way on plans to support carbon literacy for transportation professionals, with the first outputs expected to be available early in 2022 via the new CIHT Digital Learning Platform (see page 12 of this issue's Learning & Development Guide). If you are interested in supporting the development of these materials contact andrew.crudgington@ciht.org.uk

More broadly, the Institution is in the process of embedding climate action as a golden thread through its next Strategic Plan.

Transport plans take shape for COP26

Detailed and complex preparation has gone into the development of a transport plan to deal with "unprecedented" impacts which are expected on Glasgow's transport network during COP26, a CIHT Scotland webinar heard.

World leaders are set to meet later this month at the climate conference and a major public communications campaign is now getting under way to support travel demand management during the event.

"The transport plan aims to ensure the conference is delivered safely and securely and that our transport networks perform with resilience," said Transport Scotland's head of events resilience Nicola Blaney, CIHT Scotland's chair. "It considers the needs of the delegates and of the wider travelling public so we can maintain business as usual in the city."

She added that public transport and active travel sit "at the core" of transport planning for the event. Enhanced rail services will be provided on local lines and a fleet of electric shuttle buses will be deployed to take people between the city centre and the conference's SEC venue.



↑ Nicola Blaney

Event delegates and volunteers will receive free smart cards for travel while roads near to the venue including the Clydeside Expressway will be closed during the event for security purposes.

Systra associate Martin Campbell discussed the use of transport modelling to predict the impacts of COP26 on the network and highlighted how some suppression of demand will be required among motorists, such as through encouraging commuters to work from home or change mode.

He added that further action may be needed on particularly busy days, including around a planned climate protest on 6 November.

Mott MacDonald project manager Mairi Joyce emphasised the need to help people make informed travel choices and promote behaviour change in the city during the event through effective communications.

Key messages for travellers include to expect disruption to road networks, to plan journeys in advance and where possible to avoid driving, as well as keeping informed by checking travel advice on the getreadyglasgow.com website.



↑ Mairi Joyce

Members participate in Welsh roads review

Several members have been appointed to participate in a review of road building commissioned by the Welsh Government.

A review panel has been established to consider whether, in light of the climate emergency, new roads are the right solution for the country's transport challenges, or whether there are alternative sustainable modes of transport that would work better. CIHT welcomes the review.

Among the panellists will be CIHT Cymru Wales chair Julie Hunt MCIHT, who is associate director of highways at Jacobs and a member of the Institution's Learned Society & Technical Strategy Board.

Joining her will be professor of future mobility Glenn Lyons FCIHT and professor of transport engineering John Parkin FCIHT from the University of the West of England. The panel is chaired by Dr Lynn Sloman of Transport for Quality of Life.

"The panel will bring a wealth of experience and diversity of perspectives to this review," said Dr Sloman.

Training framework put to good use

Public and private sector organisations are benefiting from CIHT's Professional Development Framework which launched last year to provide staff with a structured approach to training that supports routes to qualifications.

The framework is an online system allowing users to record knowledge and experience gained at work and benchmark their progress against professionally recognised standards, including CEng, IEng, EngTech and Chartered Transport Planning Professional.

Transport Scotland is using the system to progress its graduate transport planners towards Chartered qualifications and currently has five staff using the framework, explained the agency's head of strategic transport planning Fiona Brown MCIHT.

"We see professional registration as an essential requirement for our technical staff and felt we needed to have a clear pathway in place to help nurture and support our graduates as they work towards those qualifications," she said.

Fiona is herself a Chartered Engineer and is responsible for the transport planning graduate development programme within Transport Scotland. She said public sector organisations can struggle to recruit already qualified staff and hopes the CIHT framework will help to develop a 'home grown' pipeline of talent for the future.



← Staff are given a structure for development
MBI - SHUTTERSTOCK

She added: "Doing your professional development on top of your job is challenging and by having more of a structure in place, it hopefully means there will be more appetite to get qualified."

CIHT Employer of the Year, Project Centre is also among the firms getting value out of the framework. Regional director Paul Chandler FCIHT said the decision to join was driven by the company's own people strategy as well as clients increasingly asking for evidence of professionally qualified staff in contract tenders.

The consultant has been running workshops and internal training sessions to encourage staff to make use of the framework.

"Getting Chartered or Incorporated is a personal decision and it is about the individual understanding the benefit to them, not being too frightened of it and then building up their knowledge and experience to the point where they can make a valid application," said Paul.

The company now has several staff signed up to the framework which Paul said is "providing vital structure to the process that they are following towards getting qualified", which would otherwise have been lacking.

