EDUCATION

OUR BUILDING SERVICES EXPERTISE

Department for Education (DfE) framework
and Output Specification

EDISON PRIMARY SCHOOL, HOUNSLOW

LEADING MINDS

SOLVING COMPLEXITY

RPS consultants and service providers define, design, and manage projects that create shared value in a complex, urbanising and resource-scarce world.

Our planners, designers, engineers, environmental consultants and project managers use deep expertise to make complex easy for our clients.

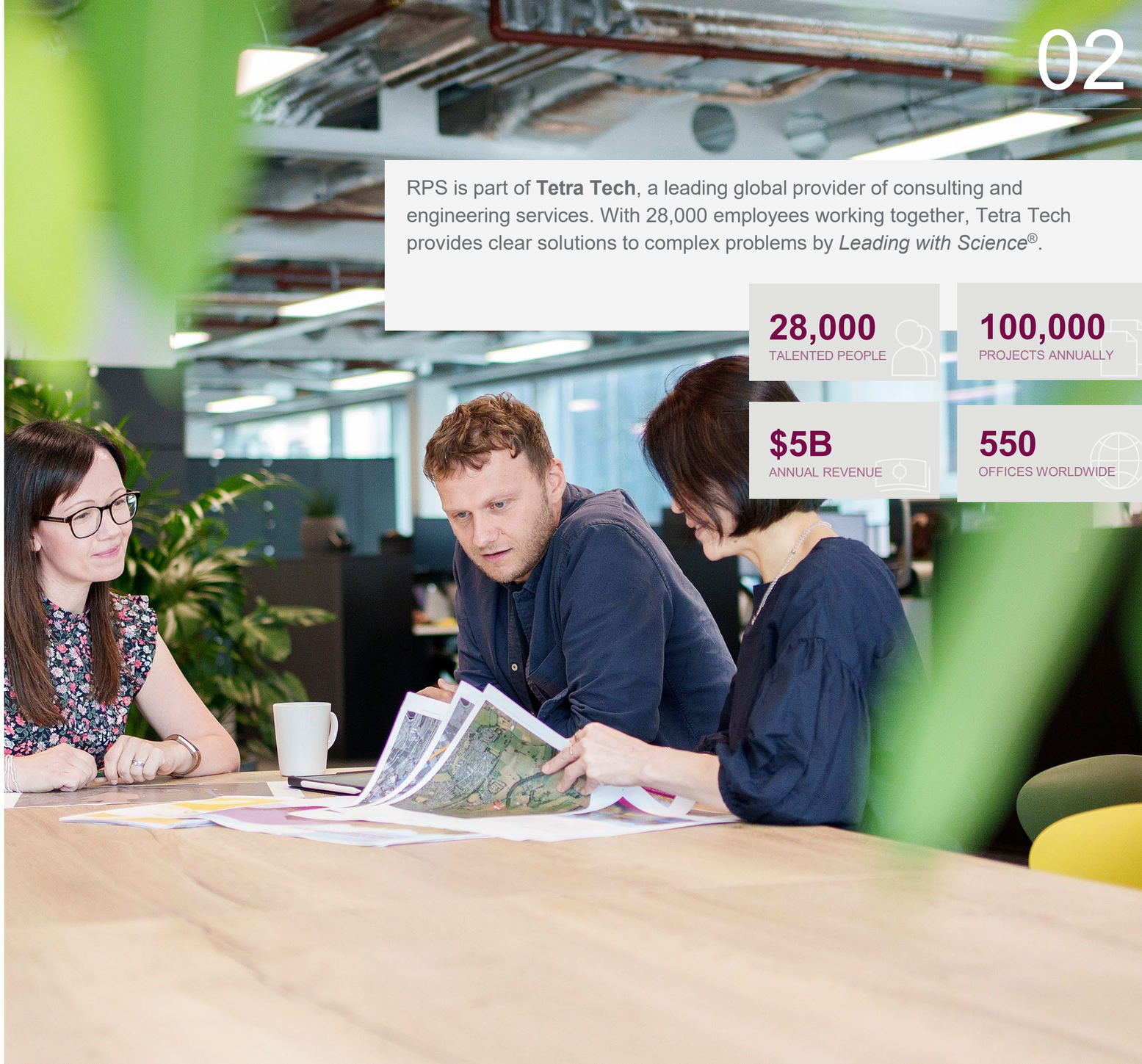
RPS IN THE UK & IRELAND

2,500
TALENTED PEOPLE

44
OFFICES IN THE UK & IRELAND

12
SERVICE CLUSTERS

6
SECTORS



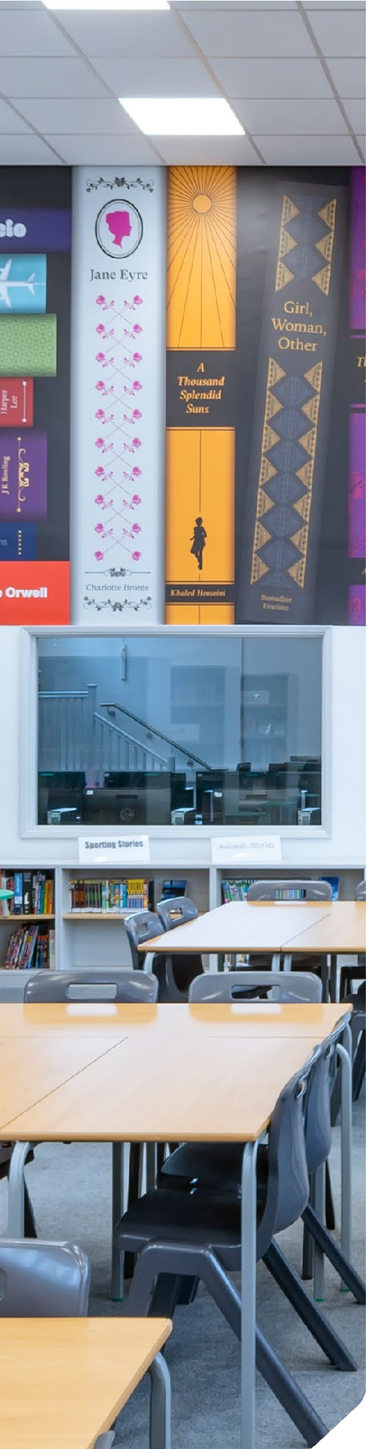
RPS is part of **Tetra Tech**, a leading global provider of consulting and engineering services. With 28,000 employees working together, Tetra Tech provides clear solutions to complex problems by *Leading with Science*®.

28,000
TALENTED PEOPLE

100,000
PROJECTS ANNUALLY

$5B
ANNUAL REVENUE

550
OFFICES WORLDWIDE



PINNER HIGH SCHOOL, MIDDLESEX

FUTURE READY
LEARNING ENVIRONMENTS

Value-engineered solutions to elevate building performance.

As M&E design partners we deliver optimum learning environments that are cost-effective, sustainable and DfE output specification compliant. Experienced across new build, extension and refurbishment, we're proud to support contractors and stakeholders to lay the foundation for a better tomorrow.

15+
YEARS' SCHOOLS EXPERIENCE

£500m+
OF CONSTRUCTION VALUE DELIVERED

200+
SCHOOLS DELIVERED IN THE LAST 10 YEARS

50+
PROJECTS DELIVERED THROUGH DFE FRAMEWORKS

OUR SCHOOLS PROJECTS ACROSS ENGLAND

Leveraging our extensive experience with DfE framework projects, we streamline the design process and accelerate project programmes.

BELVIDERE SECONDARY SCHOOL, SHROPSHIRE

We proactively refine our approach by continuously investing in research and development – making sure our designs stay ahead of evolving teaching methodologies and DfE design requirements.

We understand the need to balance cost and energy efficiencies, and we pride ourselves on value engineering at every stage.

Drawing on specialist expertise in net zero carbon design and advanced building performance modelling, we deliver pragmatic advice that helps our clients to navigate evolving challenges and achieve increasingly demanding sustainability targets.

