



## **National Highways Podcast**

### **Episode 1 – Gender equality today for a sustainable tomorrow**

#### **Mel Clarke**

Hello and welcome to a series of podcasts that explores the future of the England's road network. Making it greener, safer, smarter and more reliable. And we'll be doing that by talking to the people that make those possibilities a reality.

My name is Mel Clarke and I'm Customer Services director Operations for National Highways. I'm also the Founder and Chairwoman of National Highways Leading Women's Network – which is pertinent as our theme for this podcast is 'Supporting Gender Equality Today, for a Sustainable Tomorrow'.

My guests for this episode are Sue Percy, CBE and Chief Executive of the Chartered Institution of Highways and Transportation.

#### **Sue Percy**

Hi Mel. Good morning, everyone.

#### **Mel Clarke**

Anne Shaw, Executive Director at Transport for West Midlands.

#### **Anne Shaw**

Good morning, Mel.

#### **Mel Clarke**

Loretta Bortey, a PHD student at Birmingham City University.

#### **Loretta Bortey**

Hello.

#### **Mel Clarke**

And Xueying Wang, a PHD student at Cambridge University.

#### **Xueying Wang**

Hello and good morning, everyone.

#### **Mel Clarke**

Thank you all for joining me here today, and it's a timely conversation as today is International Women in Engineering Day. And the theme this year is 'Inventors and Innovators.' So, Loretta, as a female research student, innovating and inventing must be very close to your heart. Do you think it's important for the engineering and transport sectors themselves to drive gender equality?

### **Loretta Bortey**

Well, thank you, Mel, for this question and thank you for having me here today. First, I'd like to say that, yes, it's very significant for the engineering and transport sector to drive gender equality. First of all, for representation purposes. You know, for every sector, we have definitely every human being, we have two people, that's for sexes, we have male and female, and for gender we have a lot of gender representations. But for there to be equal representation and for people to feel a sense of belonging, it's very pertinent that socially every gender must be given the opportunity to be included in a very important sector, such as engineering. The engineering and transport sector actually is one of the biggest sectors that drives the GDP of every economy, therefore having every gender to be part of that sector would help in economic empowerment of each individual and their livelihoods because everyone strives to have a better life, a better future. Something they could aspire to and be proud of. So if they feel a sense of belonging, a sense of representation, then it would give other people the ability to know that it is possible for them to also involve themselves in engineering. Currently we have only 14.5 percent of women as engineers in the UK, according to the Women in Engineering survey, done in 2021. It showed that only 14 percent of engineers are women. And this is quite, very little compared to the huge percentage of men in engineering. And this could be because maybe there is not lots of awareness when it comes to the ability of women to also be part of this sector. And it seems for every woman that, even with the data, a girl from the ages of 11 to 14, only about 45% have considered a career in engineering, and when it gets higher, from 18 to 25, only about 18% would like to consider a career in engineering. This shows a really drastic drop as they go on, and what could be the factor for this, what could be the cause for this? Could it be that they do not feel that they have the ability to do it or do they feel they don't have a sense of belonging in that sector? Do they feel that it's a man's world, therefore they cannot also have an impact there, and they choose a road that they feel is more possible, more feasible. So for the engineering and transport sector themselves to drive this gender equality, to institute programmes to have this form of equality, it could help girls also know that they have a sense of representation they could see, because what you see is what you believe. So when they see a lot of people who are like themselves there, then they would believe that it is also possible to have that form of career for themselves. And also it's very pertinent in self actualisation. Imagine a lady or a girl child who wants to be an engineer, not knowing what route to pass, not knowing if it is actually possible for them to have that form of career in engineering, then their self actualisation would not be realised, because they do not know or do not have the right information to delve into that career. So in the end, it's that gap that needs to be filled, that gap of awareness, that gap of opportunities for all gender to actively participate in this sector. And this could be done by instituting different gender inclusion programmes, diversity and inclusion programmes. That could help people to know that they could also feel a sense of belonging in whatever career path they choose in the engineering and transport sector. Thank you.

### **Mel Clarke**

Anne, I'm sure that resonates with you. What made you choose a role in this field and in your time as a senior leader at Transport for West Midlands, have you seen a difference in the way that women can lead, to tackle the challenges the industry is facing today?

