Department for Education

Guidance

Improve and renew your long-term estates plan

Published 25 February 2026

Applies to England

Contents

Overview

This guidance provides a process to help schools and colleges plan, prioritise and deliver estate improvements that address condition, suitability, resilience and decarbonisation in a clear, logical and proportionate way.

The 7 steps in the process provide a pathway from understanding the issues to planning practical improvements:

- step 1: establish your estate vision and objectives
- step 2: understand and baseline your estate
- step 3: assess the condition and urgent risks of your estate
- step 4: assess the suitability and sufficiency of your estate
- step 5: identify your resilience and decarbonisation priorities
- step 6: define a strategic approach to renewal and retrofit
- step 7: develop a plan of work

Each organisation's circumstances will be different. You may have already planned or implemented some of the practices and measures in this guidance, or some might not be suitable for your organisation or site.

Consider which practices and measures might be most effective based on your organisation's:

- needs
- estate condition
- available resources

When carrying out any works, you should comply with the relevant regulations and follow health and safety guidance.

Further guidance and case studies will be published in September 2026.

Developing your long-term estates plan

For a significant proportion of the buildings in the education estate, it can be more resource-efficient to repair good-quality buildings than to demolish and replace them. Depending on the scale of the work required, this can be less costly and have a lower carbon and environmental impact.

Deciding whether to retain, adapt or replace buildings can be complex. Decisions should be based on thorough survey information that assesses:

- condition

- energy performance
- sufficiency and suitability of the buildings

Schools and colleges should also address:

- energy use
- climate resilience
- decarbonisation
- changing occupancy
- any statutory obligations, including for accessibility and for health and safety

Providing high-quality learning environments should be the main driver for all intervention decisions, supported by robust condition and performance data.

Using this guidance

This guidance sets out a structured, step-by-step approach to support schools and colleges in planning and delivering estate improvements.

A central principle of the guidance is that estate improvements should be planned holistically. Considering buildings, systems, users and the wider environment together can help you:

- avoid unintended consequences
- reduce disruption
- maximise value for money

Many interventions can deliver multiple outcomes simultaneously – for example, improving condition while also reducing carbon emissions or enhancing resilience to climate change.

Every school and college estate is different. Organisations may already have well-developed strategies or be at an earlier stage of planning. The steps in this guidance are designed to be flexible and proportionate, allowing responsible bodies to apply them in line with their individual circumstances, resources and priorities.

Long-term estates planning should be viewed as an ongoing process rather than a one-off exercise. Regular review, performance monitoring and updating of priorities are essential to ensure that plans remain:

- relevant
- evidence-based
- aligned with changing educational needs

For moderate to high-budget interventions to be successful, you will need to engage built-environment professionals, such as surveyors, designers and contractors, who have experience in delivering retrofit projects. Appendix E provides more information about involving technical specialists.

Step 1: establish your estate vision and objectives

Begin your long-term estates planning by establishing a shared and forward-looking vision for your estate. This vision should describe how your buildings and land will support high-quality education, both now and in the future, while responding to the growing pressures of aging assets, climate change and rising energy costs.

To help develop your estate vision and objectives, refer to the:

- good estate management for schools strategic estate management guidance or
- further education estates planning strategic estate planning guidance

A well-defined and agreed estate vision provides a consistent framework against which future investment decisions can be tested and prioritised. It enables you to assess whether proposed works contribute to long-term goals, support educational outcomes and represent good use of resources.

Step 2: understand and baseline your estate

Before planning what building works should be included in your long-term estates plan, you should first gain an understanding of your estate by following the:

- understanding and managing your land and buildings guidance or
- further education estates planning guidance

In the context of climate change, your estates strategy should consider the 3 aspects of:

- condition
- sufficiency
- suitability

Step 3: assess the condition and urgent risks of your estate

Understanding the condition of your estate is essential to maintaining safe, functional and compliant buildings. You should use reliable condition information to:

- identify defects
- understand risks
- prioritise interventions in a planned and proportionate way

The DfE-funded Condition Data Collection 2 (CDC2) programme can help you start identifying and assessing the condition needs of your school or college. These surveys provide a consistent overview of building elements and systems. They are intended to highlight areas of concern, including those that may present urgent risks. Usually, the most serious and immediate condition issues should have been identified by DfE surveyors through this process.