For more information about professional qualifications visit: ciht.org.uk/education

Longstanding Glasgow engineer marks membership milestone

Importance of engaging in lifelong professional development is emphasised by retired civil engineer Professor Tom Anderson FCIHT, who has been a member of the Institution for 60 years.

Professor Anderson enjoyed an impressive career working across various aspects of civil engineering and contributed to a number of key highways projects in Glasgow where he worked for over 40 years.

He placed significant focus on the training of young professionals through his work as an examiner and reviewer for qualifications and as a lecturer, and was honoured with an appointment as visiting professor to the University of Paisley, now known as the University of the West of Scotland.

Tom joined Glasgow City Council in 1952 and for his entire career remained with the same department, which was taken over by Strathclyde Regional Council in 1975. "At that time the city did everything in civil engineering terms," he said. "You had to be a 'jack of all trades'."

In the early years of his career, one key project

Tom became involved in was the Glasgow inner ring road, for which he undertook studies and preliminary work.

He also led a project to convert the former St Enoch railway station into one of the city's first major off street car parks and subsequently worked on a number of multi-storey car parks. He was also responsible for getting a new parking meter scheme for the city centre up and running.

Water and sewerage became a key focus in Tom's career and he was recognised for his role leading research into safe working below ground following the death of four waste workers in a Glasgow sewer, which changed working practices and was disseminated globally.

Tom added he is "immensely proud" of his work to help with the training of young civil engineers and emphasised that attaining a degree is not "the end of the road" for professional development.

"We need to keep learning throughout life; I certainly have tried to keep myself at the forefront of what is going on," he added, noting that his longstanding membership of the Institution has been of high value in this regard.



↑ Tom Anderson

Qatar Group hosts road noise webinar

Challenges around controlling road traffic noise were explored in an online technical seminar organised by CIHT's Qatar Group this summer.

The session heard from consultant Inhabit's global lead for acoustics Gerald Stewart, who explained that around 30% of citizens are exposed to noise levels above World Health

Organization standards due to road traffic, which can have adverse health and quality of life effects.

Primary sources of traffic noise are vehicle engines and tyre to surface friction, he said, explaining that the latter is dependent on the type of road surface including its porosity and layer thickness.

As the aggregate size decreases, often the sound absorption increases. He highlighted that in the selection of pavement surfacing, engineers must give greater regard to long term performance in relation to noise.

CIHT Qatar Group is sponsored by AECOM, BG&E, DCE, Egis, Fugro, Muhel, PAF, PTV Group, Salfo, Seero and WSP.



↑ Gerald Stewart

Networking

For further event listings, visit ciht.org.uk/events

Welsh infrastructure planning

19 October, Cardiff
Featuring speakers from the Royal Town Planning Institute, law firm Burges Salmon and Pembrokeshire County Council.
waterfrontconferencecompany.com

Rail in the north of England

19 October, Leeds
Focusing on decarbonisation and strategies to help improve rail investment in the north.
peloton-events.co.uk



↑ Leeds station this summer

Electric vehicles congress

19 - 20 October, Bristol
Development of a national charging network and electrified public transport will be among the topics for discussion.
solarenergyevents.com

Workplace parking levies and clean air schemes

21 October, Nottingham
Hear about the city's experiences of a levy on workplace parking and progress with recent clean air projects around the UK.
landor.co.uk

CIHT events

Visit the Members' area at ciht.org.uk to access further details of these events and others.

Regional officers conference

21 October, 9.30am
Please register your interest in attending the event with your committee chair.

Electric and autonomous travel

21 October, 1pm - 2.00pm
Covering vehicle charging, 'naked highways' and the future of last mile deliveries.

Scotland development conference

21 - 22 October, Edinburgh
Considering growth ambitions and reducing carbon. Including speakers from Aberdeen Harbour and Glasgow Airport.
built-environment-networking.com

Highways UK

3 - 4 November, Birmingham
Looking at the future of roads policy and investment in an increasingly connected and technology enabled Britain.
terrapinn.com

Welsh transport forum

4 November, Cardiff
This black tie dinner will feature speakers from Transport for Wales, Network Rail, the Global Centre of Rail Excellence and Sustrans Cymru.
peloton-events.co.uk

Railway Industry Association annual conference

4 - 5 November, London
Featuring speeches from High Speed 2, Midlands Connect, the Grand Railway Collaboration and Transport for the North.
riagb.org.uk

'Move' mobility event

9 - 10 November, London
Showcasing the latest in disruptive technology for the transport sector, including electric scooters and Mobility as a Service.
terrapinn.com