“We build strong partnerships with contractors and key stakeholders to deliver cost-effective designs that enhance energy efficiency, thermal performance, and occupant comfort.”

OUR CORE SERVICES

- BREEAM assessment
- Building information modelling (BIM)
- Building performance evaluation
- Climate-based daylight modelling
- Embodied carbon assessment (WLC)
- Energy performance certificate (EPC)
- Energy reports
- Lighting design
- Mechanical & electrical (M&E) engineering
- Operational energy calculations
- Part L As-Built Simplified Building Energy Model (SBEM)
- Solar/PV design
- Sustainability statements
- Thermal comfort modelling
- Ventilation statements

PARTNERS ACROSS THE DESIGN, CONSTRUCTION AND DELIVERY PROCESS

RIBA STAGES

0-1 PREPARATION AND BRIEFING

Laying solid foundations

– We appraise Expression of Interest (EOI) and Invitation to Tender (ITT) packs provided by the DfE, highlighting any risks, helping to address ITT submission questions. We also provide support during bidders day.

2-3 COMPETITIVE BID STAGE

Navigating complex sustainability targets

– Collaborating with the entire project team, we review and develop compliant design solutions.

– We conduct thermal comfort and climate-based daylight modelling (CBDM) studies for sample rooms to validate concepts, perform initial operational energy calculations and design PV panels to determine if Net Zero Carbon in operation (NZCio) is achievable.

– At Client Engagement Meetings (CEMs) we present our designs, simplifying complex concepts into easy-to-understand, digestible information.

– We create the BIM model for the whole project lifecycle and guide the team to minimise embodied carbon in the design.

4 CONTRACTOR'S PROPOSALS (CP)

Coordinating optimised design

– We optimise our designs to meet BSRIA BG6 'coordinated generic design' standards for the final CP submission.

– By producing a developed energy model, conducting CBDM studies and thermal comfort analysis using a 2°C global warming scenario, we ensure compliance with DfE and Part L requirements.
We also advise on compliance for a 4°C scenario without altering the superstructure.

– We collaborate with the design team to deliver a clash-free design, provide the required Construction Operations Building Information Exchange (COBie) data, and maximise modern methods of construction (MMC) opportunities.

– To support planning, we produce energy reports, lighting designs, sustainability and ventilation statements. We complete the design stage **BREEAM assessment**, continue to guide on embodied carbon and undertake calculations as required by the DfE.

5-6 CONSTRUCTION AND HANDOVER

Ensuring your aspirations are met

– During construction, we're on hand to ensure the agreed energy and carbon targets are maintained.

– We ensure **BREEAM targets** are met, carry out site inspections to check the quality of installation and issue reports.

– We review witness testing and commissioning results, assess against the design performance targets and advise on fine-tuning for optimal performance.

