



SUSTAINABILITY



calfordseaden

# ABOUT US

calfordseaden is an award-winning construction and property consultancy. Our comprehensive range of services cover chartered building and quantity surveying, project management, architecture, civil and structural engineering, mechanical and electrical engineering, sustainability and health and safety. Through our complementary and mutually supportive competencies, we provide our clients with a truly multi-disciplinary service through our six offices.

Our dedicated team of sustainability advisors includes Code for Sustainable Homes (CSH), HQI assessors, Low Carbon consultants and BREEAM: New Build, (NC), Refurbishment and Fit Out (RFO), and non-domestic schemes (including commercial, healthcare, multi-residential and education). The team offers standalone services and works collaboratively with our other professional disciplines, to ensure our clients always receive the best possible sustainability advice. We consider all aspects of sustainability, including social and environmental impacts, waste minimisation and energy efficiency, and assist organisations in improving quality and reducing costs while having a positive long-lasting impact.

calfordseaden has extensive experience in traditional construction, but is also a leading authority in the design and use of modern methods of construction, sustainable design and construction and renewable technologies. Our experience and constantly evolving expertise means we anticipate the needs of our clients and provide them with the best solutions, value for money and a flexible and innovative approach.



Architecture



BIM



Building  
Surveying



Civil & Structural  
Engineering



Clerk of Works



Employer's  
Agent



Health & Safety  
Risk Management



M&E Engineering



Project  
Management



Quantity Surveying



Rights of Light  
& Party Wall



Sustainability



## £2.3M 20 Fenchurch Street, London

### Client

CNA Hardy Insurance

### Duration

2014 (16 weeks)

### Value

£2.3m

### Services

M&E Traditional Design  
BREEAM Assessor

### Sustainability

BREEAM 'Excellent'

calfordseaden was appointed to provide M&E design and BREEAM assessor services for this project at 20 Fenchurch Street (the Walkie Talkie) which involved a fitting out approximately 39,000 m<sup>2</sup> of office accommodation from the shell and core status.

The project included full coordinated M&E services providing ventilation, fan coil air conditioning, extension of water services and drainage and provisions of fresh air.

Electrical services involved providing underfloor power, new LED lighting and lighting controls for general office areas and a high quality bespoke architectural lighting scheme for the client areas. Also the electrical included a full design of a CAT L1 fire alarm integrating into the main building system. We were also involved in coordinating the audio visual/media installation along with security and sprinklers.

For the mechanical elements we were also involved in extending the critical chilled water system from the landlord's services to the client's data communications room. The mechanical and electrical services also involved calfordseaden in the design of a high quality tele presence room which had a high degree coordination and design for acoustics, lighting and A/C.

Our work involved a fully coordinated design brief and full specification with the building achieving an excellent rating for BREEAM. We were also heavily involved in design development of the clients brief and developing the services in line with the landlord.

calfordseaden provided a fully coordinated design brief and full specification with the building to achieve an excellent rating for BREEAM. We were also heavily involved in the development of the design development to ensure that the client's brief was adhered to and the services were in line with the landlord's requirements.

calfordseaden undertook the BREEAM assessment to ensure that the building maintained its excellent status.



£168m Trinity Walk - Phase 1, 2 & 3, Woolwich

**Client**

Lovell

**Duration**

2015-2020

**Value**

£80m

**Services**

Mechanical & Electrical Engineering  
 Public Health Services  
 Code for Sustainable Homes  
 SAP  
 BREEAM  
 Site Monitoring

**Contract**

Traditional

**Funding**

Part GLA

Trinity Walk is the first phase of the Trinity Woolwich regeneration scheme which, alongside Trinity Rise (phase 2) and Trinity Park (Phase 3), will see 1,500 new, high-quality, mix tenure homes build over the next 12 years.

Trinity Walk is a striking new mixed-use development in Woolwich, Southeast London. The scheme delivers 332 one, two, three and four bedroom apartments and 25 houses in Phase 1. 352 one, two, three and four bedroom apartments and 14 houses will be delivered in phases 2 and 3. The development will be mixed tenure.

calfordseaden was appointed to provide mechanical & electrical design and public health Services along with Code for Sustainable Homes, SAP, BREEAM and site monitoring services for the scheme.

