Creating a greener London

Project Case Study: South Thames College Group

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 provide basic skills and knowledge in preparation for higher-level learning into high-skilled, high-paid jobs.
South Thames College Group (STCG) 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 Point

At the Project's onset, the South Thames College Group had a broad curriculum offer across the construction trades but with no particular focus on green skills. Over the life of the project, the South Thames College Group have added discrete green construction courses to the Group's offer, including Level 3 Certificate in Domestic Energy Assessment; Level 3 Certificate for Retrofit Advisors; Level 3 Award in the Installation of Small Scale Solar Photovoltaic Systems; and an Introduction to Air Source Heat Pumps.

In addition, STCG have integrated green skills more comprehensively into existing provision. A good example of such integration is the bolting on of the L2 Award in Understanding Retrofit to the Programme of Study, followed by STCG's 16-18 L2 Multiskills learners. A second example has included funding CSCS green card achievement as a part of the exit processes for young learners. The CSCS card provides license to work on construction sites.

Curriculum Innovation

During the project STCG built state of the art training bays, designed to allow students to interact with live systems, fault find and build an understanding of key design principles. The bays covered the following green skill processes: air source heat pump installation; solar panel installation; EV charging & battery storage. The bays are particularly useful for upskilling purposes (qualified plumbers needing to add air source heat pump accreditation, for instance) since they provide sophisticated working systems.

In addition, STCG staff developed unique training rigs to cover all of the above three sustainable energy areas; these allowed students to build up and take apart systems using their component parts. The training rigs provide good practical experience in small groups for Level 1 & 2 students and will be recycled for use with cohorts in subsequent academic years.

The Group has also invested in virtual environment/reality construction programmes alongside virtual reality headsets. These resources will simulate real-world environments and provide a new 'hands-on' approach to skill development whilst closing the gap between theory and workplace practice. Programmes include Renewable Energy - Heat Pumps; Renewable Energy - Solar PV; Renewable Energy – Solar Thermal; Retrofit; Carpentry; Plastering; and Tiling.

Enhancing the Careers Experience

The raising awareness sessions, dropped into term 1 of each student's programme, helped students appreciate how important green issues are, how they will affect the Built Environment Sector, and how they will open a range of new careers within Built Environment trades and professions.

In addition, throughout the academic year STCG offered trips out for students, invited industry experts in, set up bespoke career events (such as a Solar Careers Fair in association with Solar Energy UK), and ensured that green skills were embedded into live briefs set by local employers. These 'events' all worked to enhance students' understanding of the well-paid progression routes open to them both in green employment and in education.

Developing Networks to Strengthen Workforce Planning

In the summer of 2024 STCG was commissioned by the South London Partnership (sub regional collaboration body of five London boroughs) to work with the University of Roehampton (UoR) to carry out a programme-mapping exercise to identify career

progression within the building retrofit sector across South London and use this to develop an HE/FE progression model.
The project explored and framed the current retrofit and wider (green) built environment provision offered by STCG and UoR. The work supported the evaluation of the current offer across both organisations, to include: the pipelines between STCG (FE) and UoR (HE); the progression lines within STCG and UoR as discrete organisations; and how provision accommodates existing and future demand in the relevant occupation sectors. Recommendations were made as a result of the evaluations referred to above and it is envisaged that these will support the sub-region's ambitions to reduce carbon emissions and attain carbon net zero for London by 2030. Such recommendations may also be of interest to the Department for Energy Security and Net Zero (DESNZ) and other key stakeholders outside of South London.
STCG also engages in termly employer panels across all its sites and all key subject areas, including construction. These are designed to support employer-informed curricula and to help evaluate whether current programmes are fit for purpose (teaching the right skills, up to date, emphasising the right aspects). The panels strengthen the Group's employer network, supporting access to tailored work placements and progression routes.
We continue to develop our partnerships with local authority housing teams in the Group's sub-region. Existing housing stock in the relevant boroughs will require retrofitting and most new builds are asked to support net-zero ambitions, using sustainable energy sources.