It is important to understand the limitations of the condition data collection (CDC) information. The surveys are non-intrusive and high-level and therefore do not provide detailed diagnosis or design-level information. The CDC findings often need to be supplemented with more detailed or specialist surveys before works can be fully scoped, costed and prioritised. This may include intrusive investigations or specialist assessments, depending on the nature of the issue. For example, high-level surveys would not typically identify problems such as:

- water-quality issues
- internal pipe corrosion
- hidden structural defects
- failures within mechanical and electrical systems

If condition data or other evidence indicates potential risk, you should consider commissioning further surveys by suitably qualified professionals to confirm the:

- extent
- urgency
- implications of the issue

This additional information will help you make informed decisions about whether issues can be managed in the short term or require immediate intervention.

If priority or urgent condition issues are identified, either through the CDC programme or further surveys, you will need to take appropriate action to manage the risks until permanent remedial works can be completed. This may include:

- temporary repairs
- increased monitoring
- restricted use of affected areas
- changes to operational procedures

In some cases, additional management actions may be required to ensure health and safety, such as enhanced inspections, temporary closures or the introduction of interim control measures.

You should also refer to the managing older school buildings guidance for help in identifying building systems and prioritising their future maintenance and repair.

This step provides a critical evidence base for prioritising works and informs subsequent decisions about renewal, adaptation and decarbonisation across your estate.

Step 4: assess the suitability and sufficiency of your estate

You should refer to the area guidelines and net capacity resources to help you assess the sufficiency and suitability of your estate.

It is important that you ensure you have enough space to accommodate both the needs of the curriculum and the school's wider needs. The net capacity assessment tool can help you calculate this. Current and future learner numbers should be considered.

You should then assess the condition of your buildings and whether they are suitable for your educational requirements. Your estate strategy must consider the suitability of the accommodation at your school or college for the education you aim to provide.

A suitability assessment could include:

- the type of curriculum to be taught
- class sizes for different subjects
- ICT and educational technology provided
- special educational needs requirements
- welfare requirements
- educational plans and initiatives
- safety, access, circulation and security
- functional problems with internal and external spaces, including their:

- size
- shape
- location
- environment
- fixtures
- fittings
- furniture
- ICT

Priority should be given to educational use of spaces, although suitability assessments can be extended to consider appropriate community and trust use. In instances where spaces have been adapted for community or trust use, you should make sure the space can be easily returned for education use.

When appraising options and prioritising building works, there should be careful assessment of the anticipated impact of each option on educational outcomes.

Step 5: identify opportunities to decarbonise and improve resilience to climate change

You should plan for both resilience and decarbonisation holistically.

Resilience in this context means the ability of your school or college estate to withstand and adapt to climate-related risks such as flooding and overheating while maintaining safe learning environments.

Decarbonisation is the reduction of the carbon emissions associated with your buildings and operations. Reductions could be from energy-efficiency improvements or introducing low-carbon heating solutions.

You should embed these opportunities within your long-term estate strategy by:

- identifying and prioritising risks
- managing any identified risks
- embedding adaptations and mitigations into your long-term estate's strategy and master planning

The summary of climate change risk on the delivery of education contains guidance on what to do during extreme weather events.

Identify and prioritise risks

You should:

- assess whether summertime overheating or flooding is a problem for your site
- consider appointing suitably qualified professionals to assess vulnerabilities and offer targeted intervention recommendations before you make any changes

Understanding your carbon emissions and how you can decarbonise

You should use the:

- resources on the sustainability support for education hub to calculate your carbon footprint and develop your climate action plan
- guidance and tools on the schools resource hub for public sector decarbonisation to help you understand the audit process and develop your decarbonisation plan

Step 6: define a strategic approach to renewal and retrofit

To ensure your estate vision, estate strategy and asset management plan translate into practical and integrated action, you should adopt a structured approach that links planning, delivery and ongoing review.

Begin by developing an estate masterplan that:

- sets out a site-wide view of how buildings and land will be improved over time
- brings together interventions that address condition, suitability, resilience and decarbonisation

Your masterplan should:

- allow works to be sequenced logically
- minimise disruption to learning
- maximise value for money

For example, it should co-ordinate interventions that can be delivered at the same time or by the same contractor. It should also consider how you could rationalise your spaces if you have more floor area than you need.