All new homes will be designed to ensure minimal maintenance, with as strong emphasis on energy efficiency, to protect both the environment and save on costs at the same time. They will all meet the equivalent of Level 4 of the Code for Sustainable Homes and built to the Lifetime Homes Standard, ensuring they can be adapted as residents' needs change.

Established on the former Woolwich Connaught Estate site. The 3 phased development will also include a new church, which will be built in the latter phase and sustainable landscape works which will include a linear park and create a 'green heart' at the centre.

The buildings have been carefully considered to create a strong visual impact, accentuated with sensitive design details to provide a sense of individuality and style.





## £6M Prendergast School, Lewisham

### Client

Lakehouse

### Duration

2014-2015

### Services

Architect  
Structural Engineer  
M&E Engineer  
BREEAM Assessor

### Contract

JCT D&B

### Funding

Local Authority

### Sustainability

BREEAM 'Very Good'

calfordseaden was appointed to provide a range of services utilising BIM for this Primary School project. This project was our first in-house full BIM coordinated school project. The scheme provides a two form of entry in the primary phase and is part of Lewisham's strategy to accommodate ever growing pupil numbers.

The initial planning approval had already been granted for an existing 2D design. We worked collaboratively with the Contractor and project Stakeholders to produce a 3D model that incorporated a number of improvements over the original design, whilst remaining within the restrictions imposed. The model was shown to Clients during meetings which they found extremely beneficial in providing a greater understanding of the buildings appearance and suitability. The Structural, M&E and Architectural models were used to enable the production of robust tender information.

The building heights had already been set by the planning approved drawings; the stepped building and these heights gave us very limited ceiling service zones, therefore BIM helped us fully understand the implications and allowed us to creatively overcome the problems before getting to site. BIM also helped our team and Client identify constraints, opportunities and solutions to be explored.

An internal 'heart space' forms the hub of the school with its split levels in order to address the sites topography; the full height nature of the atrium provides many challenges with regards to servicing. With the use of BIM however, we were able to address these issues by introducing service runs through the split levels, the atrium zone and the adjoining hall.

BIM also helped us to identify any clashes between the structure, the fabric and services of the new build which we were able to resolve before construction began. The school uses our data rich model as live O&M manuals.





## £3.75M St John's Church Site, Wembley

### Client

ASRA Housing Association

### Duration

2009 - 2011

### Services

Architect  
Landscape Architect  
Planning Consultant  
Sustainability Advisor

### Funding

HCA Grant

### Contract

JCT 2005

### Sustainability

Code Level 4 (Housing)  
Code Level 6 (Vicarage)  
BREEAM 'Excellent'  
(Community Centre)

calfordseaden was commissioned on this award winning inner city regeneration scheme to design a mixed use development on a former church hall site within the bounds of a Grade II Listed Church which had been suffering from misuse.

To re-knit the urban structure and provide a strong sense of ownership for residents and users, 8 family houses were part of the concept alongside 20 flats, a new Vicarage and multi-use Community Centre. The group of buildings was given room to 'breathe' through the creation of a wide street that doubles as a usable space, a new courtyard (parvis to the Church) and a replanted private and secure garden. The design goes beyond the brief to include an internal street linking the Church and Community Centre, providing a semi-public space for events, displays, break out or simply meeting and greeting.

Flint and stone form part of the palette of materials for the elevations to reflect the Church's architecture and create an appropriate setting. To minimise lifecycle costs and long-term maintenance, the Project Team undertook a 'fabric first' approach, incorporating sustainability into the design including low maintenance, high quality materials, passive measures and on site generation of electricity. The new vicarage is a net-zero carbon house that incorporates a number of self-generating eco features including a rainwater harvesting system, ground source heat pumps, a whole-house ventilation system and photovoltaic panels to help combat fuel poverty.

