Service guide
2022

Pollard Thomas Edwards

Sustainable design

Contents

01 Our approach to sustainable design

We embed sustainable design into everything we do, delivering practical energy efficient buildings at scale. We promote a ‘fabric first’ approach to low energy design, minimising reliance on costly or complex technologies, and increasingly our new homes achieve Passivhaus or zero carbon standards.

We are currently advising the UK Government on low carbon housing policy with the Building for 2050 project and continue to lead industry in the delivery of several largescale net zero development projects. In partnership with the Green Register and other industry leaders, we provide regular training in sustainable design for our staff, clients and collaborators.

PTE has an experienced team of environmental designers, certified Passivhaus designers and sustainability consultants who provide the following services and assessments: Passivhaus, BREEAM, daylight assessments, post occupancy evaluation, life-cycle carbon and energy assessments.

Environmental design is fundamental to our company vision of creating thriving sustainable places. As part of this aim, we are committed to ensuring that our projects go beyond the minimum performance requirements and are seeking to deliver best practice sustainable outcomes which meet the RIBA 2030 climate challenge. We are signatories of “Architects’ Declare” and as such we are committing to strengthen our working practices to create architecture and urbanism that has a more positive and regenerative impact on the world around us. As architects at the forefront of the climate change agenda, we are supporters of the following organisations and campaigns:

02 Sustainable design services

In order to ensure that our design proposals consider sustainability from the very start, we provide a wide range of environmental design services in house. Our experienced sustainability team can provide efficient, fast and reliable environmental analysis of our proposals. PTE provide the following services and assessments across all types of projects.

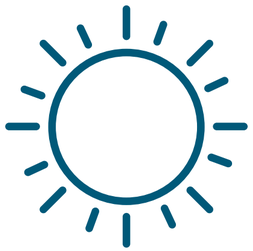
Sustainable design strategy and statement

BREEAM consultancy

Life cycle carbon and energy assessments

Passivhaus design (PHPP)

Daylight/sunlight calculations



Post Occupancy Evaluation

Sustainable design strategy and statement

Sustainability statement for Planning approval. Summary of the energy strategy, M/E outline, overheating, materials (toxicity and embodied carbon), ecology, transport, water, drainage, construction strategy.

Sustainable design strategy and statement (sustainability statements) reports are required for planning submission and outline the key local and national planning requirements that affect a development and how the design addresses those requirements.

RIBA Stages 1-3 - Planning requirement

CASE STUDY:
Fen Road and Ditton Fields, Cambridge

PTE has developed designs for Cambridge Investment Partnership to build 18 Passivhaus certified homes. These are spread across two small opportunity sites located within the city's suburban fringe.

Both sites will be 100 per cent affordable council houses. The designs use offsite timber frame construction and a kit of parts approach, resulting in the intelligent replication of components across each development.

Client: The Cambridge Investment Partnership

Services provided:
– PTE is providing architectural, sustainability and Passivhaus design services to RIBA planning Stage 3.

BREEAM consultancy

We carry out the BREEAM AP (Accredited Professional) service which is a requirement for 3 credits of BREEAM. The BREEAM AP needs to attend stage 1 meetings to advise on the best strategy for the project.

Most, if not all Councils will require BREEAM assessments for non-domestic buildings. London Boroughs require all new projects to target BREEAM Excellent.

RIBA Stages 1-6 – Required at all stages

CASE STUDY:
Virido, Cambridge (BREEAM Excellent)

This exemplar zero carbon development combines the very best in design and environmental sustainability, achieving Code for Sustainable Homes Level 5.

Within the broader masterplan of Clay Farm, the scheme created 208 new homes arranged in a grid of quads surrounding a new park at the heart of the site. Pollard Thomas Edwards provided a full service from concept to completion, including a 1 year post occupancy study with BPE that demonstrated no performance gap.

