

HOARE LEA & BUILD-TO-RENT





**Community
and connection.**
**Contemporary
ways of living.**



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“Environments matter... and in Build-to-Rent communities this is truer than ever. When engineering strategy and design is considered early enough in the process, it can play a transformative role in shaping the success of these important communities.”



Transforming the traditional.

Flexible design.

Throughout the UK, the property industry is adapting to market needs. The Build-to-Rent (BTR) model is catering to a style of living that more and more people want – where experiences are valued over possessions... and where community, connection, and convenience are priority.

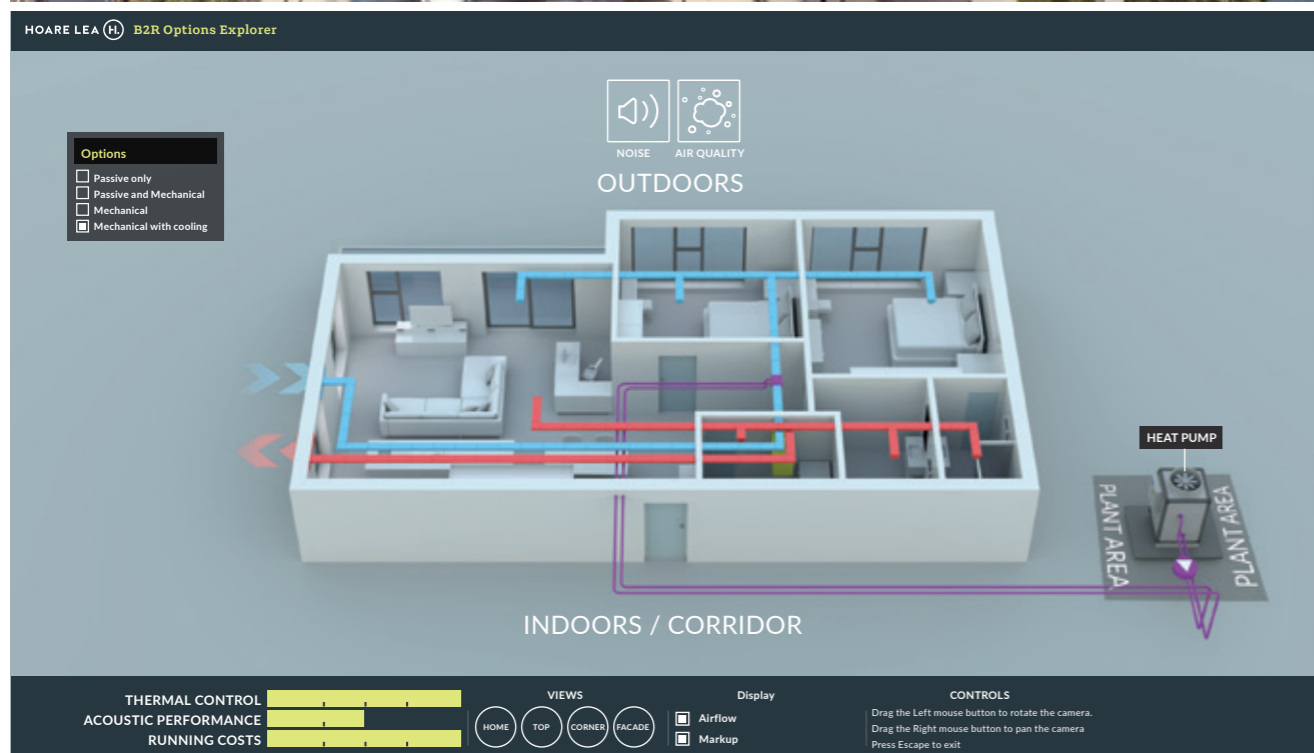
In response to this changing landscape, we provided our expertise to shape the Urban Land Institute (ULI) Best Practice Guide to Build-to-Rent communities. This comprehensive document is for investors, local authorities, and designers, and covers the fundamentals of Build-to-Rent design, management, and operation: from inception through to post-occupation.

Unique requirements.

Build-to-Rent residential projects are unique due to their many different requirements compared to those built 'for sale'. Key differentiators are:

- Creating a lifestyle, and sense of wellbeing and space.
- Providing a rental experience that is completely different to the traditional 'buy-to-let landlord'.
- Incorporating shared amenities that promote a community feel.
- Designing simple, functional and adaptable engineering solutions that allow the landlord to maintain systems without impacting on the daily routine of residents.
- Focusing on whole lifecycle costs and operational efficiency.
- Consideration of the end user, to maximise occupancy and minimise void periods.
- Optimising layouts to maximise rental returns, with flexible tenures for all ages.
- Considering Design for Manufacture and Assembly (DfMA) or Modern Methods of Construction (MMC) for efficiency and quality benefits through standardisation, repetition, simplification, and easier future maintenance.