You should then consider funding, procurement and resourcing. This includes:

- assessing available funding routes
- selecting appropriate procurement approaches
- ensuring proposals are aligned with funding criteria

Engaging experts

At this stage, you should engage suitably qualified technical experts to support surveys, design and delivery, ensuring that all works are informed by appropriate professional advice.

All proposals should include clear arrangements for compliance and assurance. This includes adherence to relevant standards and technical guidance, including DfE's construction requirements, where applicable.

Compliance and assurance

All proposals should have clear arrangements for compliance and assurance. This includes adherence to relevant standards and technical guidance, such as the school and college design and construction standards and guidance, where applicable.

You should also take steps to protect your estate from risk, including considering joining the DfE risk protection arrangement (RPA) for schools as part of your wider risk management and insurance strategy.

Educational value

Where possible, embed educational value within estate projects. Proposals may include opportunities for curriculum integration and learner engagement, particularly where works relate to sustainability, energy or the outdoor environment. These resources can support this approach:

- National Education Nature Park
- STEM Learning: construction-related resources
- Energy Sparks: learner-focused energy-saving activities

Implementation

During implementation, works should be delivered in planned phases to maintain quality and minimise disruption. For example, landscape and planting works are best undertaken in the appropriate seasons to support long-term success, with design teams providing inspections to confirm works meet specifications.

Maintenance

Clear handover and maintenance arrangements should be established at completion. This should include:

- accessible documentation
- planned maintenance schedules
- defined responsibilities to ensure interventions continue to perform as intended

Monitoring

You should regularly monitor your performance and review your strategy. This includes:

- benchmarking costs and performance
- monitoring energy
- capturing water and carbon metrics
- reviewing progress against strategic and climate objectives

The lessons learnt should further inform your estates strategy, allowing priorities to be adjusted in response to changing conditions, policy requirements and educational needs.

Step 7: develop a plan of work

Using the strategic approach established in step 6, you should now develop a plan of work that translates your estate strategy into a deliverable, phased programme of interventions. The plan of work should clearly set out what will be done, when and why, taking account of available funding, operational constraints and educational priorities.

The purpose of the plan of work is to provide a practical route from strategy to delivery. It should enable you to sequence interventions logically, manage disruption to learning, and co-ordinate related works so that investment delivers maximum benefit over time.

Your plan of work should be proportionate to the scale and complexity of your estate, but sufficiently robust to support funding applications, procurement decisions and engagement with technical specialists.

Producing your plan of work

When developing your plan of work, follow a structured approach.

Identify suitable interventions for your estate
Draw together interventions identified through earlier steps, including:

- condition issues
- suitability improvements
- resilience measures
- decarbonisation actions

To prioritise and plan, refer to:

- survey evidence
- risk assessments
- strategic priorities

To support this process, high-level guidance on typical interventions and their benefits is provided in the appendices covering:

- building fabric (Appendix A)
- internal finishes and fittings (Appendix B)
- mechanical, electrical and public health services (Appendix C)
- the outdoor environment (Appendix D)

These appendices are intended to help you develop your options. They do not prescribe solutions.

Group and plan the required works
Consider how interventions can be grouped to improve efficiency and reduce disruption. For example, combining fabric upgrades with heating or ventilation works may reduce abortive work and improve overall performance. Co-ordination should also consider contractor access, programme length and opportunities to align works with planned maintenance or holiday periods.

Phase and sequence delivery of the required works
Your plan of work should set out a clear phasing strategy, showing which works will be delivered in the short, medium and longer term.

Phasing should reflect:

- the urgency of condition risks
- the availability of funding
- decant and operational constraints
- the readiness of projects to proceed

Consider the scale and complexity of the planned works
Interventions will vary in scale, disruption and complexity. Your plan of work should identify whether works are minor, moderate or major in nature and what this means in practice for delivery, disruption and resourcing.

Balance priorities and outcomes
When finalising the plan, you should balance:

- educational impact
- cost
- carbon savings
- resilience benefits
- value for money

Early phases may include low-cost, high-impact measures alongside preparatory work for more complex projects later in the programme.