Achievements

STCG has been shortlisted for two awards at the 2025 'Unlock Net Zero Awards'. The Curriculum Manager for construction at STCG South Thames site has been included on the shortlist for the 'Climate Champion Power Award' whilst the College Group has been shortlisted for the 'Skills & Training Award'.
STCG's commitment to moving to net zero status was recognised by the achievement of the Platinum Net Zero Standard in June 2024. This marked a 53% reduction in the Group's total carbon emissions since the 2018/19 benchmark period. The Group has also recently established a net zero training hub which highlights those national qualifications (such as: Domestic Energy Assessment: Air Source Heat Pump Installation; Solar Panel Installation). STCG consider these be vital in providing the skilled workforce required to attain London and national net zero targets. These curriculum developments have informed targeted professional development for staff to support the quality of our expanding green Skills delivery.
The end of project survey returns have shown that the work to support a greener London and help develop sustainable construction skills has had a significant positive impact on the Group's students. An average of 95% of students, across a range of cohort types, reported that they had learnt either 'something' or 'a lot' about green skills

and technology during their course. In addition, significant numbers were considering green construction roles as employment progression (examples: 33% Solar Installation; 35% Retrofit Installation). Students also confirmed, via the survey, that they had been involved in significantly wider engagement with green-related events (trips, site visits, work placements, life briefs from employers). This wider engagement supported the development of work related-skills, with 92% of students reporting that they felt they had improved their 'commitment to getting work done' and an average of 93% reporting that they had improved their ability to use initiative.

Lesson Learned and What the Future Holds

The raising awareness sessions at the beginning of programmes proved invaluable since they showed that awareness of fundamental concepts was lower than STCG had expected.

The project provided a focal point for understanding what students need to strengthen progression options, and also suggested where there might be gaps. For example, the Group is considering a Level 3 Programme of Study offer which has an emphasis on green construction. This may (depending on funding routes available) use the Retrofit Advisor and Domestic Energy Assessment qualifications as central structuring pathways. The Group has a significant number of Level 2 construction Multiskills students for whom this would offer a significant extra option and one which could provide a clear sightline to well-paid green related work.

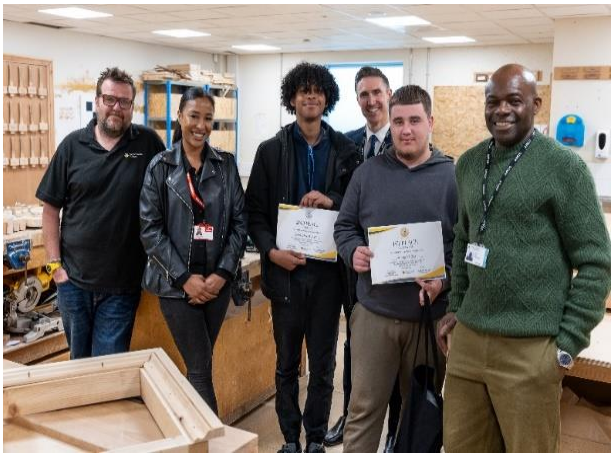
What also became clear during the project was that, whilst huge demand is predicted from a variety of reliable sources (only 5% of plumbers are trained to install air source heat pumps; 66,000 person years will be required to fulfil retrofit requirements in South London alone; the current Energy Secretary pledging to triple the amount of solar power by 2030), there is still much work to do in understanding how to unlock this demand, match it to job vacancies and then align the supply required. To ensure the necessary balance between supply and demand, key stakeholders (employers, education providers, community and civic organisations) will need to build strong and flexible networks together. The Local Skills Improvement Plan collaborations will be important in this regard.

Informing the Sector

STCG have delivered breakout sessions at two consecutive AoC conferences and used these to share developments and progress with regards to the project's outcomes. Both sessions generated new and important links with other FE colleges. One such link led to a staff visit to new green construction facilities at a neighbouring college which informed our subsequent purchase of similar resources.

With the support of the AoC STCG have contributed to several webinars over the life of the Project, allowing the group to share insights and take advice from a range of stakeholders including, for example: local authorities; trade bodies; university partners; FE partners; large local employers as well SMEs. Linked to this, STCG were asked to

share project insights at the Department for Board & Trade's Sustainable construction webinar in September 2024.STCG have also used the opportunities provided by the Project's formal insight days to, for example: invite local schools in to tour our green facilities and be taken through raising awareness presentations on sustainability.