## **Anne Shaw**

Yes certainly what Loretta's just said absolutely does resonate with me. Like you say, 30 years of experience now when I was at school, I had no idea what I wanted to do and really didn't have any idea that engineering could be a career that I could have. To be honest, I actually fell into it. When I finished university, I ended up working for a local authority as a drainage engineer actually because my background is in environmental science. And obviously thinking about what I enjoyed at school was more to do with the science subjects and I was probably one of four or five girls in my school that did the three sciences, and then went on to do A Levels and then went on to do studies in biology. I'm not quite sure how that relates to highways but certainly it's helped me with my career as I've gone forward in that as well. And I think when I first started and I was the only woman in the room working on many projects, working my way up from being a drainage technician, drainage engineer, and then into highways, working with a local authority, and mainly working with developers in terms of constructing new highways and making access to developments work as part of that as well, and then trying to think about well how do I make sure that I can continue at my education around this. I started to study highways and traffic engineering which I found fascinating and then went on to study sort of leadership courses as well so how can I use my scientific background in that space and then ended up ultimately leading a whole team of engineers as well. And it certainly changed over that time from going from being the only woman in the room to obviously there's quite a few of us now as well, but also recognising that working within this sector, there are many different facets, you need many different kinds of skills to work, to build new transport infrastructure. You need project managers, you need accountants, you need people who understand procurement, and you need people who understand that sort of world of engineering as well. So we can attract many more different people into the work that we're doing and I'm definitely seeing that difference now. But I would say that there is still quite a lot to be done. And more recently, I've been working with the ministers on Violence Against Women and Girls. And then thinking about what is it that we can do to make our transport infrastructure safer for women and girls to do that because it actually, a little bit like what Loretta was saying, having transport infrastructure that doesn't feel safe, it actually prevents women from taking up opportunities if they're worried about traveling and being safe while traveling as well. And of course we want to make sure that people can take on any career and transport plays a big role in that. But two of the things that came out of that was around our data and information, the way that we collect information about our transport infrastructure and how our transport infrastructure is used does not give us any sort of granular information about women in particular. So what are those barriers for women when moving around? And then also, again, the other side of it was the importance of the design processes as well. And very few women involved in the design process. So by default, the designs don't necessarily reflect what would make it feel safer for women traveling around the network as well. So absolutely there is still an awful lot more work to be done. And by having more women on our engineering workforce are those technical skills that are coming in, it will help us to sort of make sure that we're designing infrastructure that is helping people to move around, making it feel safer for everybody that is using it as well. So I think that there is quite a lot more for us to do to make sure that we are well-represented in the field. And of course it's people like me who need to make sure we can advocate what those careers are, particular to our younger population as well.

And obviously we do quite a bit of work in schools locally, trying to get people to sort of think about if they're taking those STEM subjects. What kind of career could that resonate for them in the future? And just to try and bring home the message that it's quite a diverse – transport in itself and highways – it's quite a diverse career as well and some really interesting projects that people could work on. So the more we can do to encourage more women to be engineers and all of the other skills that wrap around that, for us to sort of develop and deliver and maintain our transport infrastructure, is going to be really worthwhile.

### **Mel Clarke**

So Sue, you've been with the Chartered Institution of Highways and Transportation (CIHT) for more than 10 years now. What motivated you to that role and what keeps you doing the work you do?

### **Sue Percy**

It's a great question Mel and I was sort of reflecting on this the other day. In terms of my career, I've always been working in this environment. So something that's always drawn me to actually building things, not always in transport, but certainly in planning and in infrastructure. And when I applied to the CIHT for the chief executive role, I was thinking, you know, what interests me. The thing that interests me, and this is now over ten years ago, is that transport is at the core of so many things. It's the glue that actually brings our infrastructure-built environment together. It means that we as people, goods, etc, move from A to B. We can go and visit our friends. We can get to work, we can have our goods delivered to us – so it's absolutely fundamental. And for me, it's around being able to make a difference to actually make transport better, better for everybody, so serving everybody's needs and also delivering public benefits. So that was a huge motivation for why I applied for the role that I did. And when I arrived at the Chartered Institution of Highways and Transportation, I went to many meetings and I suddenly realised I was really the only woman in most of the meetings. I kept thinking: well, why is this? This is such a brilliant career, this is such a brilliant profession. So, why am I the only woman in the room? And clearly, it dawned on me that this was a sector of profession that was very male dominated, very white as well. And I thought: well, crikey this is something you need to do something about. So I like a challenge, didn't realise quite how big the challenge was going to be, but sort of really started to embrace that and thinking: actually, I want to do something about this, I want to sort of change this so that we have much better representation from women, for example, in transport. So some of the things that Loretta and Anne have already mentioned around representation about role models, for example, about being and bringing people in because it's such a fantastic career, were things that sort of motivated me to think we can make a difference. And making a difference meant that now, in terms of our new members coming in to our institution, for women it's now moved up to 23 per cent. It was much lower than that when, you know, ten years ago. We've still got a long way to go, we still need to do an awful lot more, but actually things are changing and that's for the better, and the sector is recognising the benefits of having a much more diverse and inclusive environment in which to work. So things like designing our infrastructure, our highways and our transport by women and men is so important. And Anne has actually touched on that, and it means that actually we have transport and highways that are much more meaningful for everybody and are usable by everybody, and if you look at things just like active travel and making that much more inclusive for