Technical standards and requirements

Where projects involve major refurbishment or new build, you should ensure that proposals align with DfE's technical requirements for the design and construction of school and college buildings and outdoor environments.

Using your plan of work

Your plan of work should be a live management tool, used to support:

- funding and business-case development
- procurement and consultant appointments
- communication with stakeholders

- the monitoring of progress against strategic objectives

The plan should be reviewed and updated regularly to reflect changes in:

- condition
- funding availability
- policy requirements
- educational need

Appendix A – building fabric

The building fabric, which includes walls, roofs, and windows, plays a critical role in energy efficiency, ventilation and occupant comfort. Upgrades should balance thermal performance, air tightness and moisture control to avoid unintended issues such as dampness or poor air quality.

You should:

- **take a holistic approach**: consider insulation, air tightness and ventilation together to maintain healthy indoor environments
- **plan any upgrades strategically**: when replacing windows, ensure the proposed solution supports ventilation, daylighting, thermal comfort and solar control in an integrated way
- **co-ordinate roof and wall upgrades** with other system upgrades to minimise disruption
- **address durability and maintenance**: choose materials and design solutions that provide long-term resilience against weather, dampness and general wear

When planning your overall approach to building fabric improvements, consider these specific enhancements:

- upgrade **brickwork** on a needs basis, planning incremental repairs such as repointing or replacing damaged bricks, fixing any damp issues and ensuring older brick facades are kept clean
- upgrade existing **cladding** where there is corrosion, coating breakdown or loose-fitting issues, recoating, over-cladding or replacing panels – use a specialist to ensure compliance with the relevant statutory requirements, including fire standards
- upgrade **render** if there are cracks, detachment or moisture issues by re-coating or replacing it, and consider adding insulation beneath new render to improve energy performance – the introduction of render in high-traffic and low-level areas should be carefully considered
- upgrade **flat roofs** where leaks or damage are present, considering overlay

membranes, new insulation or a full replacement – regular maintenance of outlets, joints and perimeter details will help prevent leaks and should always be prioritised, and the impact on ventilation and daylight should also be considered

- carefully consider **window replacement** if your windows are at the end of their lifespan, as their replacement must be supported with calculations carried out by a suitably qualified professional to ensure the required ventilation rates are achieved – a good design will ensure spaces are adequately ventilated and lit, and reduce overheating

The benefits of this approach include:

- improved energy efficiency and reduced costs: high-performance building fabric reduces heat loss, which helps reduce heating bills
- enhanced comfort and wellbeing: the right balance of ventilation and insulation can create healthy and stable indoor conditions for learners and staff
- prevention of dampness and mould risk: integrated design of building fabric and ventilation improvements help avoid moisture build-up and protect structural integrity
- future-proofing your estate: durable, efficient building fabric reduces costs over the longer term and supports resilience

Appendix B – internal finishes and fittings

Refurbishing the inside of your school or college building requires a structured approach that considers:

- condition
- suitability
- viability

Upgrades should balance durability, accessibility and comfort to create inclusive and sustainable environments that meet the needs of all users.

You should:

- **take a holistic approach**: evaluate finishes and fittings for safety, accessibility and usability, ensuring alignment with the principles set out in DfE's education estates strategy
- **consider sustainability**: retain, repair and refresh existing finishes where possible
- **plan upgrades strategically**: distinguish between maintenance and full refurbishment, ensuring any replacement contributes to long-term resilience

and adaptability

- **address durability and maintenance**: select materials that can withstand wear, impact and moisture in the long term, while also supporting learner needs

When planning your holistic approach, you should consider upgrading:

- **wall finishes**: if walls are damaged, unsafe or fail to meet hygiene needs, replacements should be durable and easy to clean, especially in high-traffic areas – to improve comfort, reduce sensory overload and support special educational needs and disabilities (SEND) requirements, consider acoustic panels, the surface reflectance of finishes, muted colours and anti-glare paints
- **floor finishes**: if floors present trip hazards, have uneven surfaces or are difficult to clean, replacements should be slip-resistant, resilient to chemicals and heat, appropriate for high levels of movement and suitable for wet-foot use – SEND considerations might include consistent tonal contrast to support visually impaired learners and materials that reduce noise transmission, and avoiding highly patterned or glossy surfaces that may trigger sensory discomfort
- **suspended ceilings**: if tiles are stained, sagging or fail fire-safety requirements, replacements might include high-performance acoustic tiles to improve speech intelligibility and inclusion, reduce reverberation and help create calmer teaching environments
- **toilets, changing rooms and showers**: if they fail statutory requirements or user needs, replacements should use robust and hygienic materials, and have reliable waterproofing and good ventilation – consider anti-slip flooring, accessible cubicles, adjustable rails, colour contrast for fixtures, and improved drainage to enhance safety, inclusivity and ease of maintenance
- **kitchen and food preparation areas**: if they fail hygiene, safety or accessibility standards, consider non-porous and easy-to-clean surfaces, clear zoning, quieter systems and layouts that support SEND requirements

The benefits of this approach include:

- improved accessibility and inclusivity: well-designed finishes and fittings create environments that support all learners, including those with SEND
- reduced long-term costs and carbon impact: retaining and refreshing finishes where possible lowers refurbishment costs and supports sustainability goals
- future-proofed interiors: durable, adaptable materials and layouts ensure spaces remain functional and suitable for your school’s or college’s needs

Appendix C – mechanical, electrical and public health services

Heating systems

A fully operational heating system is critical to maintaining an operational school or college. Heating can be a significant contributor to energy bills and carbon emissions, so it is important to take a strategic approach to system improvements, to support:

- long-term sustainability
- cost efficiency
- carbon reduction

You should:

- **assess the whole system, not individual components**: review all components together to identify opportunities for efficiency that can be planned and integrated, rather than making isolated replacements – assess boilers, radiators, controls and building fabric (for example, the insulation in your walls)
- **plan for low-carbon heating solutions**: when replacing fossil-fuel heating systems such as gas boilers, consider installing heat pumps or a hybrid heat-pump system, which can be more economical – a hybrid system is where a heat pump is supplemented by an electric or gas boiler.
- **align upgrades with building improvements**: as heat pumps typically operate at lower temperatures than gas boilers, your existing radiators may be undersized for a heat-pump system and may need to be replaced – a hybrid system will likely be more suitable if they are not being replaced, and you can reduce heat loss through improved insulation or window replacements.
- **evaluate infrastructure readiness**: if you are considering a heat-pump solution, ensure your electrical infrastructure has adequate capacity and is suitable – there may be future costs and delays if this not evaluated early on
- **embed controls and zoning**: to reduce unnecessary energy usage, match heating demand with building use – recommission existing controls, if possible, or integrate modern control systems

The benefits of this approach include:

- reducing your carbon footprint and meeting sustainability goals: switching to a low-carbon heating solution can contribute to decarbonisation
- improving energy efficiency and helping keep costs under control: modern heating systems with intelligent controls reduce wasted heat and energy
- creating a comfortable environment for learning: better temperature control means healthier, more consistent conditions for staff and learners
- future-proofing your estate: upgrading earlier can reduce reliance on fossil fuels and minimise possible future disruptions

Refer to the energy-efficiency guidance on managing your heating as you plan your strategy.

Domestic hot and cold water systems

Water systems play a vital role in health, safety, and operational efficiency across school and college estates. When planning upgrades or improvements, it is important to take a holistic approach that considers:

- energy use
- water quality
- resilience

You should:

- **review your system and its condition**: assess how your hot and cold systems are connected, their age, and whether the distribution of outlets meets current and future needs
- **plan for energy-efficient and low carbon solutions**: when replacing gas-fired or oil-fired boilers, you should consider alternatives that reduce energy consumption and emissions – for example, a low-carbon heating source such as a heat pump
- **optimise water storage and usage**: make sure that water storage tanks are appropriately sized to balance resilience with water turnover
- **integrate intelligent control systems and water-saving devices**: consider installing timers, flow restrictors and automated controls to reduce the unnecessary use of water

The benefits of this approach include:

- improved health and safety: properly managed water storage and increased turnover reduce the risk of contamination and help maintain good water quality
- reduced energy and water consumption: efficient systems and controls can lower operational costs and environmental impact
- enhanced resilience and reliability: well-designed systems ensure there is a consistent, reliable supply during peak demand
- long-term benefits: strategic improvements reduce maintenance and help avoid costly reactive interventions.