Student focus

See below for two case studies involving STCG students who were enrolled in cohorts attached to the Project.

Level 2 Multiskills

When Jacob[1] joined the Level 2 construction course, he initially struggled with confidence in his academic abilities. However, the course's practical focus and individualised support helped him flourish.

Support was in place from the start to help Jacob settle, including one-to-one mentoring from construction staff, use of voice-to-text software, and modified assessment methods focusing on verbal explanations and practical demonstrations.

The retrofit and green technology units captured Jacob's interest, particularly:

- Solar PV installation - mastering panel mounting, wiring and system testing
- EV charging point installation - learning circuit requirements and safe installation practices
- Energy efficiency assessments - using thermal imaging cameras and energy meters.

Jacob engaged with a variety of employability events and projects, including:

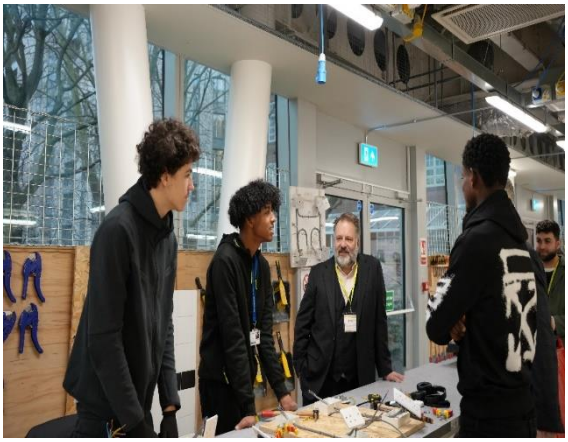
- Attending green skills professional sessions with local contractors
- Participating in mock interviews with construction employers
- Developed his LinkedIn profile and digital skills
- Gaining his CSCS green Card through project funded training.

[1] Names are pseudonyms.

Despite initial challenges with basic skills, Jacob:

- Achieved Distinctions in all practical assessments
- Completed the City & Guilds Level 2 Award in Understanding Retrofit
- Secured the Level 2 Diploma in construction with merit in the retrofit modules
- Won "Best Student" award at college graduation.

Jacob has set himself a 5-year goal; he wants to launch his own business, specialising in domestic solar installations, EV charging installation, and energy efficiency retrofits. The integration of green skills into the curriculum has helped open a new direction for Jacob and given him a platform from which to move into well-paid employment.



Level 2 Plumbing

Martin had explored many career ideas before signing up for Plumbing Level 1 with STCG. He found his first year very difficult since he was still developing his English and maths skills alongside the Plumbing course and lacked self-belief. The weakness in maths sometimes made the practical components difficult.

Martin persevered, however, and he did manage to pass his Level 1 course, even though this meant working much later on into the academic year than many of his peers. This determination with Plumbing was also carried through into his English and maths work, and it was noticeable during the year that these subject skills were gradually improving.

After much discussion with Martin and his parent, we agreed that he should progress onto the L2 Plumbing. His level 2 year was phenomenally successful: Martin grew in confidence and became the student others would go to for advice with their work. He became much more open to feedback and used it constructively to develop his skills and understanding. With this increase in confidence and receptiveness, Martin embraced green issues in the curriculum. He asked to be shown and guided through the sophisticated air source heat pump training bays and was always present for green

related trips and site visits. This included the new development adjacent to the American Embassy in Vauxhall, which incorporates rainwater harvesting, plant rooms, solar photovoltaic, as well as ethical waste management infrastructure.

Martin finished his studies with a combination of merits and distinctions across the eight graded units within Level 2. He progressed onto the NVQ Apprenticeship scheme straight from the Level 2 and we know, since Martin stays in regular touch with his lecturer, that he is involved in rainwater harvesting initiatives as a part of his employment and, more generally, really enjoying the work and the chance to continue to develop. Although he has not had the chance to install air source heat pumps yet, this will be an aspect of his NVQ over the next few months.

Although Martin did particularly well on his Level 2, his success is not unique. It is worth noting that many of his peers also thrived and that 50% of the cohort progressed onto the NVQ Apprenticeship. This is an unusually high number for the Level 2 Plumbing leavers; the project was an important part of the curriculum structure, which helped secure such positive outcomes.