Client: Hill

Services provided:
– Sustainable Design strategy and statement
– Energy strategy
– Daylight/sunlight calculations

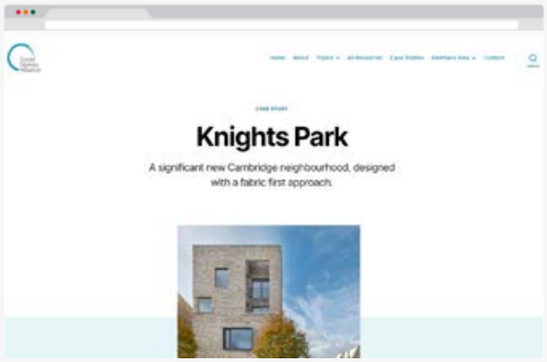
> **“ A shining example of how the public sector can lead excellence in quality design and sustainability.”**
>
> Cllr Kevin Price, Executive Councillor for Housing, Cambridge City Council

Life cycle carbon and energy assessments

Energy statements set-out the energy use and carbon savings of a development to meet the local and national requirements. The report highlights the fabric design performance, M&E specification, and low carbon technologies. These reports demonstrate net zero carbon performance. This includes Part L energy calculations, SAP calculations, U-values and Psi-Values.

All councils will have carbon reduction and net zero carbon targets to meet the climate emergency goals. Energy statements are used to demonstrate how the development achieves these targets.

RIBA Stages 2-3 - For planning submission



CASE STUDY:
Knights Park, Cambridge

Knights Park is a distinctive exemplar of a zero-carbon neighbourhood, providing 249 homes that extend the city in a sustainable way. The project is zero-carbon both in terms of its operational CO^2 and sitewide sustainable infrastructure. Part of Eddington, this is a truly "15-minute" walkable neighbourhood designed for a wide demographic.

The 249 homes have been designed fabric first and have ambitious energy targets, which meet Code for Sustainable Homes Level 5. With a raft of awards Knights Park is an impressive project with both sustainability and community in mind.

Client: Hill

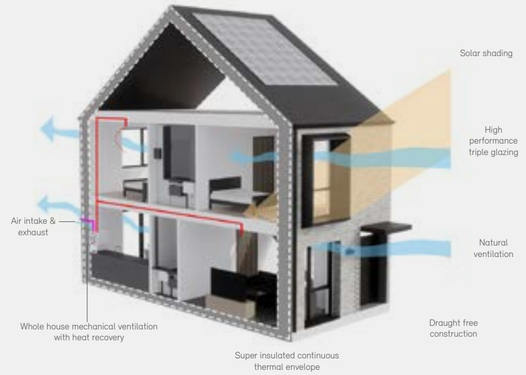
Services provided:
– PTE is providing architectural, sustainability services to RIBA planning Stage 3

Passivhaus design (PHPP)

Passivhaus is the leading international low energy and comfort standard for buildings. Passivhaus has been demonstrated as the foremost method of reducing energy use and carbon emissions from buildings in the UK, as well as providing high standards of comfort and building health.

Certified Passivhaus provides a verified way to reduce heating costs, provide healthy home, improve build quality and building longevity. Achieving Passivhaus certification is an important method for eliminating the performance gap.

RIBA Stage 1-5 - Commitment to Passivhaus should be part of design brief



CASE STUDY:
Woodstock North, Oxfordshire

PTE was appointed by Blenheim Estates to create a masterplan for 430 new homes over two sites in Oxfordshire and will also provide sustainable design consultancy for the homes. The homes will be seeking Passivhaus certification and are aiming for Net Zero carbon in operation.

Low carbon technologies will be implemented to help achieve the ambitious targets, including Air Source Heat Pumps, thermal store and PV solar panels for each home.

Client: Blenheim Estate

Services provided:
– Sustainable design strategy and statement
– Daylight/sunlight calculations
– Life cycle carbon assessment

“ Passivhaus certification is a core part of our design approach, and key to the project’s ambition to be Net Zero carbon. We have created a proposal that minimises both the carbon emissions of the individual homes and also the wider neighbourhood, by designing innovative parking barns with EV charging.”

