Creating a Greener London

Project Case Study: London South East Colleges

The Creating a Greener London – Sustainable Construction Skills project ran from March 2023 to July 2025. It provided resources and support to two London colleges to pilot curriculum and careers innovation for students on Level 2 (L2) construction courses. The project aimed to enhance students' understanding of the value of green skills and technology for construction careers, and to provide them with basic skills and knowledge in preparation for higher-level learning that leads to high-skilled, high-paid jobs. London South East Colleges (LSEC) were one of the colleges participating in the pilot.

To find out more about the project please visit - https://www.aoc.co.uk/corporate-services/projects/creating-a-greener-london-sustainable-construction-skills.

Starting points

While green skills were an increasingly important element of LSEC's construction offer, the focus for innovation tended to be on Level 3 courses. This meant staff were keeping abreast of developments, but their application at L2 was ad hoc. At the beginning of the project, LSEC made arrangements to ensure integration of green skills on L2 construction courses would be more systematic.

At a strategic level LSEC organised employer panels to understand the latest industry developments and provide a steer for curriculum change. LSEC also established bi-

weekly meetings with STEM directors on the delivery of green skills to ensure a sustained focus, including at L2. LSEC also engaged with employers to enhance the colleges work experience offer to L2 students, as well as to provide talks and masterclasses.
At curriculum level, LSEC included a standing item on the team meeting agenda and used a skills matrix to identify aspects of their courses where more green skills content could be covered. This was accompanied by specially commissioned CPD.

Curriculum Innovation

LSEC drew on guidance from our employer panels and used the skills matrix to help us plan specific curriculum innovations. These covered, for example, the inclusion of:

- Retrofit across relevant construction courses
- Sustainability for electrical installation courses, and
- Carbon reporting within plumbing courses for plumbing students.

These additional elements were run as micro-credential courses, initially by external experts, and were open for students and staff to attend.
Staff participation was important, as it enabled them not only to acquire new knowledge themselves, but also to see how they might introduce micro-credentials into their own courses. This in turn, has given the College a model to encourage adaptation in other areas of the curriculum.
Monitoring of student feedback was important in helping us understand their experience of green skills content. A review of student survey responses at the end of Year One showed that some aspects of curriculum innovations had reached some students more successfully than others. While the majority of students reported learning something about green skills on their course, a quarter reported this was not the case.
LSEC used this information to pinpoint where more effort was required for Year Two. LSEC also encouraged greater collaboration between the careers and curriculum teams to further identify where areas of the green agenda could fit in.

Enhancing the careers experience

Sharpening students' appetite for the green content in their courses was an important element of the project, and so LSEC made changes to the careers, information, advice, and guidance (CIAG). In doing so, LSEC paid particular attention to Gatsby Benchmarks: 1 (A stable careers programme), 3 (Addressing the needs of each pupil), and 4 (Linking curriculum learning to careers). LSEC's CIAG changes included:

- Introducing a Green Skills Induction Week to highlight the connections between climate change, and related innovations and opportunities in construction
- Embedding green concepts early in the course
- Structured guidance and early induction sessions that outline key content areas, progression opportunities, and how sustainability is integrated into learning
- Guest speakers to talk to students about their work in the sector.

LSEC also arranged for a number of external specialists to present to the students. By using the 'immersive classrooms' facility, LSEC were also able to broadcast some of these to students in other London colleges.

The talks were also an opportunity to shift stereotypes of who could work in construction. In one case, for example, a geotechnical engineer, Helayna Jenkins, spoke about opportunities in green engineering, as well as the importance of inclusivity, and her experiences of being a woman in the construction industry. Helayna spoke about the importance of developments such as female and maternity personal protective equipment, as well as period product provision.
LSEC also ran masterclasses to deepen students' understanding of specific green skills. L2 Carpentry and Bricklaying students, for example, attended 'introduction to retrofit' sessions.
In the area of work experience, our industry partners were responsive in offering and adapting placements, so they had immersive, green skills and technology content.