Refer to managing your domestic hot water guidance as you plan your strategy.

Renewable-energy generation

Renewable-energy generation can be an important part of your estate's decarbonisation. Integrating renewables, such as solar (also known as photovoltaic) panels should be planned strategically to make sure that what is being proposed is right for your site. For example, if there are local grid export limits in place within your school's or college's postcode, a smaller amount of renewable-energy generation may be more suitable.

You should:

- **evaluate your site's suitability and structural integrity**: assess roof condition, orientation and lifespan to ensure that any proposed installations are safe, cost-effective and will not require premature removal
- **integrate the installation of renewables into your wider estate strategy**: align installations with other energy-efficiency measures, such as future electrification plans for heating
- **plan for maintenance and access**: ensure there is safe and practical access for cleaning and servicing, so that system performance can be maintained
- **use accredited installers**: appoint only professionals certified by the Microgeneration Certification Scheme to guarantee compliance, quality and accurate energy-yield predictions
- **consider grid connection and export opportunities**: review your energy use profile and tariff arrangements to ensure financial returns and carbon savings are maximised

The benefits of this approach include:

- reduced carbon emissions: on-site renewable-energy generation directly contributes to the decarbonisation of your estate
- reduced energy costs: solar (photovoltaic) panels can help offset some of your electricity consumption costs
- educational value: visible renewable-energy installations can help promote environmental awareness and be integrated into teaching

Refer to the plan your strategy for renewables guidance as you plan your strategy.

Mitigating overheating and improving ventilation

Effective ventilation and thermal comfort are essential for healthy, productive learning environments. Poor air quality and overheating can impact wellbeing, concentration and safety. Addressing these issues requires a co-ordinated approach that considers:

- building design
- environmental conditions

- operational practices

While you are developing your long-term estates strategy, there are immediate measures that you could implement, such as:

- developing a heatwave management plan
- adapting uniform policies
- incorporating regular water breaks

Guidance on immediate measures you can implement during hot weather and heatwaves is available

You should:

- **adopt a whole building approach**: integrate ventilation improvements with shading, glazing upgrades and insulation to balance air quality, temperature and acoustics, ensuring that, where external canopies are incorporated, they do not increase overheating or reduce the ventilation of any adjoining spaces
- **monitor indoor air quality** to inform decisions: use carbon dioxide (CO2) sensors to identify poorly ventilated spaces so you can target interventions effectively
- **plan for mechanical or hybrid (a combination of natural and mechanical) systems** where natural ventilation is not sufficient: evaluate the building and its usage to determine what might be most effective
- **reduce solar heat gain strategically**: incorporate external shading, tree planting and glazing upgrades to limit overheating and improve user comfort
- **integrate ventilation with energy efficiency and sustainability goals**: where upgrades are planned, ensure improvements are complementary and not contradictory to other goals – for example, improving the air tightness of the building without providing adequate ventilation can increase the risk of condensation and poor air quality

The benefits of this approach include:

- improved health and wellbeing: adequate ventilation reduces contaminants and supports alertness, concentration and overall comfort
- improved learning environments: managing overheating and air quality creates safe and comfortable conditions for learners and staff
- reduced energy demand and operational costs: a strategic approach to ventilation and shading can limit reliance on mechanical cooling
- enhanced resilience to climate change: preparing for hotter summers helps ensure your building remains safe and functional

Lighting

Lighting plays an important role in energy efficiency and carbon reduction, and in creating effective learning environments. Approach the upgrade to lighting systems strategically to maximise savings, improve comfort and support sustainability goals.

You should:

- **transition to energy efficient lighting**: replace any outdated fluorescent lighting with light-emitting diode (LED) lighting
- **integrate automatic lighting controls**: controls such as timeclocks, passive infrared (PIR) and daylight sensors can be integrated into your building management system
- **ensure lighting quality and consistency**: consider colour rendering and uniformity to maintain visual comfort and support learning
- **consider external lighting**: use motion sensors to ensure lighting is not left on permanently overnight
- **consider electric lighting alongside daylight**: prioritise daylight where possible
- **co-ordinate upgrades**: align lighting changes with electrical infrastructure upgrades and daylight design

The benefits of this approach include:

- reduced energy costs and carbon emissions: use of daylight, LED lighting and automated controls can lower electricity consumption and operational costs
- improved learning environments: high-quality lighting that prioritises daylight and enhances visibility, comfort and concentration for learners and staff

Refer to the guidance on managing your lighting as you plan your strategy.