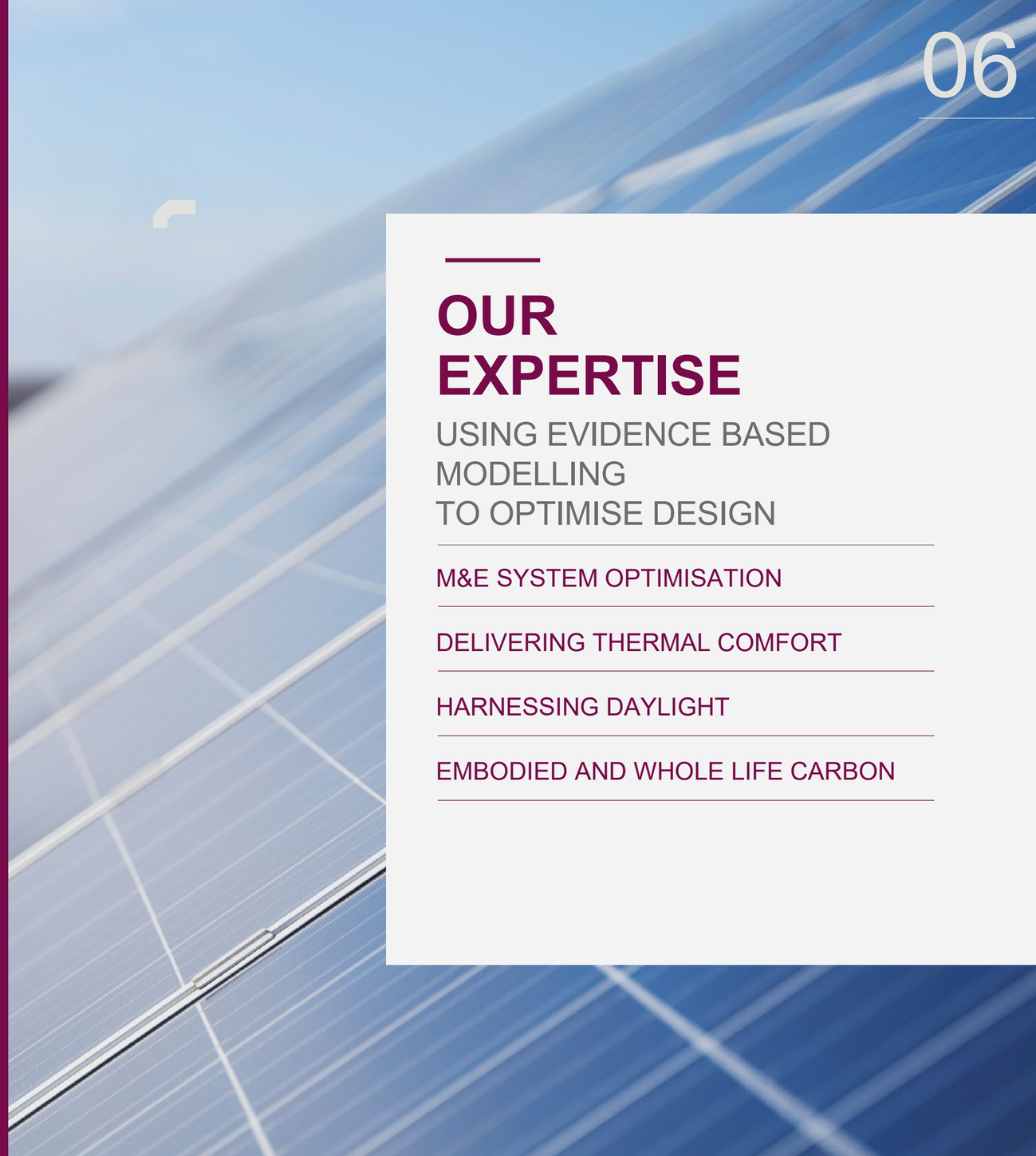
– We complete the Part L As-Built Simplified Building Energy Model (SBEM) and post-construction BREEAM assessment, and lodge the Energy Performance Certificate (EPC), and provide an Embodied Carbon Assessment to reflect the As-Built stage.

7 IN USE

Monitoring building performance

– We provide ongoing support post occupancy by assessing the actual performance against the design performance for the Building Performance Evaluation.

