



Delivering Innovative  
Schools Through  
Digital Solutions



# How new technology can transform learning environments.

**Transforming school estates with the integration of technology is essential so that students have a safe environment to learn in, as well as fostering creative development and innovative thinking.**

Technological innovation and digitalisation provide solutions and opportunities to deliver these objectives.

The UK must remain committed to its targets of rebuilding and retrofitting school buildings. Technology can, and should, be used to provide an opportunity for all, to make a meaningful impact, and bring about a future that is better and brighter than today.

Our purpose is to enhance the lives of learners, educators, and communities through the power of technology – enhancing education, and career opportunities..

Schools have unique transformational power, so we urge policymakers to unlock potential through the continued modernisation of learning environments.

This paper outlines the need for innovative, digital solutions in schools to meet the UK's ambitions for school estates, as well as the policies and technologies that can create more fruitful learning environments for students. The Government's 'mission' to break down barriers to opportunity should accelerate this agenda.



# Schools are ready to digitally innovate

Rebuilding and retrofitting schools in the UK should be seen as a priority for the Government to ensure students are taught in the safest, most comfortable environments possible.

We welcomed the Government's commitment as part of the Autumn Budget 2024 to invest an additional £550m into the school rebuilding programme, to ensure that the much-needed rebuilding of over 500 schools across the UK can continue.

The £300m of extra funding for school retrofitting and maintenance is another important step. This programme should also consider how to reduce cost and drive down carbon emissions – as well as giving pupils access to the technology needed to thrive in the modern age.



Over the years, the Department for Education (DfE) has initiated various programmes to enhance student learning environments. These ambitions, alongside additional funding to the DfE's budget, can be heightened by using innovative technologies.

**For example, programmes such as Connect the Classroom have proved important in aiming to improve the internet speed in schools to ensure students have the most beneficial learning experiences, enhanced by technology.**



Digital innovation is vital to advancing the learning environment for students and is compatible with their learning during all stages of education. The UK has an opportunity to learn from international best practices and embed tech at the heart of classrooms. For example, the Office of Educational Technology was set up by the US Department of Education, with the main focus of developing national policy and a vision for how technology can be used to transform learning experiences.