Electrical infrastructure

Electrical systems are essential to keeping buildings safe and running efficiently.

Upgrades should be approached strategically to:

- ensure compliance
- enable future technologies
- maintain resilience

You should:

- **assess the condition of your electrical infrastructure**: identify if there are any life-expired components or safety risks

- **plan for future energy demands**: ensure capacity for low-carbon technologies, such as heat pumps, solar (photovoltaic) panels and electric-vehicle charging as part of your long-term estates planning
- **integrate upgrades**: co-ordinate electrical works with heating, lighting and renewable-energy technology installations to minimise disruption and ensure your investment is being used optimally
- **prioritise safety and reliability**: maintain robust fire detection, emergency lighting and security systems alongside core electrical infrastructure

The benefits of this approach include:

- regulatory compliance and reduced risk to health and safety: regular inspections and planned upgrades protect against electrical hazards while meeting statutory requirements
- support for decarbonisation and electrification: adequate capacity is essential for integrating low-carbon energy-generating technologies
- improved operational resilience: reliable electrical systems maintain critical services such as lifts, alarms and information technology (IT) systems

Control systems

Control systems, including building management systems, are essential for optimising energy performance and maintaining comfortable, safe environments. Effective use and integration of controls can deliver significant efficiency gains without major capital investment.

You should:

- **review and optimise your existing control settings** to ensure heating, ventilation and lighting schedules align with occupancy patterns, avoiding any unnecessary energy use
- **ensure controls and building information are accessible and useful** to users
- **employ a controls specialist** to periodically recommission metering and control systems and check sensor calibration
- **integrate controls upgrades** when replacing heating or ventilation systems to ensure compatibility and optimised performance
- **train and maintain staff system awareness** so staff understand how to use the controls effectively to sustain energy-saving and comfort

The benefits of this approach include:

- reduced maintenance and improved usability: robust, usable controls and building information with simple interfaces help users

- reduced energy costs and carbon emissions: optimised controls can prevent energy consumption when it is not needed without any major infrastructure changes
- improved learning environments: automated controls help maintain consistent conditions for learners and staff
- improved building performance and resilience: accessible controls reduce the risk of system failures and support proactive maintenance

Drainage

Effective drainage systems are essential for:

- maintaining hygiene
- preventing structural damage
- ensuring the smooth operation of school and college estates

Issues often arise from aging infrastructure or poor maintenance, so a proactive, strategic approach is essential.

You should:

- **conduct a drainage survey**: identify any blockages, structural defects or capacity issues before planning any works
- **integrate upgrades**: consider enhancements to the landscape or external surfaces to optimise costs and minimise disruption
- **plan for resilience**: ensure that systems meet current standards for water waste management and aim to reduce the risk of contamination and flooding
- **adopt preventative maintenance practices**: implement regular inspections and cleaning schedules to avoid costly emergency repairs and operational downtime
- **consider and implement sustainable drainage solutions** where possible: explore options such as permeable surfaces or nature-based sustainable drainage systems (SuDS) to manage water close to the source and reduce pressure on drainage systems

The benefits of this approach include:

- protecting health and safety: proper drainage prevents foul odours, contamination and hygiene risks in kitchens and communal areas
- minimising structural damage: addressing issues early reduces the risk of leaks, flooding and costly repairs
- supporting climate resilience: drainage solutions can help manage heavy rainfall and reduce environmental impact

Appendix D – outdoor environment

Nature-based solutions harness natural processes to address challenges such as climate change, biodiversity loss and water management, while creating healthier, more engaging environments for learning.

When enhancing landscape features across school or college estates, nature-based solutions should be considered as part of a long-term, integrated approach to sustainability and resilience.