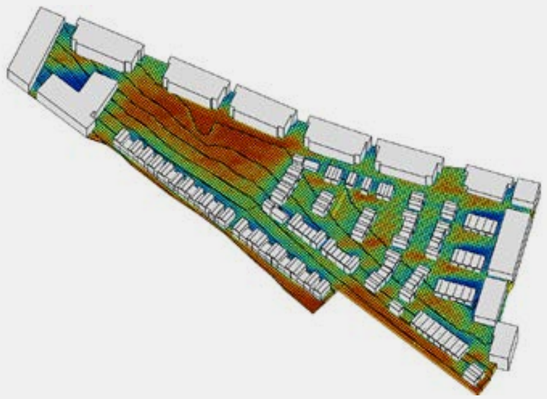
Tom dollard, Partner - Sustainability and Innovation

Daylight/sunlight calculations

Use modelling software to calculate average daylight factor (ADF) and Visible Sky Component (VSC), Annual Sunshine Hours and Amenity Sunlight to provide design information and report for planning.

Providing early-stage testing is important to highlight any potential concerns with the design when changes can be made with minimal effort. A full sunlight and daylight assessment will be required for planning inline with the BRE Site Layout Planning for Daylight and Sunlight guidance.

RIBA Stage 2 - Preliminary testing important
RIBA Stage 3 - Required for planning



CASE STUDY:
Canalside, Oxford North

Canalside at Oxford North, for client Hill, is a new residential neighbourhood that supports the new Innovation District at Oxford Northern Gateway.

Together with commercial, research and laboratory uses, within the larger masterplan, the homes at Canalside create a new local centre - a vibrant and successful extension to Oxford. The masterplan will provide homes, workspace and social spaces that support life and activity throughout the day and evening and enhance transport connections to the wider area.

Client: Hill Partnerships

Services provided:
– Daylight calculations
– Sunlight calculations

Post Occupancy Evaluation

Post Occupancy Evaluation (POE) is the process of obtaining feedback on a building's performance in use after it has been built and occupied. POE collects information on building and energy use and user satisfaction. PTE can lead an internal or external review of the project at RIBA stage 6 and 7. Our team can distribute and collate resident questionnaires and provide invaluable feedback for clients.

POE provide an important feedback loop for designers, facilities managers and clients. It should form part of the brief at RIBA stage 1, to allow an assessment of previously completed projects. POE allows occupiers/ users to provide feedback on how their homes/spaces are operating and report any issues that need to be addressed.

RIBA stages 6-7 – We recommend including POE in the brief at RIBA stage 1

CASE STUDY:
King Square, Islington

Pollard Thomas Edwards has worked closely with residents on the existing 1960s estate, to devise a scheme that delivers 140 new mixed-tenure homes, enhanced public spaces, a new community facility and upgrade to an existing nursery.

Phase 1, comprising 47 homes including 29 fully wheelchair accessible flats, completed in 2017, Phase 2 is on site.

Client: London Borough of Islington

Services provided:
– Resident interviews
– Design and site review

Get in touch...

Tom Dollard
Partner - Sustainability and Innovation

tom.dollard@ptea.co.uk
020 7336 7777

As partner of sustainability and innovation, Tom leads PTE's ever-evolving zero carbon culture providing project teams with training, support and inspiration. He is focused on practical, implementable solutions that ensure a building's in-use energy performance matches the design intent.

Tom is a director of the Good Homes Alliance, a member of the CIBSE homes for the future group and is on the steering group for the Green Register of Construction Professionals. He is a certified Passivhaus Designer, BREEAM and Code Assessor.

His work for the Zero Carbon Hub includes addressing the performance gap in the delivery of energy efficient homes. A second printing of Tom's best-selling 2018 book for RIBA, "Designed to Perform: An illustrated guide to delivering energy efficient homes" was published in October 2022.

Diespeker Wharf
38 Graham Street
London N1 8JX
T 020 7336 7777
mail@ptea.co.uk
@ptearchitects
www.pollardthomasedwards.co.uk

Pollard Thomas Edwards