Advanced Construction Engineering (ACE) Centre, AM2 Test Centre and Green Skills Centre

Background information and timeline

1. Addressing the Construction Skills Gap

2016

In 2016, the Corporation established a Task and Finish Group to explore the opportunities and viability of developing a curriculum offer in Construction and the Built Environment. The group was chaired by Philip Hilton, Vice Chair of the Corporation.

This initiative emerged in response to a clear gap in high-quality local and regional provision for Construction related education. An informal arrangement had previously existed between Moulton College and Northampton College, under which Moulton would concentrate on Construction and Northampton on Engineering. However, this model proved unsustainable due to Moulton College receiving two consecutive poor Ofsted inspections, alongside increasing dissatisfaction from employers regarding access to construction training and skills provision in the local area.

The regional education context further compounded the issue. Local schools were underperforming in terms of GCSE outcomes and were not sufficiently engaged in delivering careers advice and guidance that promoted alternatives to traditional university pathways. This lack of support was particularly evident in relation to key local sectors such as Construction, Footwear Manufacturing, Automotive and Motor Sports Engineering and Logistics.

Publication of Farmer Review

At the national level, the 2016 Farmer Review[1], titled “Modernise or Die”, highlighted the urgent need to reform the UK construction industry, exposing major issues such as inefficiency, waste, environmental harm and poor training.

To directly address these issues, the College adopted a forward-thinking approach by establishing the Advanced Construction Engineering (ACE) Centre at the Booth Lane campus in Northampton. The £4.75 million investment received strong support from local and regional employers, who recognised the need for a new model of training that better aligned with modern industry demands.

The ACE Centre was named intentionally to reflect a shift in mindset - applying best-practice principles from engineering into construction. This includes promoting lean construction methods, tighter tolerances, and a “right first time” approach that aims to reduce costly post-build corrections (commonly referred to as "snagging"). The emphasis on accuracy and precision mirrors the rigour typically seen in engineering disciplines and is intended to influence positive behavioural change in construction practices.

[1] Modernise or die: The Farmer Review of the UK Construction Labour Model - 17 October 2016

2. Business planning and submission of Capital Fund bid to SEMLEP

2017

The Governor Task and Finish Group developed a business plan that addressed several key areas including the curriculum offer, projected student growth profile, study programme design, apprenticeship pathways and employer engagement. To inform this work, the group conducted an analysis of further education provision at both local and national levels, identifying gaps and examples of best practice. This included a benchmarking visit to Leeds College of Building and the British Association of Construction Heads (BACH).

The College submitted a bid for part-funding of the ACE Centre and was awarded £2.25million external funding from SEMLEP's Skills Capital Fund.

The facilities were designed in collaboration with leading employer partners in response to high-volume growth in the local enterprise partnership region's economy – particularly the need for specialist and higher-level skills responding to the Strategic Economic Plan (SEP)[2] growth plans for sustainable housing in both the public and private sectors.

A total of 15 major companies, including Kier, Bowmer & Kirkland, Metcalfe's and the Murphy Group submitted written pledges to act as industry-based partners.

The College organised a series of staff recruitment events to showcase the opportunities offered by the new facility and to attract candidates for both teaching and support roles. These events promoted flexibility in working arrangements and emphasised the value of dual professionalism - encouraging individuals with industry experience to bring their expertise into education.

3. Curriculum design

2018

To ensure strong curriculum design, the College engaged with awarding organisations to gain a clear understanding of available qualifications and progression routes.

The aim was to develop opportunities for students not typical in further education construction, combining areas like Brickwork and Hard Landscaping, Painting, Decorating and Interior Design, and Carpentry, Joinery, and Theatre/Film Set Installation.

Alongside construction of the new building in September 2018, the College first launched its range of Construction Engineering courses enrolling over 300 students on a range of innovative study programmes across different disciplines.

4. Advanced Construction Engineering (ACE) Centre

2019

With the opening of the new centre in September 2019, the College was able to expand its offer with courses in Brickwork, Plumbing and Heating and Civil Engineering.

Courses were offered from Level 1 to Level 3, with clear progression opportunities to Level 4 and 5 at partner universities. These higher levels provided pathways to technician, supervisory, and management roles in Construction Engineering.

[2] South East Midlands Strategic Economic Plan – November 2017

Students also had the option to take a multi-skills programme, including Bricklaying, Plumbing, Carpentry, Decorating and Electrical, which allows them to experience a number of trades before deciding where to specialise.

The College placed a strong emphasis on developing a targeted apprenticeship offer to meet employer needs. As a result, several new companies began working with the College, including Briggs and Forrester, MY FAB, Carmac Building & Civil Engineering Ltd, Mills Carpentry and Colonial Construction with several others offering work experience and industry placements.