everybody. So the thing that keeps on motivating me is that actually this is so important, you can't leave it to one side, you must get in, you must roll your sleeves up. And given the role that I have as a Chief Executive, it means that I can not only try and be a role model, but also I can influence, I can sort of shape things as well. And I've been very lucky that my board, my leadership board, has been really supportive of this so that once I started on this agenda, we brought in not only a toolkit for the profession, we brought in values in terms of how we operate as an institution, we have now our values including inclusivity. It also means that when we have a new strategy that we launched at the beginning of the year, Equality, Diversity and Inclusion (EDI) is one of three key themes that run across everything that we do. So we're trying to mainstream it into all of our activity so that it's not seen as just something that is tacked on in perhaps an HR function, that it's actually something across the whole of the sector. So there's still a lot more to do, there is progress, and there's pockets of brilliant practice but actually when you look at some of the matrix, and Loretta touched on that in terms of statistics and engineering, we still have a long way to go. I think for me, that's one of the motivations to see if we can actually accelerate our progress over the next few years.

### **Mel Clarke**

And so what other approaches have been driven or shaped by your experiences as a woman in that industry?

### **Sue Percy**

As an organisation, the thing that's changed and I think as engineers, we get fixated on matrix, so numbers and having targets, being able to measure them, monitor them, report on them, is absolutely critical. But the thing that's really going to shift the dial is behaviours and culture, and that's where I think we really need to concentrate our efforts as well. So really changing the culture of the sector, of the organisations that we work in, so that our behaviours, the way that we go about things, also represent a more inclusive and diverse organisation. Because we as engineers love numbers, love statistics, but some of this is that intangible feeling of belonging. I think Loretta, you were starting to talk about that and that's where I think we need to focus our attention as well. So there's plenty of things that we have done, we do, and we can do, but I think that culture and behaviour change is absolutely critical. I don't want us to lose sight of that.

### **Mel Clarke**

So Xueying, you're currently finishing your PhD at Cambridge University and have been viewing the industry through that lens. From your experiences so far, what more can companies and industry bodies do to empower women so that they can step into those leadership roles?

### **Xueying Wang**

Thanks for the question. As Mel introduced, I'm a PhD candidate at University of Cambridge and as a student, I have also been spending my time as a scholar of the National Academy of Engineering in the US. And during my studies, I have been focusing on researching the future infrastructures and environment, which my research project collaborates with National Highways, and it's a perfect combination of the cross-disciplinary skillset in my civil structure engineering and material sciences. As a student, I have been going to industry events, university seminars,

and workshops for preparing myself to get ready to be an infrastructure professional that can make the most complex emergent challenges and contribute emphatically to better infrastructure decision making, not only in the UK but, as a person born and raised in mainland China, also from a global perspective. When going to events, I find most of the time there are men in engineering. I still remember when I was invited to attend the Géotechnique Lecture 2021, delivered by my supervisor, when I stepped into the room, I find that I am the only woman in the room, which is quite surprising as a student of my supervisor, not as someone from the industry. Moreover, when I googled 'famous female' and you race through the automatic suggestion results, the job title of them are usually singers, actors, artists, etc. The only word that is missing is engineer. So I think it would be definitely helpful to have some access to role models just like Mel, Sue, and Anne. And also if I could see more people, female people, as leadership, successful leaders in the engineering industry from the past before me, it would make it an easier journey for me. And therefore, I think it's really important for both the universities, educational institutions, companies and industry bodies to create the right environment for women, to take a chance on women in leadership positions and make sure that they are well-represented on the board. Allow them to speak on event panels and develop their own professional networks, and moreover to give them every opportunity they need in order to succeed, and in turn, they can help other women to succeed as well. So that's my answer to the question, thank you very much.

