

Thinking Outside the Box

Ben Swan, Head of Design & Technology at St. Mary's College

D&T has evolved beyond simply remaking physical products in a world already filled with 'stuff.' The focus has shifted towards critical problem-solving, helping students develop the innovative thinking needed to tackle real-world challenges. At St Mary's College, students are using D&T to shape their futures, from engineering to sustainable design.



Emily Jones with Bus Stop Prototype



Upper Sixth Form Cohort

At St Mary's College in Crosby, Design & Technology is all about giving students real-world challenges and letting them find their own solutions. This year, one of our Upper Sixth students, Emily Jones, took that approach to the next level. Her bus shelter design for Mersey Travel won her the WJEC CBAC Excellence Award for Outstanding Pupil: Age 16-18 at the Design & Technology Association Excellence Awards.

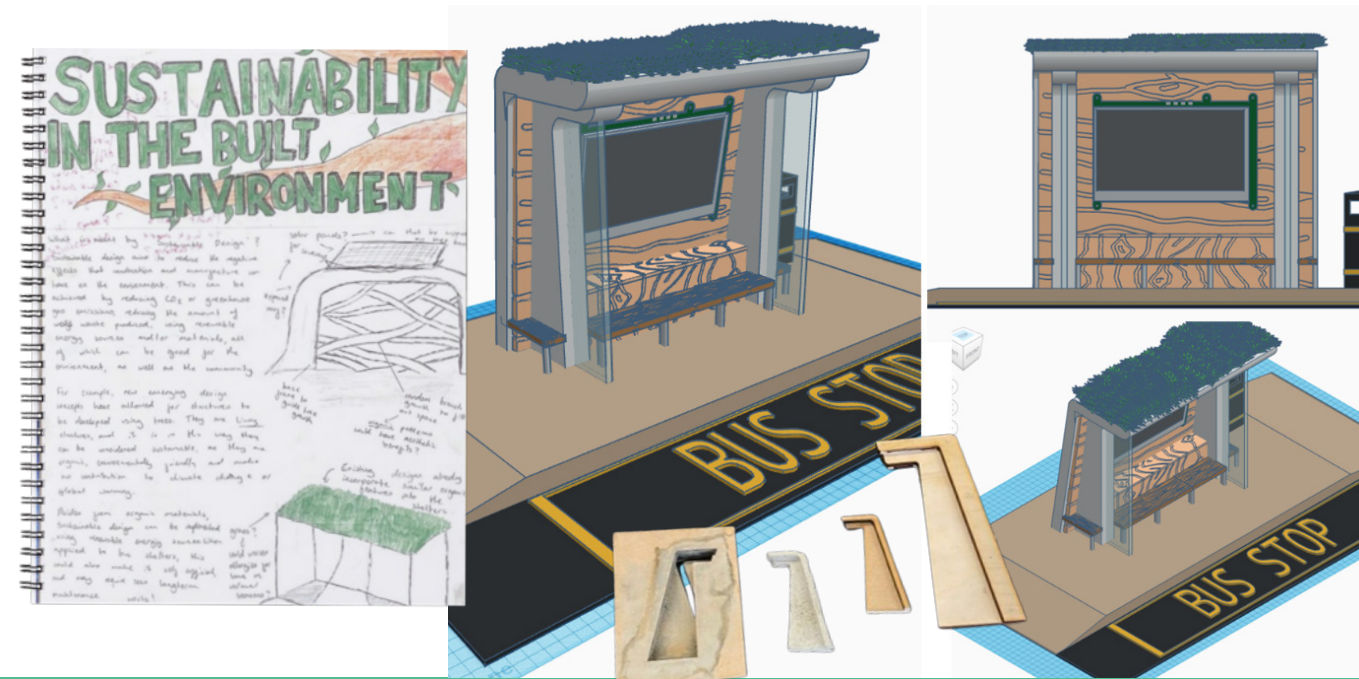
Bus Shelter with a Difference

The assignment was to design a bus shelter for Mersey Travel. The interpretation, however, was entirely up to the students. Emily explains, "I wanted to create something that wasn't just a shelter but a space that felt connected to the people using it, I focused on the idea of community and sustainability."

One of the key features of Emily's design was a digital screen where passengers could upload photos via a QR code, creating a constantly updating collage of images from people in the local area. The idea was to make the shelter feel like part of the community, not just another structure on the street.

Practicality and Sustainability

Environmental impact was a major consideration in the project. Emily initially explored fully sustainable materials, but real-world constraints meant she had to balance durability with eco-friendly



choices. Her final design included concrete and metal for strength, but with added wooden elements and a roof covered in plants to help offset emissions from buses. "Public transport already helps reduce individual carbon footprints, but I wanted to take it further," she explained. "The plants on the roof don't just look good—they help improve air quality and provide a renewable energy source for the shelter's power needs."

Challenges in the Workshop

Like any design project, Emily's shelter didn't come together without setbacks. She quickly found that working with concrete was more difficult than expected. "There were at least seven test runs where the concrete cracked or didn't set properly," she said. "I had to rethink the structure, and in the end, I reinforced it with wooden beams inside the concrete to give it more stability. That wasn't part of my original plan, but it turned out to be a crucial fix."

This problem-solving process gave Emily valuable experience in material testing and real-world construction challenges - skills that will be useful in her future career.

"I enjoy both the drawing and the making side of things, and I love seeing ideas come to life, this project helped me realise that I want to go into architecture or engineering. I haven't decided yet if I'll go to university or do an apprenticeship, but I know the skills I've developed in D&T will help me get there." - Emily Jones

Why Projects Like This Matter in D&T

Emily's bus shelter isn't just a great student project but an example of how D&T has changed. The subject is no longer just about making things; it's about solving problems, thinking critically, and applying knowledge from different subjects. At St Mary's, we make sure our students tackle real-world issues so they develop the skills they'll actually use in their careers. Whether that's in architecture, engineering, product design,

or another field, D&T gives them a foundation in practical, hands-on learning that they can build on in the future.

More than ever, students need skills that are useful in the real world. We're seeing students produce work that directly connects to global issues, and they're excited about the possibilities this opens up for their careers.

Looking Ahead

Emily's bus shelter project is a brilliant example of what happens when students are given the freedom to explore ideas, take creative risks, and put their skills to the test. With the right support, young people can tackle real-world problems in thoughtful and innovative ways. D&T teachers everywhere are seeing the subject evolve, and it's an exciting time to be part of it.

For students like Emily, that means leaving school with a portfolio of work that's a showcase of their ability to design, problem-solve, and think ahead. And as D&T continues to grow, so too will the opportunities for the next generation of designers, engineers, and creative thinkers.



Watch to see more from Emily about winning the WJEC CBAC Excellence Award for Outstanding Pupil: Age 16-18. tinyurl.com/mrup8nxh



D&T Association CEO Tony Ryan, Teacher Ben Swan, Winner Emily Jones and Sponsors WJEC CBAC