↑ Fast charging in action BP

Smart transport conference

30 November, London
Funding of local transport, the future of commuting and efforts to reduce carbon in the sector will be explored.
conference.smarttransport.org.uk

Traffic and parking event

30 November, Manchester
Including a look at effective public engagement, the price of parking and Low Traffic Neighbourhoods.
traffic-parking.uk

Scottish roads and bridges exhibition

1 - 2 December, Glasgow
Featuring seminars addressing the topics of collaboration, technology and guidance, plus an 'innovation trail' showcasing new ideas.
road-expo.com

Cycling and walking innovations event

1 December, Manchester
Discussions around the role of policy, design and products to make active travel more attractive.
cyclingandwalking.uk



↑ Encouraging active travel

ALASTAIR LLOYD

Future of transport webinar

27 October, 1pm
Speakers from the University of Warwick, Zenic, the Centre for Connected & Autonomous Vehicles and Horiba Mira will discuss future vehicles.

Cymru Wales Awards ceremony

26 November, Llandudno

Webinars

For more, visit the Members' area at ciht.org.uk and click on 'Resources'.



↑ Going over the suspension bridge

Tamar Bridge at 60

19 October, 1pm
Celebrating the bridge linking Cornwall and Devon which opened in 1961 and looking at the maintenance challenges.
ice.org.uk

Transport innovation summit

15 - 19 November
Shared mobility, ticketing, Mobility as a Service and on demand transit will be among the topics discussed over four days of seminars.
intelligenttransportconference.com

Delivery of major infrastructure projects in the UK

25 November
Speakers will include Matthew Vickerstaff of the Infrastructure & Projects Authority.
westminsterforumprojects.co.uk

Shared transport conference

7 - 8 December
Sessions will include a focus on electric scooters, lift sharing and bicycles, plus the impact of the COP26 climate conference.
como.org.uk

Audits



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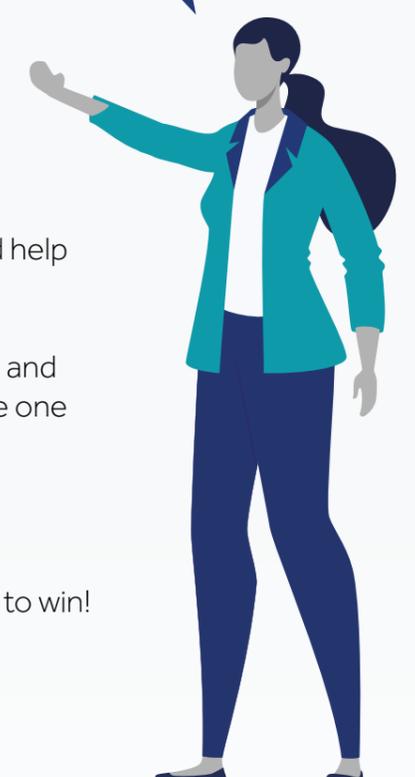



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Transport Planning Society

Delivering professional development for all Transport Planners

The Transport Planning Society (TPS) is proud to work in partnership with CIHT to deliver the Transport Planning Professional (TPP) qualification – with a chartered title now available.

TPS also delivers the Professional Development Scheme (PDS) which underpins the TPP – the TPS PDS. The PDS units are mapped directly to the technical units and the management and professional development units in the TPP. It is the only scheme approved by the TPP partnership, and successful candidates fully meet the TPP Knowledge requirements. They are also entitled to use the post nominal Incorporated Transport Planner: IncTP.

With over 400 young transport planners following the TPS PDS across 27 licensed organisations, it is well established as the industry standard, with most major consultants and a growing number of local authorities as licensees. In early 2020 an Indian PDS pilot scheme was set up with three major employers participating. Graduates should be able to complete in around 3 years and transport planning apprentices can transfer immediately to the PDS with much of their learning completed.

The apprenticeship is consistent with both PDS and TPP, and from 2022 they will be able to access the new Transport Planning Technician qualification: TPTech.

The TPS PDS has a manager in each organisation, trains mentors and provides support through meetings and webinars. TPS trained Reviewers support mentors and their trainees throughout and undertake final reviews which are identical in structure to the TPP. All this is covered by an annual licence fee.

TPS is well aware of the pressures of the current Covid situation and has moved to provide a full skills service, including reviews, on line. In addition, trainees can also access the TPS PDS Skills Retention Scheme if their employment is interrupted.

Further information on the TPS PDS, TPTech and IncTP is available at www.tps.org.uk or contact the TPS Skills Team through skills@tps.org.uk





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