

INSPIRING THE FUTURE-
ATTRACTING YOUNG PEOPLE TO
THE HIGHWAYS AND TRANSPORT
TECHNOLOGY SECTOR

Leanna Dinnegan

INSPIRING THE FUTURE-

Attracting YOUNG PEOPLE TO THE HIGHWAYS AND TRANSPORT TECHNOLOGY SECTOR AWARD



Department
for Transport

Issues impacting careers within Highways and Transport

Based on a research project conducted by the CIHT (Chartered Institution of Highways and Transportation) some of the below issues were raised in relation to why some students are not selecting transport related degrees:

- **Lack of encouragement from teachers/parents**
- **Low number of visible role models**
- **Lack of diverse job roles**
- **Predominately white males**

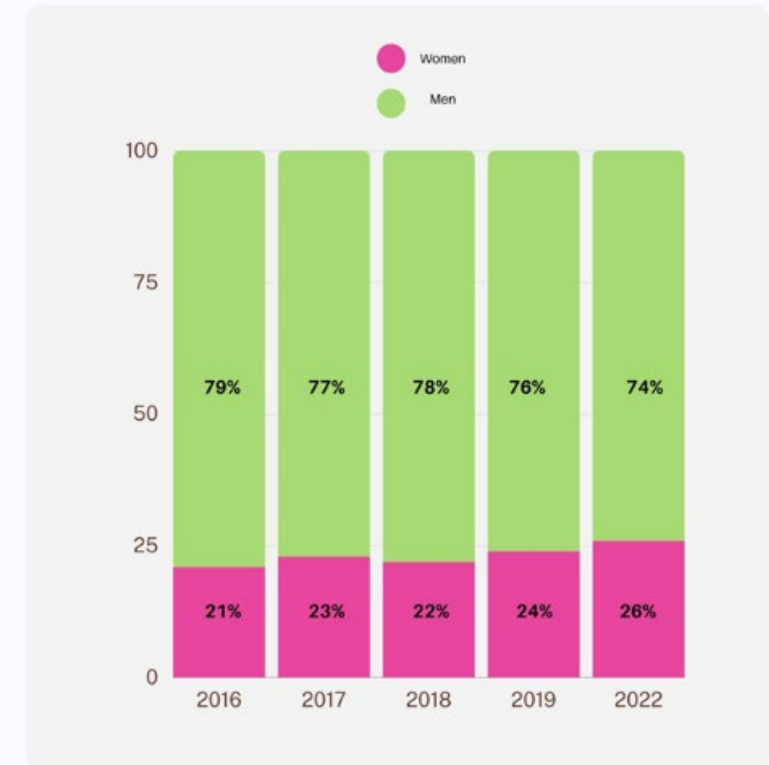
Based on an additional survey conducted by The institute of Engineering and Technology, 65% of teachers expressed they think female role models is the best way to encourage more girls to consider STEM career paths.

Based on this statistical data, I believe the best approach to inspiring the future generation is outreach workshops with schools and within local communities.

Women in STEM workforce

2016 – 802,848 – 21%
2017 – 864,278 – 23%
2018 – 908,318 – 22%
2019 – 1,019,400 – 24%

Latest update: 2022/23: 1,137,200 – 26%



Careers Fair- Apprenticeship Opportunities and Personal Experience

One of the solutions, is to attend Careers Fairs and set up a stall and even deliver a speech with a personal experience of the highways and transport sector whilst explaining all the available opportunities. These career Fairs are typically targeted at the age group of 16+ and mainly those looking for apprenticeships. This is how I personally found out about the engineering apprenticeship that I started myself with Islington Council.

In the images shown, I delivered a speech to the attendees about my experience as an Apprentice Engineer about all the opportunities available and how much I have learned.

This speech alone combined with the additional information at our stall, we **received 11 apprenticeship applications**, all from individuals that attended this fair.

This highlighted the effectiveness of this method of outreach, my team then successfully hired three of the applicants.