Specialist expertise designed to help you meet DfE standards with confidence



OUR EXPERTISE

USING EVIDENCE BASED MODELLING
TO OPTIMISE DESIGN

- M&E SYSTEM OPTIMISATION
- DELIVERING THERMAL COMFORT
- HARNESSING DAYLIGHT
- EMBODIED AND WHOLE LIFE CARBON

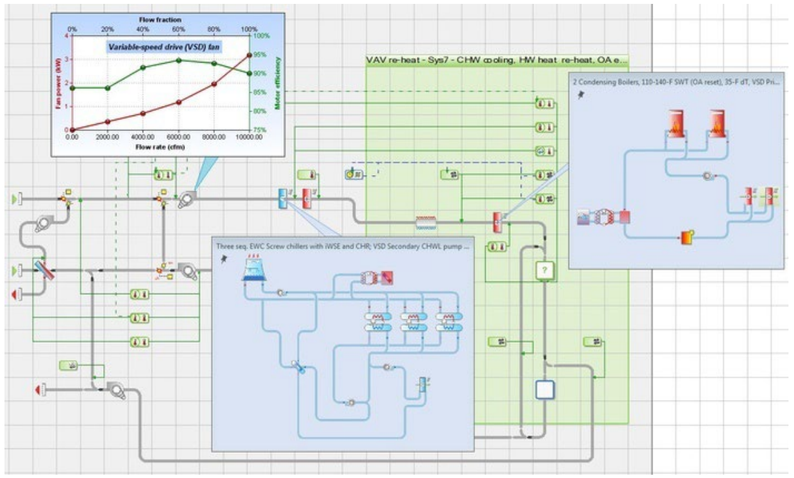
EXPERTISE

M&E SYSTEM OPTIMISATION

FINE-TUNING TO MAXIMISE PERFORMANCE

We deliver efficient engineering solutions to create reliable, energy-efficient learning environments and enhance the educational experience. Our designs include:

- Heat recovery solutions to capture waste heat, optimising heating and hot water systems
- Ventilation systems with low total system pressure losses and high-
- efficiency fans to ensure high efficiency within occupied zones
- Daylight and occupancy sensing controls to reduce artificial lighting use
- Optimised ventilation and heating design through complex systems modelling of the heating controls, individual room controls, zoning mechanisms, movement sensors, photosensors, timers and metering devices to enhance overall energy efficiency



System optimisation using IES Apache HVAC

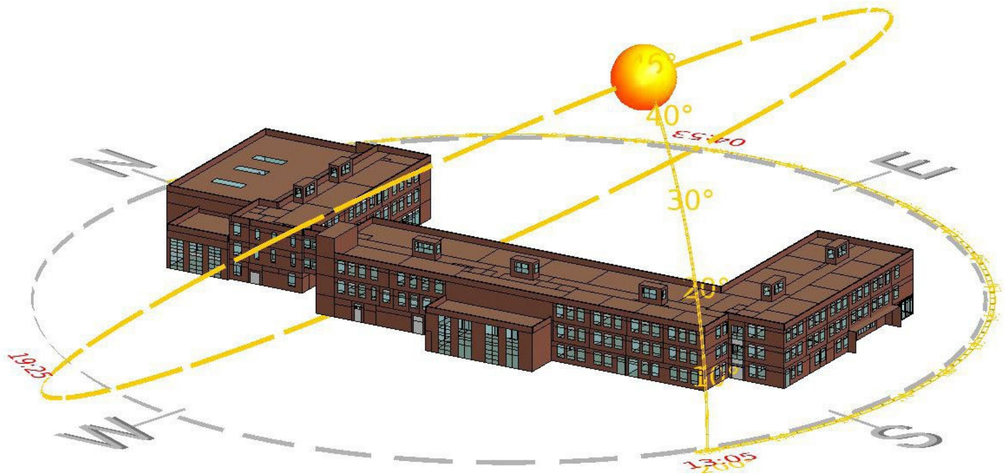
> *We employ complex thermal modelling for current weather conditions and future global warming scenarios.*

DELIVERING THERMAL COMFORT

PRIORITISING STAFF AND PUPIL WELLBEING

Our holistic approach to school design delivers sustainable and climate resilient buildings that prioritise student wellbeing and performance by:

- Considering not only the current occupant comfort but also future global warming scenarios to ensure schools remain comfortable and can adapt to changing climates
- Using complex thermal and dynamic simulation energy modelling to analyse energy consumption and indoor comfort conditions across the design stages
- Partnering with equipment suppliers to help improve their products and controls to reduce CO_2 emissions and energy use
- Assessing and incorporating passive design strategies such as solar shading, thermal mass and natural ventilation



HARNESSING DAYLIGHT

PRIORITISING NATURAL LIGHT AND ENERGY SAVINGS

We conduct daylight and solar studies early in the design process to optimise opportunities. Using climate-based daylight modelling, we help meet certification requirements and achieve better educational outcomes. Our designs:

- Optimise the use of natural light and reduce dependence on artificial lighting to lower energy consumption
- Enhance visual comfort by ensuring excellent lighting levels with high uniformity
- Reduce glare and overheating to support high productivity and wellbeing
- Combine all these elements to achieve the most efficient floor-to-ceiling heights, window heights and fenestration strategies

> *We enhance classroom design using climate-based daylight modelling.*

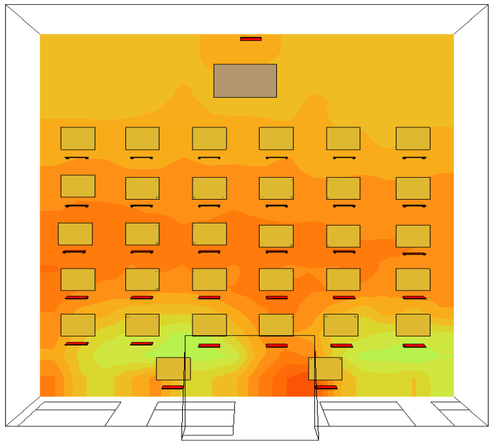
EMBODIED AND WHOLE LIFE CARBON

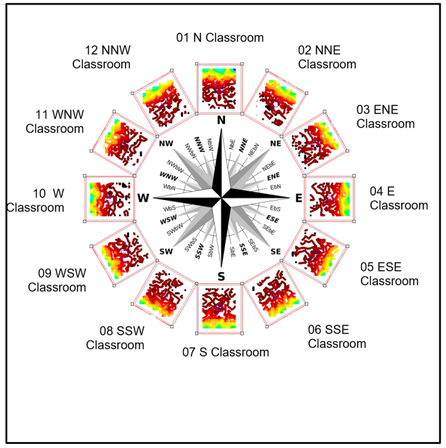
GOING BEYOND COMPLIANCE FOR CARBON NEUTRALITY

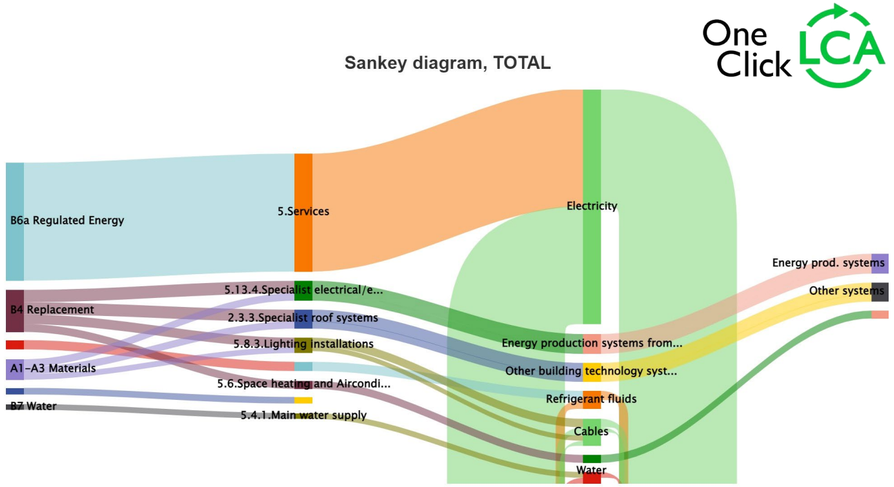
DFE COMPLIANT • DFE COMPLIANT • DFE COMPLIANT • DFE COMPLIANT • NOW, AND IN THE FUTURE

Our integrated solutions, including embodied carbon and life cycle assessments (LCA), are tailored to meet evolving standards and diverse project needs, from BREEAM certification to aligning with Greater London Authority (GLA) or local council requirements. We:

- Deliver flexible and customisable services from project inception to completion to achieve client aspirations
- Ensure precision in measurements and utilise data from IES/Revit modelling to pinpoint opportunities for enhancement and drive sustainable outcomes
- Provide comprehensive reports with actionable recommendations for carbon reduction across the project lifecycle
- Collaborate with the whole design team to explore solutions to meet the DfE's future Gen Zero embodied carbon targets of 525 kgCO2/m2 (excluding sequestration) and 325 kgCO2/m2 (including sequestration)







A SNAPSHOT OF

OUR PROJECT EXPERIENCE

We understand that every school has its own needs. Working across primary, secondary and SEN, we guide our clients through each development stage, shaping tailored solutions to deliver purpose-led designs.