Our Designers, the Client and Church representatives held a consultation event to demonstrate the proposals to neighbours and the church with the use of drawings, CGIs and 3D models.

The Code Level 6 Vicarage won a unique BREEAM award for 'Best Dwelling Assessed under Code for Sustainable Homes' in 2012.





## £90M Loughborough Park, Brixton

### Client

Guinness Homes

### Duration

2008 - 2019

### Value

£90M

### Services

M&E

Sustainability Consultant

### Sustainability

CfSH Level 4

### Images

Courtesy of Guinness Homes

This scheme involves the regeneration of a 1950s estate in 3 phases with Phase 1 completed 2013 and Phase 2 completed 2015. The project provides 550 mixed tenure homes, including private sale, and a community centre. The development includes a green roof and community heating system linking to a Contract Energy Management (CEM) service and Photovoltaic panels for Landlords electricity. The development is designed to comply with Code for Sustainable Homes Level 4 and the enhanced energy requirements of the London Plan 2014.

A key issue of this project was the connection of the main electrical supply to the development for Phase 1. On behalf of Guinness we assisted the contractor in the negotiations with UKPN to ensure the supply for the development was ready on time. We have also work closely with the contractor and their D&B designer to reduce the size of the equipment and loads in the energy centre. As the final Phase (3) is developed it is hope that the load can be further reduced based on actual energy records from the Phase 1 and 2 developments.

We have also worked closely with Guinness on the provision of a Contract Energy Management (CEM) provider for the development. We assisted the procurement team in the procurement process and gave technical advice on the 'smart billing' systems on offer.

The key target and successful outcome of the project was both to greatly reduce the plant and space required to offer the required energy strategy and to help the development of an understanding of post occupancy energy use.

The scheme includes a central energy centre completed during phase 1. However, the strategy has been designed to equip the plant room as each phase is developed, therefore allowing the site load to be reviewed at each phase. We have also been able to work with the initial designers to reduce the level of boiler and CHP plant to be installed in the plant room from an original estimate of 7MW down to 2MW, therefore saving greatly on both maintenance and energy used.





## £10M Clement House, Bracknell

### Client

Bracknell Forest Homes

### Duration

2011-2014

### Services

Architect  
M&E Design  
Sustainability Advisor

### Contract

Design and Build

### Funding

HCA Grant

### Sustainability

Code Level 4

calfordseaden constructed mould-breaking designs for Bracknell Forest Homes, who was working in collaboration with Bracknell Forest Council, to provide a new extra care housing scheme at Wick Hill in Bracknell.

The new senior living scheme delivers 65 one and two bedroom self-contained apartments over four floors, with communal facilities including a café, kitchen, dining room, lounges, hairdressing salon, hobbies room, library and IT suite. All facilities are available for residents to use as well as the local community.

The 65 units comprises of 14 homes for sale and 51 homes for social rent.

The scheme required the design team to undertake extensive research and numerous site visits to housing professionals, experienced sheltered housing managers and occupational therapists.

The sloping development site provided the opportunity for roof terraces and a multi-level atrium to be incorporated into the design. The atrium is a significant design feature and helps create an inclusive and vibrant community through its design as an indoor street. The atrium is a place for a multitude of functions and provides space to meet, relax and engage in a safe, secure and warm environment protected from the elements.

This project was a finalist in for 'BIM Project of the Year' in the 2013 Constructing Excellence Awards.





## £11M Digby Road, Hackney

### Client

Archer Hoblin and  
Network Housing

### Duration

2009-2012

### Value

£11M

### Services

M&E Engineer  
Code Assessor  
SAP Assessor

### Contract

Design & Build

### Funding

HCA Grant

### Sustainability

Code Level 3

Phased regeneration project on a constrained infill site delivering 97 high quality affordable flats in a mix of 1, 2 and 3 bedrooms across 5-13 storeys, with a high level of ecology including communal gardens, green roofs and the UK's highest Green Wall installation.