You should:

- **integrate green infrastructure into estate planning**: incorporate trees, planting areas and permeable surfaces into site layouts to reduce heat, manage water, improve air quality and enhance the outdoor soundscape
- **prioritise multi-functional spaces**: design outdoor areas that support learning, play, biodiversity and climate adaptation simultaneously
- **enhance connectivity and ecological value**: link green spaces across the estate to create wildlife corridors and improve ecosystem health
- **replace hard, heat-absorbing surfaces with climate-responsive materials**: use light-coloured, non-synthetic, permeable materials to reduce heat retention and surface water runoff
- **embed sustainable drainage features**: include rain gardens and swales (shallow, planted ditches) to hold water only during major flood events, and incorporate other nature-based SuDS to naturally manage rainfall and reduce flood risk

The benefits of this approach include:

- improved thermal comfort: shaded, light-coloured materials and vegetated areas can help cool buildings and outdoor spaces, potentially lowering reliance on mechanical cooling
- improved external soundscape: reduced noise pollution and quieter spaces
- increased resilience to extreme weather: natural drainage systems and permeable surfaces help to reduce flood risk and manage heavy rainfall
- enhanced wellbeing and educational outcomes: access to nature-rich environments supports mental health, physical activity and outdoor learning opportunities
- long-term cost and maintenance benefits: strategic landscape features reduces future retrofit costs and supports compliance with climate adaptation policies

Good-practice guidance for enhancing the external areas of your estate could be incorporated into your strategy.

Appendix E – technical specialists

For moderate- to high-budget interventions to be successfully implemented, you should engage with design teams and contractors with the right expertise, experience and commitment to sustainability.

The principles in this appendix act as a guide to procurement.

Define scope and objectives

Clearly set out the intended outcomes. For example, align your long-term estates plan to:

- reducing emissions
- creating healthy and productive settings
- enhancing the outdoor environment
- providing safe and supportive environments

Survey considerations

Effective estates planning relies on understanding:

- the performance and condition of the buildings and its surroundings
- the needs and experiences of its users

To build a comprehensive picture of your estate, consider the following surveys and data sources:

- information contained in climate action plans
- suitability and inclusivity assessments or reviews
- energy-consumption data from meter readings
- building-fabric information from condition data or initial visual surveys
- occupant assessments, using questionnaires or direct feedback
- thermal-imaging cameras (which can be hired from local interest groups or charities)
- detailed condition surveys (likely to require specialist input)
- heating effectiveness, which can include references to energy use, heating performance and user feedback (may require specialist input)

- ventilation and draughts from user feedback (may require specialist input such as a smoke test or full building performance test)
- moisture assessment (likely to require specialist input)
- air-quality assessment, using internal monitors (likely to need specialist input)
- acoustic noise surveys, using a hand-held instrument (which can be hired or may require specialist input)

Prioritise specialist expertise

You should aim to appoint specialists with experience in assessing and upgrading existing school or college infrastructure.

Use appropriate expertise for:

- **landscape design and nature-based interventions**, or for specific flood risk and floodwater management – this may include:
  - urban-greening charities
  - landscape architects
  - contractors familiar with delivering nature-based solutions
- **mechanical, electrical and public health engineering**, ensuring consultants have proven experience in:
  - optimising building services for energy efficiency
  - mitigating against overheating
  - integrating low-carbon technologies within operational educational environments
- **architectural services**, ensuring that any appointed practice or architect is skilled in adapting existing school or college facilities, with expertise in:
  - improving the building fabric
  - designing a package of phased works that minimise disruption to teaching
- **structural engineering**, ensuring that any appointed engineers are equipped for the challenge of assessing ageing school or college buildings, and can recommend effective and safe improvements
- **acoustics**, ensuring that specialists have educational expertise
- **delivery**, ensuring appointed contractors have a demonstrable track record in:
  - implementing interventions to existing operational buildings
  - managing works on occupied sites
  - co-ordinating multiple disciplines

- meeting safeguarding and safety requirements
- delivering sustainable, low-carbon upgrades with minimal disruption to learning
- full-scale refurbishment works that are fully compliant with the S25 technical manual
- if relevant, redevelopment that includes a building being transformed to provide a different functionality
- works that require whole buildings to be closed and emptied of their contents and alternative spaces to be made available

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