THE QUEENS SCHOOL, LONDON

01

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04

PRIMARY SCHOOLS

NEW BUILD

1 / EDISON PRIMARY SCHOOL

PROJECT VALUE: £6m

LOCATION: Hounslow, London

TYPE: A three-storey school for 630 pupils, under the DfE's PSBP2 regional framework. Designed to deliver daytime comfort conditions, internal overheating compliance, and a 35% betterment on AD Part L with 192m2 of photovoltaic panels installed on the roof; reducing CO_2 emissions by 13 tonnes yearly.

NEW BUILD AND REFURBISHMENT

2 / SUTTON BONNINGTON PRIMARY SCHOOL

PROJECT VALUE: £6.6m

LOCATION: Loughborough, Leicestershire

TYPE: A block replacement set for completion in 2025, procured under the DfE's CF21 framework.

We designed the new school to achieve NZCiO at handover and delivered a two-grade Energy Performance Certificate (EPC) improvement for the refurbishment. The new block also achieved overheating compliance, a passive crossflow ventilation strategy to minimise energy consumption, and a BioSolar green roof solution.

MULTI-PHASED

3 / THE QUEENS SCHOOL

PROJECT VALUE: £6.6m

LOCATION: Kew, London

TYPE: A three-storey 2FE school for 420 pupils with 26 nursery places, procured under the ESFA PSBP framework.

A fully mechanically ventilated building that complies with GLA's London Plan that minimised disruption to daily operations. We achieved a 35% improvement in Part L regulations by incorporating photovoltaic (PV) panels and received a BREEAM 'Very Good' rating.

NEW BUILD

4 / BURLEY FIELDS PRIMARY SCHOOL

PROJECT VALUE: £8m

LOCATION: Burleyfields, Stafford

TYPE: A new two-form entry school for 420 pupils, with 26 nursery places.

Serving a new housing development due for completion in 2025, the 2,364m² school is designed to meet current and future climate change scenarios with classrooms incorporating a hybrid ventilation heat recovery system with cross-flow ventilation and heat recovery units within ceiling voids.

SECONDARY SCHOOLS

NEW BUILD

1 / HIGHAMS PARK SCHOOL

PROJECT VALUE: £32.7m

LOCATION: Highams Park, London

TYPE: A seven-block replacement project under the DfE's MMC framework implemented through a complex phasing strategy.

Designed to achieve NZCiO at handover, we ensured compliance with output specification and The London Plan 2021 policy requirements. We adapted HVAC solutions and incorporated a Ground Source Heat Pump (GSHP) heating system to enhance overall efficiency.

NEW BUILD

2 / ASH HILL ACADEMY

PROJECT VALUE: £5.5m

LOCATION: Doncaster, South Yorkshire

TYPE: A sports block replacement project, procured through the DfE's CF21 framework.

Detailed energy modelling for the HVAC design, PV panels to offset energy consumption and demonstrate NZCiO compliance, and overheating assessment which provided full compliance using passive design solutions. We also fulfilled BREEAM Assessor duties, achieving a 'Very Good' rating.

NEW BUILD

3 / BELVIDERE SECONDARY SCHOOL

PROJECT VALUE: £16m

LOCATION: Shrewsbury, Shropshire

TYPE: A 6,265m² school for 900 pupils with additional SEN classrooms and facilities being delivered on the DfE's MMC framework.

Our design promotes a passive approach with stack ventilation chimneys for natural cross ventilation, optimised building fabric through increased insulation levels, modular components to minimise thermal bridges, and PV arrays on the roof and external canopies to provide renewable energy and shelter.