Our early appointment allowed us to work collaboratively with the Registered Provider and Contractor to review the Energy and M&E Strategy for the scheme. By adopting a coordinated approach from the outset we were able to eliminate areas that would be unacceptable to the Planners and the Client early on. We developed an options appraisal based on a strong resident first approach that, explored a range of solutions including biomass heating and hot water, air source heat pumps (ASHP) and a communal heating and hot water system linked with photovoltaic panels. This appraisal was fully reviewed with the Design and Client Team and provided a robust strategy for early submission for Planning consideration.

The final design incorporated a communal heating and hot water system delivered by a central biomass boiler fuelled with pellets from an adjacent store. This option was selected as there was insufficient roof space to accommodate a meaningful PV option and also to address the Planners' requirement for a communal approach to the energy strategy.

We assisted our Client to procure a Contract Energy Management Company to oversee metering and billing and manage site energy use and maintenance of the biomass system. We worked closely with stakeholders to engender an understanding of the requirements for running a biomass system and organised site visits to review systems in-situ, allowing an informed decision to be made on the most effective method to deliver all-round benefits.

Our involvement also assisted the RP to prepare for the Renewable Heat Incentive to ensure maximum benefit would be achieved and to create revenue to help off-set biomass maintenance bills and running costs for residents.





## £5.2M Hayes School, South London

### Client

Hayes School  
London Borough of  
Bromley

### Duration

2009 - 2011

### Services

Lead Consultant,  
Masterplanner  
Architect (A-D), Planning  
Consultant, Landscape  
Architect, Building  
Surveyor, CDMC, M&E,  
Sustainability, Structural  
Engineering

### Contract

JCT 05 WCD

### Sustainability

BREEAM 'Very Good'

calfordseaden's masterplan for this site rearranged the main entrance reception and public areas whilst addressing the changes in levels to make the school fully accessible.

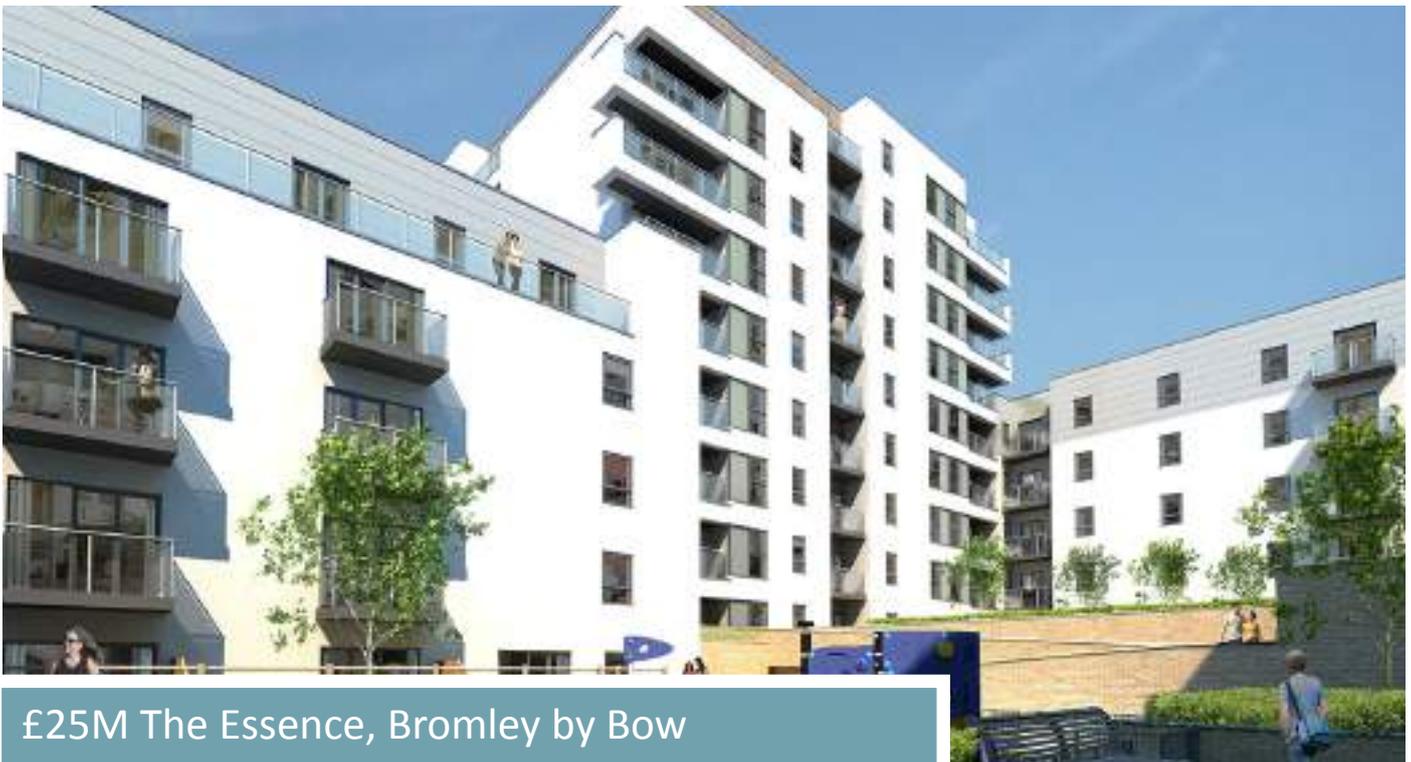
Due to the school's position in Metropolitan Open Land and on the edge of a conservation area, we undertook comprehensive negotiations and consultation with the Planners, Councillors and local residents throughout the design and construction process.