Developing networks to strengthen workforce planning

Taking AoC's steer, LSEC have focused on strengthening our partnerships with businesses. LSEC have found doors are open., Given the current demand for a workforce better prepared to engage with green technologies. Key among our partners have been Keir Construction, Supply Chain Sustainability School, and the Energy Efficiency Association. Between them, these organisations have provided complementary support for LSEC's enhanced programme:

- Keir have provided specialists to engage with our students and staff
- Energy Efficiency Association has been pivotal in both marketing and developing new courses focused on energy efficiency. This collaboration has not only helped in expanding our course offerings but also provided crucial support in staffing and curriculum development, ensuring our programs remain relevant and impactful.
- Supply Chain Sustainability School designed and ran our initial micro-credentials courses.

Through regular participation at meetings convened by the London Mayor's Construction Academy, LSEC have been able to discuss experience of curriculum innovation, and of addressing challenges. This collaboration has been instrumental in refining LSEC's curriculum to meet industry demands effectively.

Achievements

Student survey responses at the end of the project indicated a significant impact on their learning experience. Almost all students (95%) reported learning 'something' or 'a lot' about green skills and technology during their course. LSEC also noticed a shift in students' career intentions as a result. At the end of the first year of the project, 15% were considering solar panel installation as a career, and 1% retrofit. At the end of the second year, these figures had risen to 18% and 6% respectively. In addition, 12% of students in both years were considering work in heat pump installation, and 9% in insulation.
The project has led to a momentum for further developments in green skills and technology in the curriculum. LSEC staff are enthusiastic to engage more with the green agenda. They have seen for example, the benefit of using the new retrofit centre with L2 students, as this is where the retrofit micro-credential was delivered and are looking to deliver micro-credentials themselves. Staff have also begun seeking out green skills events on their own initiative. This has included a visit to London Build 2024, which the L2 Electrical Installation and Brickwork students attended.

Lessons learned and what the future holds

While LSEC appreciated the value of green skills and technology and the importance of introducing these earlier in the curriculum at Level 2, the process was not without its challenges.

The first was the need to create a clear picture of what the jobs of the future would be, so the focus on green skills would be relevant to staff and students. This is where engagement with employers was so important, and ensuring they had frequent and direct contact with students and staff, through a variety of formats.

Our second challenge was to extend the focus for green skills from L3, where it had more applications as far as staff were concerned, to L2. Here, the provision of micro-credentials by an external partner and staff's participation in these was key. They were both engaging and instructive for staff. This complemented the other CPD in green skills and technology that staff attended. LSEC also involved careers advisers in insight days to raise awareness in other schools and colleges of the relevance of green skills at L2, as a pathway into the jobs of the future.

It also helped that staff had sight of the changes in knowledge and career aspirations among their students, and over time. Here LSEC found the end of year surveys with questions focusing on these areas were very helpful.

Finally, collaboration has been an important element of the process. LSEC worked closely with Waltham Forest College to consider different ways of adapting the curriculum. The joint events held for students at both colleges also helped raise their confidence to talk about green skills. LSEC promoted targeted collaboration internally too, between our careers team and curriculum staff. This helped the teams develop a common understanding of how jobs were changing, and what green skills meant for students' career choices.

Engaging in the project has given us an understanding of how industry partnerships can better inform curriculum design, and LSEC will build on the relationships developed during the project to achieve this. This will include ensuring LSEC integrate green skills modules across all construction and engineering courses.

Informing the sector

In order to make sure others benefitted from what LSEC learned; LSEC conducted four insight days as part of the project.

One of these was the 'LSEC Business Breakfast: Green Skills in Action', where local employers were invited to our Bromley Green Lab. LSEC presented the project and the partnerships that support LSEC's green delivery.

A further insight day was tailored to colleagues in the sector. Here LSEC described the project, highlighting the integration of green skills into curriculum and experiences in encouraging staff and student engagement with green skills.

In addition to insight days, LSEC have also presented the project at external events. This included the London Sustainability Expo in December 2024, where LSEC ran a stall explaining green skills and opportunities for training to attendees.

LSEC have frequent employer panel meetings as part of wider college activity, enabling employers to make concrete suggestions for curriculum change and shaping provision.

Finally, the college's participation in the Mayor's Green Skills Academy (MGSA) for Local London has allowed LSEC to highlight how this project fits with wider initiatives in the region.

Student focus

Below are two case studies of LSEC students who attended L2 construction courses over the course of the project.