Image (top left): Hayes Davidson





Creating the right environment.

Holistic design.

Build-to-Rent design needs to respond to various architectural forms and layouts, as well as different building typologies. This includes low density schemes in suburban areas all the way through to high density developments in urban centres.

A successful design approach looks at all the opportunities for maintaining a high-quality internal environment, and considers:

- **Acoustics.**
Both external and internal sources of noise need to be addressed comprehensively, with careful detailing to avoid any noise breakout from engineering systems or transfer between apartments.
- **Air quality.**
Good air quality and ventilation is vital for the health and wellbeing of residents. Our solutions take into account: enhanced ventilation rates, higher levels of filtration for city centre developments, external noise constraints, and effective window design.
- **Daylighting.**
Good daylighting levels influence the feeling of wellbeing and happiness but, conversely, must not lead to overheating. Lighting design should complement the internal environments created.
- **Effective, simple, and intuitive controls.**
Controls need to be easy to use, reliable, and robust. The control of services is key to both energy efficiency and end-user experience.
- **Maintenance, metering, and billing.**
Services must be maintained with as little disruption to residents as possible, located in landlord areas for easy access. Smart meters linked to a display unit in each dwelling can also allow residents to monitor their energy and water usage, and reduce consumption.
- **Security.**
Passive, natural-feeling and unobtrusive security is vital to not only protect people (residents, staff, and visitors) but also the landlord's capital investment and tenants' property.
- **Technology and IT infrastructure.**
Intelligent building design can now deliver user-friendly living environments that can be tailored using virtually any device. Low-voltage network cabling can support communications, control, and media distribution for a range of entertainment, environmental, and security systems. By future-proofing where feasible, a development can be easily adapted to next-generation technology.
- **Water temperature and quality.**
Maintaining hot and cold water temperatures requires consideration of both the maximum and minimum occupancy scenarios, with circulation and separation measures at apartment level.



Seamless service. Designing for quick quality construction.

For success in this sector, it's important to not just focus on perfect design but also on crafting something that can be delivered seamlessly to create an end product we are all proud of. The shortage of skilled people coupled with the need to build things better and faster means there has never been a better time to embrace the challenge of offsite manufacturing and modular design.

Our ethos is to:

- Simplify and standardise engineering services designs whenever there is an opportunity.
- Design for prefabrication and offsite manufacture from the outset of every project using our BIM skills to further enhance this.
- Use the intelligent isometrics we developed through the Advanced Manufacturing Supply Chain Initiative (AMSCI) to allow data to flow from concept through to manufacturing, onsite assembly, and operation.
- Use standard pre-fabricated products that we have developed with a manufacturer to add value to every project.
- Innovate to create new products that simplify systems and address design challenges without adding more services.
- Embrace modern methods of construction (MMC) on every project.
- Actively seek to engage with the supply chain early in the design process to make them feel part of the team and ensure we design what they can build.

As part of our 'doing it differently' approach we have already developed a standard utility cupboard arrangement for residential projects. This has been built by a major contractor and is available for clients and contractors to buy directly. Ultimately, it allows our clients to benefit from economies of scale across all of our projects, as well as making sure the engineering services play their part in the step change required.





Net Zero Carbon.

Limiting the impact of climate change is the greatest challenge of our time.

We all understand the importance of achieving net zero targets within the next 10 years, in line with scientific opinion and ahead of the government's target.

For those serious about being part of a positive climate-conscious revolution, 2030 is the target for all new developments to be net zero carbon, and the benefits for those that take on this challenge are abundant.

How do we begin?

Whether you're looking to create a net zero new build or ensure an existing building, estate, or vast portfolio of real estate operates at zero carbon, the scope needs to be established to inform your strategy.

We worked alongside other industry leaders to help the UK Green Building Council (UKGBC) to develop a framework for bringing all buildings to net zero carbon, whether looking at embodied or purely operational carbon emissions.

5 simple steps.

A building with net zero operations has no net production of greenhouse gas emissions as a result of its use, when evaluated over the year. Net zero can be achieved by generating all energy use from onsite renewable sources, or by using offsite renewable energy sources and other carbon offsets that displace the greenhouse gas emissions resulting from the building's operation.