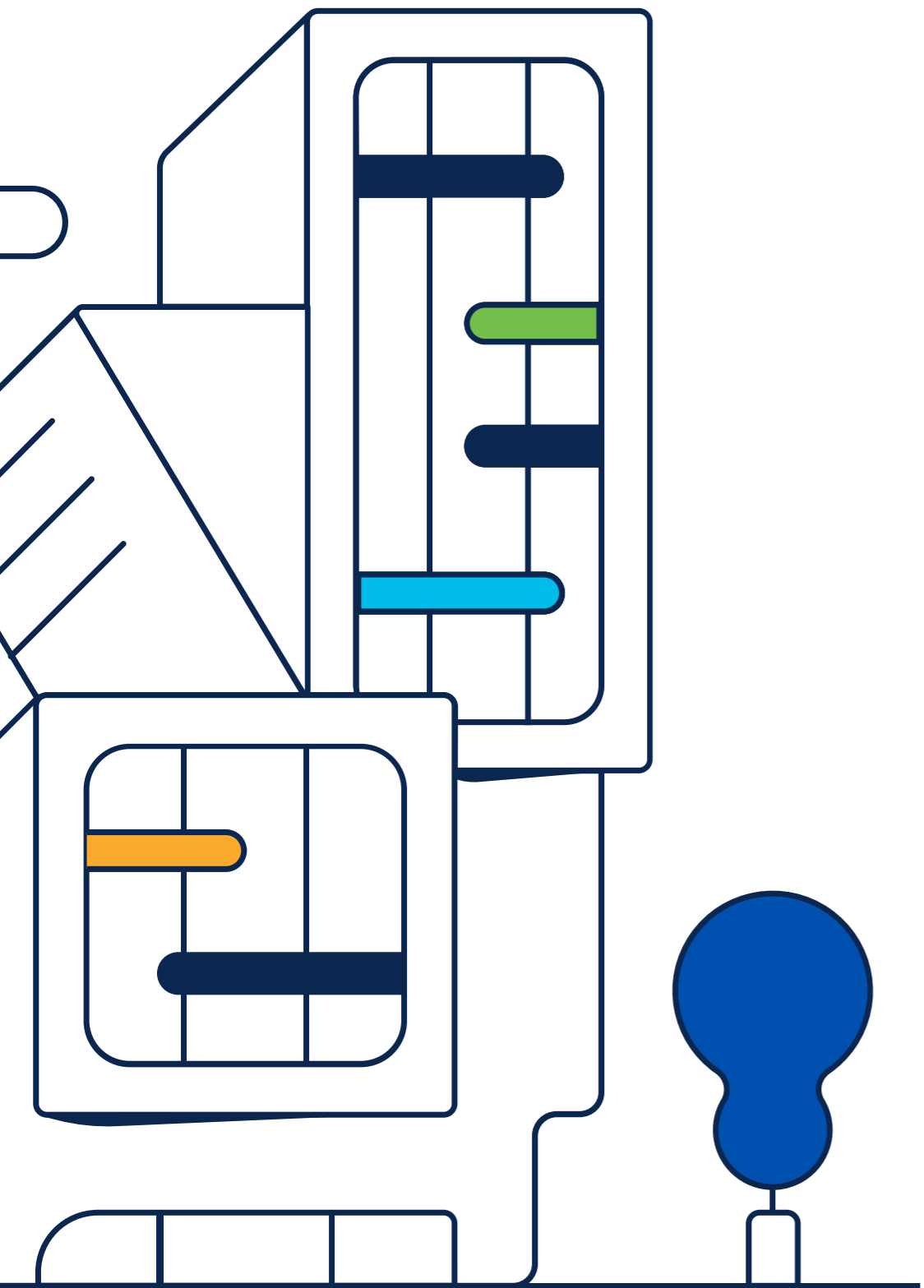


New efficient, cost-effective technologies can also help keep schools at the correct temperature, maintain safe CO<sub>2</sub> levels, use correct lighting for educational settings, and increase sustainability practices in schools when possible. Through the rebuilding and retrofitting of schools, it is important to help make school buildings as sustainable as possible.

The 2023 annual report for greenhouse gas emissions, published by the Department for Energy Security and Net Zero, indicates that the UK public sector still accounts for a significant amount of emissions. At the same time, the Government has set a target to reduce direct emissions from public sector buildings by 75% by 2037.

**The cross-Parliament, cross-industry understanding and prioritisation of improving infrastructure across the education system is greatly welcomed – as is the new political impetus from the Government.**

Looking ahead, officials, policymakers and senior leaders must prioritise reforming our school buildings to ensure school estates actively support students' learning throughout their education. Making technological innovation a central part of public sector transformation will enable the UK to meet these objectives and encourage students to thrive in supportive learning environments.



# How technology can make this vision a reality

**Having targets and policy goals in place is undoubtedly necessary, considering the various challenges posed by inadequate school infrastructure and meeting the UK's Net Zero targets.**

A 2023 report by the National Audit Office found that around 700,000 pupils are learning in a school that needs major rebuilding or refurbishment. This presents an opportunity to futureproof school estates and ensure they leverage technology that can make them more efficient, whilst improving educational outcomes. In the case of innovating schools, technology will be central to assisting the government in delivering on its ambitions to rebuild schools effectively.

Cisco will continue to work with the Government to achieve these priorities using cost-effective technology to bolster the resilience of the school's infrastructure.

**83%**

**of teachers feel technology for creating smart buildings which operate more sustainably would be beneficial for their school.**

## CASE STUDY

**The story of the UK's first purpose-built biophilic school is an example of how a school should be technologically transformed. The concept of biophilia, referring to "love for humanity and nature, independence and freedom", has been put into practice in the reforming of St Mary's Catholic Voluntary Academy in Derby.**

**Following an arson attack in 2020**, the former school building was so severely damaged that it had to be demolished. With students in a temporary environment for nearly three years, the new site for St Mary's is an early showcase of the Government's GenZero pilot programme.

**Through its Country Digital Acceleration (CDA) programme**, Cisco has worked in collaboration with St Mary's to find a delicate balance with technology that blends into the environment and enriches the curriculum and operations of St Mary's, in line with its biophilic ambitions.