The promotion of these events is key, to ensure the right target audience is aware of the event. This poster was placed in **colleges, job centres, local youth clubs, libraries** and was shared **online via social media platforms**:

You Have Options!

Aspire Opportunities Fair

for 16-18s in Islington

Wednesday 12 September 1-4pm
Lift Youth Hub
45 White Lion St
N1 9PW

More information:
progress@islington.gov.uk

GIF

Aspire 2018
Get on track for a great career

ISLINGTON



University Outreach- Work Placements and Work Experience Opportunities

This second solution, was a stall at a local university which was an engagement event with the students to promote available careers within the highways and transport industry, we discussed available work placements whilst highlighting my own personal experience as an apprentice and female within the industry.

This was a very effective method of speaking to students currently studying various degrees, to speak to them specifically about highways and transport and the varying pathways into the industry. A great way to attract the students to our stall was some helpful freebies, such as pencils and rulers!

We had **26 students register their interest for a 4-week work experience** opportunity which included shadowing and seeing some of the projects we deliver, it was also an opportunity for us to hear some of the innovative ideas from the students.

We then set up this stall again the following year and had an astounding **51 students register their interest for a 4-week work experience**. This proves that with consistent presence at these events, the interest from students increases.



Secondary School Highways and Transport Workshop

The third solution and the one I found to be the most rewarding, was the Highways and Transport workshop I delivered to a local secondary school, with 35 year Nine Students. **The workshop involved:**

- **A presentation** on what it means to be involved in the highways and transport sector and the different projects.
- **Two site visits** for the students to understand elements of highways engineering such as planting, cycle lanes, lighting features and public realm enhancement.
- **A treasure hunt** to identify hidden engineering elements on the public highway, such as lighting columns, gullies and utilities.
- **A task of redesigning the space** outside their school, considering The Healthy Street Indicators and ways we can use highways design to promote and improve active transport, this final task gave them the chance to experience what it means to work on these type of projects.

The idea for this workshop was to keep it fun and engaging, as the students didn't understand much about the industry at first. We wanted to highlight all the interesting elements and how important our work is for the future of climate change and transport infrastructure.



Secondary School Highways and Transport Workshop

Feedback Video:



Case Study From Secondary School Workshop



Listening

Students actively listened to the facilitators who guided them through traffic improvement presentations, measuring and counting tasks and a treasure hunt!



Aiming High

The visit boosted the students' enthusiasm around careers in Engineering, Urban Planning & Design.



Speaking

Students showcased their creative designs for healthier, safer streets around their school to peers, volunteers, and guest engineers.

As shown in the analysis from the student feedback forms below, **98%** of the students enjoyed the activity and **90%** of them learned something new about the Built Environment. A further **85%** stated that the workshop made them feel more prepared for the world of work.

This is clear evidence of how effective this STEM workshop was, it was fun and enjoyable whilst being educational whilst also inspiring the future generation.

						% Positive (Agree or Strongly Agree)
I have enjoyed today's activity						98%
The activity taught me something new about the Built Environment						90%
I have improved my listening skills today						55%
I have a better understanding of the workplace						85%
I feel more prepared for the world of work						55%
					Average	88%

Key stages of Outreach



Secondary School-

Around the stage of choosing GCSE's (Year 8 onwards)



Careers Fair-

Ages 16+ not currently in higher education seeking apprenticeship opportunities



University Students-

To highlight the various career pathways and arrange work placements and graduate opportunities



HATT (Highways and Transport Technology) In a Box- Workshop



HATT in a Box Workshop

If possible, the workshop supporting items such as: pens, paper, print outs, measuring tools etc should be brought to the workshop in a box.

First Section of the workshop- Introduction Presentation and Interactive Quiz:

Objective: This first section will serve as an icebreaker and provide an opportunity to get to know the students whilst introducing them to the industry and various projects.