The first phase of works delivered a high quality stand-alone block with an SEN centre, library, exhibition area, media studies suite and numerous classrooms. The building was constructed using a modular off-site system to reduce disruption when the school was occupied and to ensure the works were completed before the beginning of the new term.

The relocation of existing school services into the new block left vacant spaces within the original school building, therefore we were involved with the conversion of these areas into a new staff room, training suite, and 6th form centre with a bar, dance floor and computer study suite.

Our design for the next phase of works consisted of a new stand-alone block, designed like a pavilion overlooking the sports field, which links to the 'M' Block delivered during the first phase. The new block houses a six court sports hall, dance studio, changing rooms and classrooms. The building also incorporates a green roof and photovoltaic panels to achieve a BREEAM 'Very Good' rating.





## £25M The Essence, Bromley by Bow

### Client

Circle Anglia

### Duration

2011-2014

### Services

Employer's Agent  
Cost Consultant  
Clerk of Works  
M&E Engineer  
Sustainability Advisor  
Structural Engineer

### Contract

JCT 05 WCD

### Sustainability

Code Level 3

calfordseaden was initially appointed to assist in the due diligence, site investigation report and the production of a conceptual design for the foundations, basement construction, superstructure (including transfer structure) and drainage to RIBA Stage 3+ for this new town centre development.

The scheme provides 208 residential units for private sale, shared ownership and affordable rent in a mix of one, two, three, four and five bedroom dwellings including sizeable wheelchair homes over six to eleven storeys. The development also includes a 1,700m<sup>2</sup> Tesco made to shell and core standards Tesco retail store, two further smaller retail outlets and back-up facilities for the retail space.

We produced reinforcement estimates, indicative details for cladding and masonry support and a specification for materials and workmanship. We worked collaboratively with the architect and cost consultant in a series of workshops to review methods of construction and hone the design.

We suggested an alternative form of construction for the basement walls, based on using permanent steel sheet piles with welded clutches, vibrated into the ground. This eliminated the need for road closures, reduced the temporary works and saved a significant amount of time on site. This information was presented in a Stage D+ Report, and included drawings schedules specification notes and other information to assist tenders with their bids.

We were subsequently commissioned by the client to develop the detailed design of the piled foundations, ground beams, basement slab and walls.

In addition, we are also appointed as employer's agent on behalf of the Registered Social Landlord for the development of the affordable housing units.

**Awards:** First Time Buyer Readers' Awards Best Large Development' and 'Best Show Home' categories 2014.



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