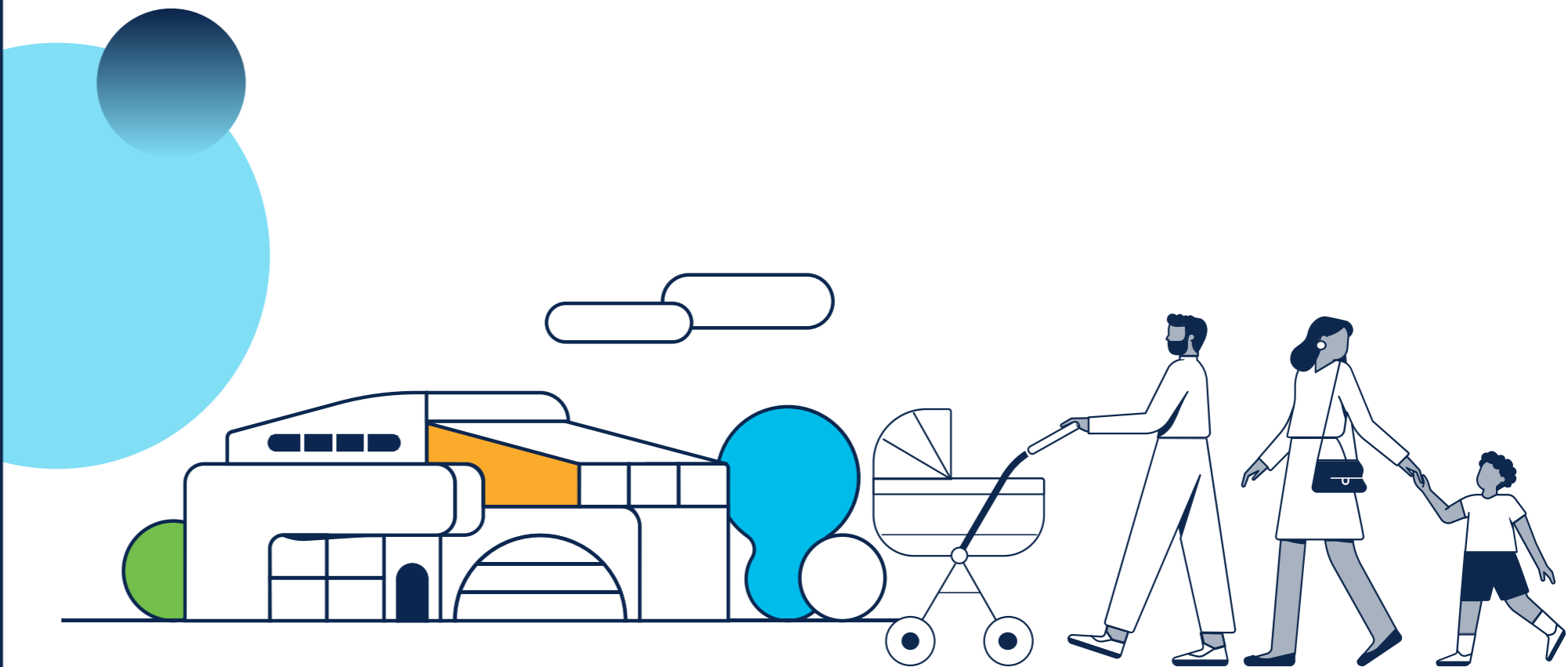
Technologies to increase sustainability in schools can also be supplemented with platforms that help students build their digital skills in a way that can be applied in the sustainability space.

The Government's organisation, Skills England, seeks to bring together key partners to ensure the UK meets national skills needs. A report published by Skills England in September 2024 highlights that an increasing number of roles require specific digital skills – some even require more advanced skills such as in AI and automation. It also finds that a "green workforce"

will be key to delivering the UK's net zero ambitions.

New technology can contribute to the Government's ambitions in holistically reforming school infrastructure, whilst also reducing carbon emissions and improving pedagogy around green and digital skills. This would stand the UK out as a key trailblazer in the international community for implementing effective policy to initiate direct action in the education system.

The methods to do this in both building IT infrastructure into new school buildings and existing estates will put new technology at the forefront of ensuring students are taught in safe and comfortable learning environments, which are beneficial to their overall educational experience.





# This is a proven approach

We know the technology required to accelerate the drive towards innovating schools works because it has already been implemented in schools in England.

New technology can both monitor CO<sub>2</sub> levels in a classroom and keep them at a safe level. This technology ultimately aims to make teachers and students alert to the right information, in the right format. It helps to make rapid, informed decisions about a learning environment which school staff can use to their benefit to maintain air and light quality in classrooms.

Using these kinds of solutions, schools can use wireless access points to combine environmental data with physical monitoring, to indicate when carbon dioxide has reached a high level. This cloud technology activates automatic sensors and IoT devices which immediately reduce CO<sub>2</sub> levels by automatically opening a door, for example.



**Technology** can also record and monitor data on the environmental impact of a school to allow school staff to actively be involved in monitoring the carbon emissions of their environments.



**Smart devices** can also act as a learning platform, where teachers will be encouraged to use the device and the readings it gives, to teach their students and blend technology outcomes with pedagogy methods.

Almost half of teachers think insufficient internet access is somewhat or completely hindering their school's ability to provide good quality teaching.

This technology is helping to create a safe learning environment for students, as well as provide an educational platform for students to engage more with sustainability focused tech.

# Making this vision a reality

Cisco welcomes recent policy developments to enhance the sustainability of the UK educational system but, as a nation, we must now take active steps to ensure that all students are taught in safe and innovative learning environments.

To achieve these ambitions, we encourage policymakers to use effective partnerships with the private sector to introduce advanced technology into the school system as a solution to innovating school infrastructure.

This is not only beneficial for public sector infrastructure, and the UK's net zero journey, but for maintaining learning environments which nurture students' experience throughout their education.

**For over 20 years, Cisco's approach to teaching and learning has been empowering educators to take on new challenges. We're keen to share our learnings and vision for the future with relevant stakeholders.**

To help make this vision a reality, and if you would like to know more about Cisco's proposals and technologies, please contact

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