Presentation:

- What is the highways and transport sector?
- Key areas of focus (road design, traffic management, urban planning, sustainability, inclusive design, improving public transport and active transport).
- Overview of current projects in the sector (local and global).
- Personal aspect from the industry professional delivering the session (their background and how they entered the industry)

Interactive Quiz:

- Engage students with a few questions on their thoughts about the highways and transport sector
- Ways they use the public highway and public transport

(Via apps such as Mentimeter or Kahoots)

The interactive quiz works as an icebreaker.

Second Section of the workshop- Site Visit/ Walkthrough of Project

Objective: Familiarise students with physical highways and transport elements such as cycle lanes, lighting, planting and public realm enhancements.

Walkthrough: Take the students on a guided walk through and site visit of a nearby project site with a mix of these features. (Should be done locally around the school)

- Cycle lanes: Importance of design, materials used, and safety considerations.
- Lighting: Different types of street lighting and their impact on safety and aesthetics.
- Public realm enhancements (planting, benches, etc.): How landscaping and street furniture contribute to urban life and sustainability.

Engage Students: Ask students to identify the features they find most interesting and how they would change or enhance them.

Additional element: Bring measuring wheels/ clipboards for the students to conduct site audits. This allows them to experience what it's like to be an industry professional.



Third Section of the Workshop- Redesigning the Space Outside Their School

Objective: Let students apply what they've learned by designing a space that promotes healthy, active transport using real-world principles.

The final section of the Workshop is for the students to implement all the various elements they have learned throughout the day. This will allow them to think like an industry professional and provide insight into the types of projects they would be involved in.

Place the students into small groups, they will then be tasked with redesigning the area outside their school, focusing on active transport (walking, cycling, etc.) and various elements of the Highways and Transport Sector.

Facilitator Guidance: As they design, encourage them to consider safety, aesthetics, inclusivity, and environmental impact.

Presentations: Each group will then briefly present their design to the class, explaining how it aligns with the Healthy Streets principles.

Materials Provided: Paper, markers, rulers, stickers for key features (cycle lanes, benches, trees, planting)

Final Section- Group Reflection & Wrap-up

Objective: Reflect on the day's activities and reinforce key takeaways about the importance of highways and transport.

- Open Forum Discussion: What did you learn today?
- Key Insights: Summarise the workshop's core messages- highways and transports impact on daily life, the importance of designing for active transport, and how students can get involved in such projects and career pathways.
- Feedback: Collect feedback from students using a short survey to improve future workshops.



HATT in a Box- How to Inspire the Future

The HATT in a Box Workshop Summarised:

- **Presentation and Interactive Quiz-** This helps to break the ice and for the industry professionals delivering the workshop to introduce themselves and their day-to-day job role and provide some insight into the industry and speak about their personal journey.
- **Site Visit and Project Walk-Through-** This element really highlights the outcome of projects and the important aspects such as: planting, cycle lanes, lighting features, public realm enhancement and how we can promote active travel and improve transport infrastructure through design.
- **Redesigning a space-** This is the part of the workshop which really brings together all the various elements they have learned throughout the day. This is a task that allows them to experience what it would be like to work in this industry. During my own experience of delivering this workshop, this is the part that the students enjoyed the most. Through allowing them to take ownership of their design, this started many conversations with the students about working in this industry and considering a career.

Future virtual resource box:

- Three quizzes suitable for each age group
- Design guides on key elements, including: Lighting - nighttime economy / zebra crossing - road safety / rain gardens - SUDs / Cycle Lanes - Wheeling, walking and cycling / cameras - data collection. Which will encompass the inclusive design approach to Highways and Transport Technology.
- Organizing a walkabout guide and information on liaising with schools on Risk Assessments when leaving the school premises.
- PowerPoint guide for the initial presentation.
- How to select a HATT champion (based on the final part of the workshop)
- Work experience workbook to link the workshop to your workplace and continue the connection and opportunity.

The creation of the HATT in a Box App and online forum will create a community that will share developed resources, latest news, support on FAQ's and advice on public speaking etc.

-DBS may be required to access the resource and allow participation into schools.