Our process for achieving net zero carbon is simple and applies to everything from standalone buildings to vast real estates. At every stage you'll benefit from expert advice, simplified options and design solutions, all based on real life experience and tailored to your specific needs.

1. ASSESS Energy & carbon baseline

Evaluate the baseline energy/carbon performance. This applies to the design for a new building, or the operation of an entire estate, portfolio of assets or single existing building.

2. REDUCE Optimisation & upgrade

Assess a range of measures to reduce energy demand, including optimising the building fabric, building systems and controls.

3. GENERATE Onsite options

Establish how much energy can be generated onsite from renewable sources.

4. SOURCE Offsite options

Investigate sourcing electricity from the grid via a renewable energy contract or directly procure an offsite renewable energy supply.

5. OFFSET Displace remaining

Investigate carbon offsets, such as afforestation / local carbon displacement projects.

VERIFY NET ZERO CARBON Declare outcomes and monitor



Image: Hayes Davidson



Bringing people together.

A Build-to-Rent project has to deliver a desirable lifestyle. The better lifestyle a development can offer, the higher the value for operators. Effective design teams will create environments that bring individuals together in order to build a community. Technology can play a key part in connecting people and providing information about the wider community facilities – and this kind of tech is evolving at an accelerated pace. It’s therefore vital that the future-proofing of the development is considered early on to ensure a building can adapt to rapid changes and ever-evolving user expectations.

Creating a community.

Designed to be a brand-new town centre for the capital, Elephant & Castle is one of central London’s largest regeneration projects. It features 1,000 apartments; retail, restaurant and leisure facilities; plus exhibition and cultural spaces as part of a new cutting-edge campus for the London College of Communication.

An overarching aim was for the development to embrace the multi-cultural ethos of the area and bring the already established community closer together by creating new a space for people to use. Two underground and one mainline rail station, 28 bus routes, excellent road connections, and one of London’s first Cycle Superhighways ensure the development is easily accessed. This highly technical and challenging project involved working within a constrained site, with a major road, London Underground infrastructure, and train lines all in close proximity. We were able to provide expertise from many of our sector specialists – from retail and workplace to residential and leisure – as well as designing collaboratively across our specialist groups. By coordinating under one banner, we created holistic and complementary solutions that truly delivered against this ambitious project’s spatial and time constraints.

A sought-after lifestyle.

Hoare Lea & Elephant & Castle.

BUILD-TO-RENT TREND - 1
EVOLVING USER EXPECTATIONS



ELEPHANT & CASTLE, LONDON

CLIENT: DELANCEY

ARCHITECT: ALLIES AND MORRISON

SERVICES: ACOUSTICS, AIR QUALITY, FAÇADE ACCESS, FIRE ENGINEERING, LIGHTING DESIGN, MEP, PERFORMANCE, SECURITY, SUSTAINABILITY, UTILITIES & ENERGY INFRASTRUCTURE, VERTICAL TRANSPORTATION, VIBRATION





Image: Assael Architecture



Management matters.

For operators, a Build-to-Rent project is all about the long-term. We know you need a cost-efficient building that will allow you to manage the smooth running of the space in line with residents' requirements, and all with minimal disruption. This demands a holistic approach and a complete commitment to 'design for performance', where decisions consider lifecycle costs and the long-term impact of solutions.

Innovative engineering for improved energy efficiency.

Previously the site of a rundown industrial estate, the redevelopment of Ferry Lane has created 480 new homes, along with 20,000 square feet of commercial opportunity and community spaces. Originally brought on to the project to review the scheme's energy strategy, we identified several shortfalls that would impact expected energy savings. We identified an opportunity to connect the scheme to the existing local Black Horse Road district heating network. Negotiating with the supplier, we agreed an energy rate and were able to deliver a solution that removed all billing obligations, ongoing maintenance costs, and administration from the client. But the advantages didn't stop there. By removing the requirement for an onsite energy centre, our revised designs made space for an additional 40 apartments that could be added into the scheme. Designed to meet Home Quality Mark Level 2, achieve energy savings 36 percent below Part L 2013, and be awarded BREEAM Excellent for the commercial areas, the project stayed true to its sustainable aims. Our engineering solutions, which were specific to the development, also allowed us to minimise operational costs over the building's lifecycle where possible, and provide Legal & General with a unique market-ready scheme.

A building for life.

Hoare Lea & Ferry Lane.