REFURBISHMENT

4 / PINNER HIGH SCHOOL

PROJECT VALUE: £11.7m

LOCATION: Pinner, Middlesex

TYPE: Extension and alteration of the existing building over several phases, funded under the DfE's EFSA scheme.

The 9,794m² new development for 1,200 pupils has been designed to adopt passive and active measures, including new mechanical ventilation systems and LED lighting to provide a comfortable, vibrant learning environment.

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04

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SEN SCHOOLS

NEW BUILD

1 / PINEWOOD SCHOOL

PROJECT VALUE: £22m

LOCATION: Ware, Hertfordshire

TYPE: A whole-school replacement project, procured through the DfE's CF21 framework, accommodates 192 pupils with a hydrotherapy pool and changing facilities.

The new sports block was designed to achieve NZCiO through detailed energy modelling, Energy Use Intensity calculations and the HVAC design. By utilising passive design solutions, we achieved compliance with the specific SEN overheating standards.

REFURBISHMENT

3 / PHOENIX SCHOOL

PROJECT VALUE: £12m

LOCATION: Bow, London

TYPE: Refurbishment of a listed school building of 2,750m² with a new build element, approximately 838m².

The existing building's English Heritage status meant external works were heavily restricted. To comply with overheating requirements outlined in CIBSE TM52, existing 'sash' windows were replaced with identical units, requiring calculation of the effective free area for each window to ensure manufacturers could meet specifications.

NEW BUILD

2 / WOODBRIDGE ROAD ACADEMY

PROJECT VALUE: £4.1m

LOCATION: Suffolk, Ipswich

TYPE: A purpose-built facility for up to 64 students with complex communication and interaction difficulties, delivered via the DfE MMC1 framework.

Our energy strategy involved high insulation standards - beyond building regulations requirements - with energy-efficient heating and lighting systems. We designed the elevational treatment, fenestration, and ventilation system to limit break-in noise and provide fully compliant indoor ambient noise levels.

NEW BUILD

4 / GILBERT WARD ACADEMY

PROJECT VALUE: £5.5m

LOCATION: Blyth, Northumberland

TYPE: A two-storey building constructed on a brownfield site and procured through the DfE's MMC1 framework.

Designed to achieve Passivhaus Classic standards, we prioritised environmental design and energy savings measures through a fabric-first approach and cascade ventilation. We met council energy policies, with air-source heat pumps reducing CO_2 by 19.7%.

PROUD TO BE CREATING

LASTING SOCIAL VALUE

We are committed to creating a meaningful impact on schools, pupils, communities and environments in the work we do.

Our five-pillar social value framework guides our business initiatives and operations, ensuring that each project promotes positive and sustainable growth.

IMPROVING THE ENVIRONMENT

Our Building Performance team members offered their technical skills to the charity CATCH Leeds on a pro-bono basis. They delivered an in-depth decarbonisation study with guidance on a pathway to achieve Net Zero Carbon in Operation. Our findings supported the charity to secure a £28,000 grant from Leeds City Council for the installation of PV panels.

As volunteers, we actively participate in community projects, such as revitalising the local environment and ecosystem with Ouseburn Trust in Newcastle.

PRIORITISING HEALTH AND WELLBEING

We helped create a one-mile path at Greenholm Primary School as part of the Department of Education's 'Active Mile' campaign. Our volunteers led the redevelopment improvements of multiple allotments to enhance the school's sustainability and encourage healthy lifestyle choices for students.

CREATING SOCIAL EQUITY

We designed the Climate Careers Zone, a virtual learning experience that brings the future of our towns and cities to life, showcasing the skillsets and professions needed to help achieve net zero.

By collaborating with STEM Learning, our STEM Ambassadors have taken the Climate Careers Zone directly to schools across the UK, hosting interactive workshops with students aged between 12-16.

To empower the next generation, we provide apprenticeships, summer placements and work experience opportunities in Engineering within Building Services.

Scan to learn more about our building services engineering expertise:






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