Case Study 1

Joe[1] grew up in Lewisham, South London—the 44th most deprived borough in England—where he faced significant socioeconomic hurdles. Despite these challenges, he achieved GCSEs in core subjects at his local comprehensive school.

Like many young men from similar backgrounds, Joe's career aspirations were shaped by the trades he saw around him. With limited guidance, he initially enrolled in a Level 2 Plumbing course in 2023 at London Southeast Colleges, uncertain about his long-term future.

Joe attended his first Green Skills induction session, initially sceptical about its relevance to his career path. A renewable energy workshop led by industry professionals sparked his interest in sustainable construction. By visiting a sustainable housing development with his course, he witnessed green plumbing systems in real-world applications, bringing theoretical concepts to life.

Joe completed a specialist module on air source heat pumps, discovering his passion for renewable technologies and their application in modern plumbing systems. Industry connections transformed Joe's self-perception from "just a student" to a future professional in sustainable construction.

> *"Before joining the course, I thought being a plumber was just about fitting pipework in houses. Now I see how my skills can help build a more sustainable future. There's so much more opportunity than I ever thought that there was."*
>
> *"The biggest change I've seen in myself isn't just what I know, but how I carry myself. I walk into a room now believing I belong there and have something valuable to contribute."*

Specialist roles in renewable energy systems typically pay much more than traditional trades positions and there is a potential increase through specialisation in green technologies compared to traditional plumbing.

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[1] Names are pseudonyms

Joe underwent a transformation from an uncertain student to confident future professional.

> *"I have learnt so much about green technologies and all the tutors here are on your side. They treat you as an individual and my lecturer is amazing. There are so many industry opportunities, including summer internships, so I am excited about the future."*

Joe's journey.

Before Green Skills Programme	After Green Skills Programme
Limited career vision focused on traditional plumbing. Reluctant to speak up in professional settings. Limited technical troubleshooting abilities. Uncertain about long-term career prospects.	Expanded vision of career in sustainable technologies. Confidently engaged with industry professionals Developed innovative approaches to technical challenges. Clear pathway to higher-paying specialised roles.

Case Study 2

After relocating to Southeast London as a child, Rob lived in the Royal Borough of Greenwich, the 57th most income-deprived borough of the 316 boroughs in England, where in 2019, 15.9% of the borough was classed as income-deprived. Rob studied at a local secondary school where he achieved GCSEs in the core subjects of English, Maths and Science.

Like many young people in the borough, Rob's career aspirations were determined by the role models around him, primarily trade workers. He took the advice of those around him and enrolled on a Level 2 Electrical course in 2023 at LSEC.

Through hard work and dedication, he passed his course in the summer of 2024 and began to think more about his next steps. Rob decided to enrol on a second level 2 course, this time in Plumbing, broadening his technical abilities across multiple trades.

Throughout his City & Guilds Plumbing course, Rob had the opportunity to attend guest talks and workshops relating to sustainability and green skills, including a workshop hosted by Kier Construction at Bromley campus' Green Skills Lab. It was after this event that Rob first began to think seriously about sustainability and what that meant for the construction sector.

While his course focused on traditional plumbing skills, Rob began to see that the scope within the industry reached further than traditional domestic or site work.

> *"The programme helped me see there is more to plumbing than fixing leaks. I would really like to learn more about some of the modern technology and activities that are still being developed. It is exciting that there will be jobs in the future that we do not even know about now."*
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> *"I didn't really know what green skills meant before, and even though I still wouldn't say I know a lot about it, I definitely understand more, and how sustainability will affect construction in the future."*

Rob was keen to continue learning and developing within his chosen career. Being exposed to the opportunities within the green skills sector broadened his aspirations and gave him an understanding of this growth sector.

Reflecting on his experience on the L2 course, Rob felt he had been able to shape his understanding of what green skills meant for a career in plumbing.

> *"I really enjoyed the sustainability workshop and learnt a lot. I did not really know what sustainability meant, but when we started talking about it more, I realised I knew more than I first thought, and it is about doing things to help the environment however we can."*

Before Green Skills Programme	After Green Skills Programme
Limited understanding of sustainability in construction. Career vision confined to traditional trades. Hesitant to engage in professional settings. Uncertain about future opportunities.	Growing comprehension of sustainability principles. Expanded vision of career possibilities. Increased confidence in professional interactions. Excitement about emerging technologies.