BUILD-TO-RENT TREND - 2
A LONG-TERM LIFECYCLE



FERRY LANE, LONDON

CLIENT: LEGAL AND GENERAL BTR FUND

ARCHITECT: ASSAEL

SERVICES: ACOUSTICS, LIGHTING DESIGN, MEP,
SECURITY, SUSTAINABILITY, UTILITIES & ENERGY
INFRASTRUCTURE, VERTICAL TRANSPORTATION





Image: HCL Architects



Spaces that spark loyalty.

A strong mark of success for Build-to-Rent operators is securing long-term renters and minimising void periods. The loyalty this requires comes when residents feel comfortable, happy, and catered to – both within their own apartment and in shared spaces. Individual environments should feel cool, quiet, light and airy, while communal spaces need just as much emphasis. A carefully engineered communal area allows people to form a sense of connection with the space, and can support the growth of a harmonious community that actively enhances residents' everyday lives.

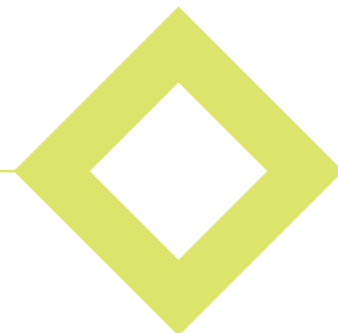
Balancing privacy and community.

The Newfoundland development is Canary Wharf's brand-new centrepiece. A towering 60-storey skyscraper, it provides a stunning focal point for the 97-acre site that's fast becoming one of the most exciting areas of London. This residential-led mixed-use scheme features 566 luxury apartments, leisure facilities and retail accommodation. The building is all about bringing together the best in innovative architecture, exquisite design, and panoramic views of both the river Thames and the City of London to give residents a sociable, stylish and spacious experience. Featuring a 'diamond' shape, the building has sloped sculpted sides, and its external frame is designed to provide residents with more space in both their own apartments and in the all-important luxurious communal areas. As well as delivering detailed energy and sustainability strategies, we helped to assess how the building layout and frame could be carefully considered not only in terms of functionality, but also to ensure residents could enjoy much-sought-after privacy on their individual balconies.

Community experience.

Hoare Lea & Newfoundland.

BUILD-TO-RENT TREND - 3
CONSIDERED COMMUNAL SPACES





NEWFOUNDLAND, CANARY WHARF

CLIENT: CANARY WHARF GROUP

ARCHITECT: HORDEN CHERRY LEE

SERVICES: MEP, SUSTAINABILITY



The planning challenge.

Hoare Lea & Apex House.

Apex House in Tottenham is a transformative project set to enhance the area's thriving community. With 163 new homes, four duplex townhouses, and 1,000 square metres of commercial space, together with a new public courtyard, the development is considered Grainger's flagship project. The site in Seven Sisters, Haringey, is an underdeveloped, low-rise area of London so the 22-storey tower is a landmark building in a very prominent location.

Having worked with Grainger previously, we drew on past experience of completed schemes to expertly develop the brief and secure planning permission. The balanced and considered energy strategy – that minimised the carbon-offset payment for the client – demonstrated compliance with all policies where possible. Thanks to close integration with the wider design team, and a strong relationship with 3DReid, we were able to produce a successful, well-coordinated design for this flagship project.



CLIENT: GRAINGER PLC
ARCHITECT: JOHN MCASLANS (CONCEPT)
3DREID (DELIVERY)
SERVICES: ACOUSTICS, FIRE ENGINEERING,
MEP, SUSTAINABILITY, VERTICAL TRANSPORTATION



Images: Callison RTKL

Unlocking Reading's potential.

Hoare Lea & Station Hill.

EXCEEDING EXPECTATIONS

Exploring new possibilities.

This high-profile development brings together contemporary living, working, leisure and public community space. The site's position, directly opposite the main entrance to Reading Station, makes it one of the most strategically important building locations outside London. Creating a new gateway for the town, the aim is for it to be a 'best in class' destination that becomes a vibrant new quarter.

The scheme has big ambitions: to exceed sustainability targets and, in the case of the Build-to-Rent residential offering, achieve net-zero carbon emissions. Phase 1 comprised the first 538 BTR units. Our all electric solution, coupled with a green energy supply commitment, not only met the target, but also saved 16,000 metres of pipework, several thousand litres of water for flushing, and 500 square metres of plant and riser space. In addition, it meets best-practice overheating criteria and avoids a complete cycle of plant replacement every 15 years. The result is not only a climate-conscious future-proofed development, but one that offers the luxury of spacious living, with the health benefits of comfortable environments, cleaner air, and wellbeing-centred design.