The ACE Centre features an innovative 'Digital Lab' with a Virtual Reality classroom, 3D printing facilities and industry-standard workshop equipment.

5. Expansion of courses at Daventry campus

2020

In 2020, the College expanded its Construction offer by introducing programmes of study at the Daventry campus. This strategic move aimed to improve access to construction training for students and build stronger relationships with employers in the Daventry area.

6. LSIP – aligning portfolio of provision with local, regional and national priorities

2021

The College worked closely with the Northamptonshire Chamber of Commerce and several key employers on the Local Skills Improvement Plan (LSIP) to ensure its construction curriculum was closely aligned with the local labour market needs.

This later led to additional investment with a focus on green skills, particularly in ground source and air source heat pumps through the Local Skills Improvement Fund (LSIF), and the use of digital technologies like virtual reality (VR) to help students develop and enhance their practical skills.

7. AM2/AM2S Assessment Centre

2021

In April 2021, Northampton College identified and acted upon a strategic opportunity to enhance regional skills provision by establishing the only electrotechnical testing centre in Northamptonshire. This initiative led to a £1.65 million redevelopment of an existing College facility, part-funded through SEMLEP's Local Growth Fund.

The newly created, state-of-the-art facility incorporates a dedicated Electrical Assessment Centre alongside existing high-quality training rooms. This development provides the specialist, independent environment required for Electrical Apprentices to undertake their End Point Assessments (EPA) aligned to the latest Apprenticeship Standards.

Prior to the opening of this facility, apprentices (including those at Milton Keynes College) were required to travel to assessment centres in Peterborough or Birmingham to complete the industry-recognised three-day trade test – often incurring significant additional costs and logistical challenges.

8. ACE Centre extension

2022

The College recognised the urgent need to expand its bricklaying and multi-skills training to address the severe skills shortages facing Northamptonshire's construction industry. Demand for places was high, but the ACE Centre had reached full capacity and could not accommodate additional students.

A new £900,000 extension, fully funded by the College, was built and opened in October 2022. It features a sustainable classroom currently being constructed by our student civil engineers, bricklayers, and carpenters - giving them hands-on experience while teaching the importance of sustainability in construction. This is supported by local and regional businesses who require specifically trained staff to fill the skills gap that currently exists, providing a sustainable, long term and modern workforce to the construction industry and related services.

9. Green Skills Centre

2025

In March 2025, the College opened a new Green Skills Centre to address the UK's growing skills shortage in the construction and built environment sectors, with a particular focus on green technologies. It aims to upskill the current construction workforce and ensure students are prepared for careers in sustainable construction.

The College successfully secured £500,000 to bring this innovative project to life. Around half of the funding was sourced from the Government's Local Skills Improvement Fund and Strategic Development Fund. A third came from the College's T Level development fund, with the remaining investment drawn from the College's estates budget. This strategic blend of funding reflects the widespread recognition of the Centre's potential to strengthen the region's construction skills base and contribute to the national Net Zero agenda.

The Green Skills Centre is equipped with cutting-edge renewable technologies and has been designed by Quantum, a leading carbonisation specialist and renewable training provider.

The facility includes advanced systems such as air source and ground source heat pumps, solar PV and solar thermal technologies, wind generation systems, electric vehicle charging infrastructure, and energy-efficient heating and water solutions.

Students will be trained in best-in-class practices, using the latest equipment to build future-ready expertise. The Centre uses virtual reality technology and simulators to learn how to climb scaffolding, operate a variety of construction vehicles and practice installing renewable energy technology.

This state-of-the-art centre will benefit hundreds of students by giving them direct access to the latest green technologies. It also offers pathways for adult learners looking to enter the construction industry, as well as opportunities for existing professionals to upskill in key areas.

The Centre also supports the College's collaboration with the University of Northampton, where both institutions are engaged in research into efficient design and low-carbon technology implementation. This partnership reinforces the College's commitment to tackling climate change by raising awareness and fostering innovation.

The Green Skills Centre enjoys strong backing from local industry. Businesses such as Castle Climate Control and Thorn Electrical are actively involved, delivering masterclasses and engaging with students.

In addition to full-time courses, the College will offer a wide range of competency-based and licence-to-practice training programmes in green technologies, including a brand-new course focused specifically on sustainability.

10. Impact

2025

The Advanced Construction Engineering (ACE) Centre has been a transformative and essential driver of change, growing from a starting point of zero to a thriving hub of 600 students in just six years.