### **Mel Clarke**

And finally, as a question to the whole panel to bring our discussion today to a close, what's your advice for any woman listening today who aspire to be a leader in the industry? So that question to Loretta first.

### **Loretta Bortey**

Well I've always heard that when it comes to engineering or gender equality, it's not really about men vs women, but rather women with men or men with women. It's not even about having a 50-50 representation, it's just about having every woman who wants or has the aspiration of being an engineer or being in any career, have that opportunity to make that opportunity to make that dream a reality. So I'd like to advise any woman or girl who will be listening to me today that it's not just theoretical to say we want equality – it takes action, and that action should come from us. We should be able to delve into whatever we want to do and have our aspirations actualised. We want to see girls having that opportunity to be represented in the engineering sector and have role models that they can look up to and know that they are represented fairly and they have the ability to aspire to be anything they want to be. So my advice to any girl is that there's nothing impossible especially when it comes to engineering. There's absolutely no difficulty when it comes to anything concerning gender. So far as a man can do it, a woman can do it and do it better. That's what I'll say about it thank you.

### **Mel Clarke**

Thanks Loretta. And Anne?

**Anne Shaw**

So if I was going to give myself advice 30 years ago, I think it's believe in yourself, everything is possible and obviously you still need to work hard to achieve that as well, so keep going. The other thing is also to find your advocates, your supporters, both male and female. I've had a lot of people who've inspired me and also supported me over my career. Some really great men as well who've seen that ability and helped me to push myself as well. I think the other thing is don't be afraid if you don't understand something, don't be afraid to ask questions. It's not a mark of whether or not you know better than other people. Actually, it's how you learn, so asking questions is all part of that. And then I was just listening to what Sue was saying about cultures and behaviours as well because actually this is something even now in my career, I think there is still some issues with some of the cultures and behaviours of other organisations that we work with. I think I've been very fortunate in the organisations that I've worked for in the public sector that actually we've been doing this for some time. But there are other organisations now where it's not so the case. So I think being able to challenge in a positive way, challenge those cultures and behaviours for the people you work and partner with and call it out to make sure that not just you, but other people who are following behind you can be comfortable where they're working and the people that they're working with as well.

**Mel Clarke**

Thank you, Anne. And Sue?

**Sue Percy**

From my experience and from speaking to a lot of women who work in this sector, I think one of the key things is to be your authentic self. I think that's so important, bring yourself to the table and don't be apologetic about it, champion it, celebrate it because diversity, whether it's gender diversity or anything else, you bring lots of different things to the table in terms of the way we think, the way we approach things. So be your authentic self. Equally, make sure you've got allies around you who will also support you, lift you up when you get knocked down because we all get knocked down. So you need people to really lift you up as well. To also champion others, I think it's so important that I have come across in my career when sometimes women have made it to the top and it's been such an effort that they've drawn the drawbridge up a little bit. Perhaps not intentionally but one of the roles that all of us can do is really champion others and bring people along with us as well. And equally, I would say, celebrate our success, embrace the fantastic things that we do and put yourself forward. Don't let others get in there, get your elbows out and make a little bit of room for yourself and put yourself forward. And the other thing I think we all need, whether you're man or woman, you need resilience in our sector as well. So have some resilience and confidence and put yourself forward and just go for it.

**Mel Clarke**

Thank you, Sue. And finally, Xueying?

**Xueying Wang**

I would say that becoming a leader as a woman can be hard, so be prepared that people will not give you the same trust they give males. And while this is the reality of our time but even though the road to success is hard, it will be worth it. So I

encourage all the listeners, the students who are similar to me, ready to step into the industry, to listen, learn and network to gain knowledge and experience. Just be ourselves, be kind, be confident, let's help each other and become a better leader for everyone.

**Mel Clarke**

Thank you Xueying, inspiring words indeed. I'd like to take the opportunity to thank all of our panellists today: Sue Percy, Anne Shaw, Loretta Bortey, and Xueying Wang. And thank you too for listening to this episode. Until next time, goodbye.