CLIENT: LINCOLN MGT

ARCHITECT: CALLISON RTKL / GENSLER

SERVICES: ACOUSTICS, FAÇADE ACCESS,
FIRE ENGINEERING, MEP, SUSTAINABILITY,
VERTICAL TRANSPORTATION

Station Hill



Experience makes all the difference. A reassuring reputation.



City Reach, Leeds.

A one-million square-foot site, with a mix of homes in blocks ranging from 7-14 floors.



Heaps Mill and Park Lane, Liverpool.

Redevelopment of a dockland site, including a listed building complex.



Cornwall House, Birmingham.

250 apartments with amenity spaces and management facilities.



Hortensia Road, Kensington.

31 new homes, including six family townhouses.



Young Street, Kensington.

Set within a Conservation Area and designed to achieve a Level 4 Code for Sustainable Homes rating.



Imperial 2, East London.

The demolition of existing buildings to create a community-focused mixed-use scheme.



Roseberry Place, Bath.

Redevelopment of a riverside site to provide 171 apartments, plus retail and office space.



York Place, Wandsworth.

A mixed-use development, with residences achieving 46% carbon reduction over Part L 2013.



Aubrey Place, Milton Keynes.

Two buildings, accommodating a total of 294 residential units.



Fizzy Living, Finchley.

A former police station site converted into high-quality residences and commercial space.



Silbury Boulevard, Milton Keynes.

A vibrant mixed-used development on a redundant brownfield site.



Ruby Triangle, London.

1,152 homes across five medium-to high-rise blocks, with commercial spaces, amenities, and public areas.



Engineers of human experiences.

About our firm.

Hoare Lea is an award-winning engineering consultancy with a creative team of engineers, designers, and technical specialists. We provide innovative solutions to complex engineering and design challenges for buildings.

Irrespective of the scale or complexity of a project, we provide a full range of MEP, environmental, and sustainability services, bringing buildings to life and ensuring that they perform in operation as well as they look.

Our heritage.

Our founder – Henry Lea – was the first Consulting Engineer in the world. Our 155-year legacy is built on personal pride, technical expertise and dedication to delivering outstanding results. Today, we are proud to maintain Henry Lea's commitment to excellence with forward-thinking and sustainable solutions that engineer a better future for all.

Our spirit.

We are problem solvers who care how a space makes you feel when you step inside – who bring buildings to life. We overcome every challenge with ingenuity, determination, and pride. We take personal responsibility to achieve a shared vision, combining strong relationships with technical excellence. When we embark on a project journey, we are making a commitment to our client and to each other.

Your ambitions. Our expertise.

Whatever our client's vision, we exist to make it a celebrated reality. We focus on the future and invest for the long term. We fiercely protect our hard-earned reputation so that our firm can be passed on to those who will follow.

It's personal.

Proudly independent and led by partners, we are fuelled by personal pride; an inbuilt desire to 'roll up our sleeves' and dedicate ourselves to doing the very best job possible. We protect our strong legacy for future generations to inherit and to build on. We commit to personally seeing projects through from inception to completion and beyond, collaborating with each other and our clients on the journey.

Problem-solving DNA.

Solving complex engineering and design challenges is in our genetic makeup. We have the structure, tools, and freedom to find the right solutions with efficiency. Whatever the scale or complexity of the problem, we have the expertise, the determination and the ingenuity to make it happen.

Leaders in our field.

As the UK's largest MEP Engineering Consultancy, we are building on more than 155 years of proud heritage. We are experienced in many sectors, and involved and influential within our industry and further afield. Our people are focused specialists; we only do what we're good at. We win awards – both for our firm and for our clients – and celebrate our impressive legacy of outstanding, innovative work.



Our specialist expertise.

Acoustics • Air Quality • Audiovisual • Building Physics
Digital Engineering • Expert Witness • Façade Access
Fire Engineering • Intelligent Buildings • Lighting Design • MEP
Net Zero Carbon • Operational Engineering • Performance
Property Services • Research & Development • Security
Sustainability • Utilities & Energy Infrastructure
Vertical Transportation • Vibration

Our in-depth sector experience.

Arts, Culture & Heritage • Courts • Data Centre & Mission Critical
Defence • Distribution • Healthcare • Higher Education • Hotels
Manufacturing & Process • Prisons • Residential • Retail • Schools
• Science & Research • Sport • Transport • Workplace

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