Designed specifically to address the emerging skills gaps between industry needs and the existing capabilities of learners aged 16-18 and 19-24, the ACE Centre offers a comprehensive portfolio of provision. This includes full-time and part-time programmes, professional development courses and apprenticeships – all aligned to meet employer demand and support future workforce development.

It's had a measurable impact on the region's economic growth by increasing the number of skilled employees in the sector, contributing to overall productivity.

The College has also created an expanded pipeline of multi-skilled students at Levels 1 and 2, preparing them to enter the Built Environment industry. This pipeline is essential in meeting the increasing demand for skilled workers, which, if unmet, could hinder the economic development of local employers and affect the delivery of critical social, commercial and transport projects.

11. The College in the community

The College is committed to supporting community projects and across Northamptonshire. These projects have provided the students with opportunities to extend their skills, gain experience of real-world working environments and strengthen their connections with the local community.

External projects include:

- Working with multiple partners on the restoration of St Katherine's Gardens, Northampton
- Improvements to St Giles Churchyard, Northampton
- Created a Santa's Grotto for Northampton BID for visitors to Northampton
- Working with West Northamptonshire Council and the Churches Conservation Trust on the £3.5m restoration of Northampton's historic Old Black Lion pub
- Heritage restoration work of the pond around 'The Woman with a Fish' statue at Delapre Abbey and students being given a 19th century cottage to renovate
- Ongoing heritage works at Northampton and Lamport Railway
- Working with South Court Environment to create a community garden for residents
- Created horse mounting blocks for the British Horse Society at Salcey Forest
- Bricklaying students worked on Abington Park's Aviary restoration project.

They have also developed, supported or organised:

- Annual Women in Construction event to promote the industry to students from three Northamptonshire secondary schools
- Sustainable Futures workshops for Year 10 students at four senior schools
- The Big Rig Low Carbon Challenge for six secondary schools
- Workshop at STEAM Northants careers event for more than 2,500 school pupils at the University of Northampton
- Ran workshops for 300 students at The Duston School at its Construction Careers event for Year 8 students and its STEM event for Year 9 students
- Construction Trade Show for construction businesses which also raised money for The Frank Bruno Foundation
- An eco-focused Learning Lab for students called The Green House Project
- Green Skills Centre to help students and construction professionals improve their construction skills
- Helping professional rugby players learn construction skills as they approach the end of their sporting careers
- Selling scrap wood in aid of domestic abuse charity Rebuilding Lives UK

12. Industry links

Forging strong links with industry partners has enabled the College to create a curriculum which surpasses industry expectations and provide students with resources and work experiences in modern and conservation construction methods.

Examples, include working with:

- Winvic Construction Ltd: students gained site experience on its £85m project to provide accommodation for 814 university students in Birmingham
- Carmac Building & Civil Engineering Ltd and DSV – Global Transport and Logistics: using our plant simulator to deliver masterclasses to students, develop realistic training situations, and to further upskill our staff and their staff
- MY-Fab: students are gaining practical experience working on two modular student accommodation projects for London, built using MY-Fab's offsite manufacturing technology at their Northampton facility.

13. Construction Engineering initiatives

The College connects hundreds of students with industry leaders and leading educators and has exposed them to inspirational talks, highlighting career opportunities in timber, restoration and sustainability. Northampton College is one of only 10 colleges in the country to be selected to take part in the CITB-IOC mentoring programme.

14. Ignite the Spark

The College came up with an initial concept of developing an exciting programme of annual STEM-related events aimed at school pupils under the 'Ignite the Spark' banner to encourage more young people of all backgrounds and genders to consider pursuing STEM-related further education courses and careers.

To begin with, the programme concentrated solely on STEM but more recently, in response to other pressing skills needs, its remit has expanded to include bespoke events for areas such as construction and sustainability.

Pupils get the chance to enjoy a series of taster sessions to experience what life could be like on a STEM course at college, with opportunities to try a virtual welding simulator, build a brick wall, get to grips with plumbing techniques and use scientific theories to predict volcanic eruptions.

To date Ignite the Spark has involved nearly 1,700 students and the team has more events planned for this year.

The Green Skills Centre plays central role in Northampton College's sustainability outreach activities, including the Big Rig Low Carbon Challenge - an annual event that introduces hundreds of local secondary school pupils to careers in sustainable construction.

15. National Recognition - Green Gown Awards

Northampton College established itself as a national leader in sustainability, winning the prestigious Sustainability Institution of the Year title in 2023 at the 19th UK & Ireland Green Gown Awards. This award recognises the College's whole-organisation commitment to sustainability, with impactful initiatives spanning decarbonisation, sustainable construction, and education for sustainable development.

Following this, the College earned a place in the International Green Gown Awards finals in 2024, underlining its role as a model for sustainability across the FE and training sector.