## Rory Bergin

Partner, Sustainable Futures HTA Design LLP





# STA Conference Timber in the Housing Sector

RIBA HTA DESIGN

Presented by Rory Bergin

July 2024





housing people

Our collaborative endeavour is focused towards improving all forms of housing, and every aspect of what makes a great place to live, from the home, to the neighbourhood, and the city scale.



**URBAN REGENERATION** 



**ESTATE RENEWAL** 



RENOVATION AND RETROFIT



HOMES FOR RENT



**FACTORY MADE HOUSING** 



ZERO CARBON COMMUNITIES



**NEW SETTLEMENTS** 



**SUBURBAN EXTENSIONS** 



**PARKS & PUBLIC REALM** 

### Interdisciplinary Collaboration

Central to our process is to clarify our clients' objectives at the outset, bringing all our interdisciplinary expertise to bear on achieving them.

We work together to improve all aspects of housing, from the performance and spatial quality of individual housing typologies, through the experience and qualities of large urban buildings, and the comprehensive masterplanning of new suburban settlements and the regeneration of urban areas.

HTA's expertise includes designing for multi-tenures and affordable housing, as well as housing for private sale and rent.



ARCHITECTURE



SUSTAINABILITY & BUILDING PHYSICS



**INTERIOR DESIGN** 



MASTERPLANNING & URBAN DESIGN



**PLANNING** 



LANDSCAPE DESIGN



PRINCIPAL DESIGNER

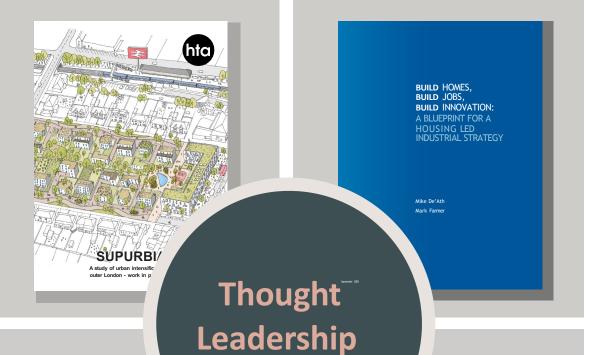


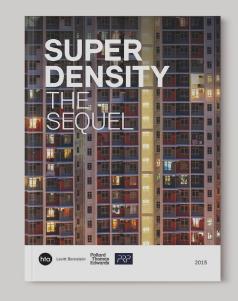
**COMMUNITY ENGAGEMENT** 

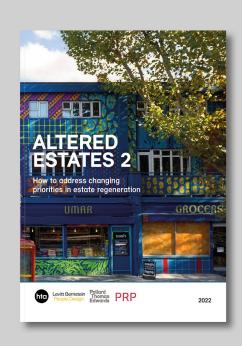


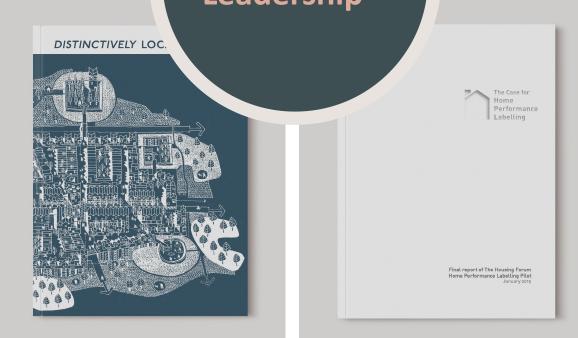
**COMMUNICATION DESIGN** 

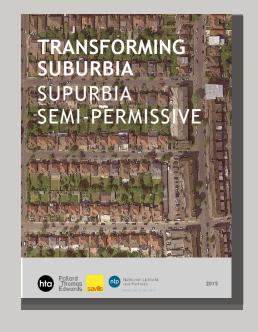


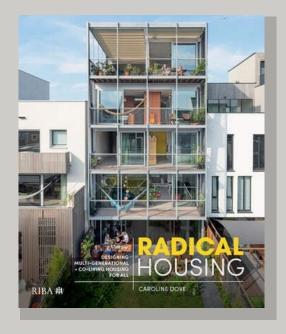




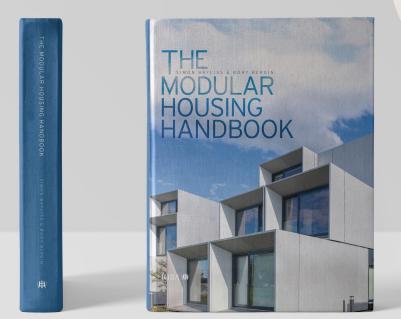


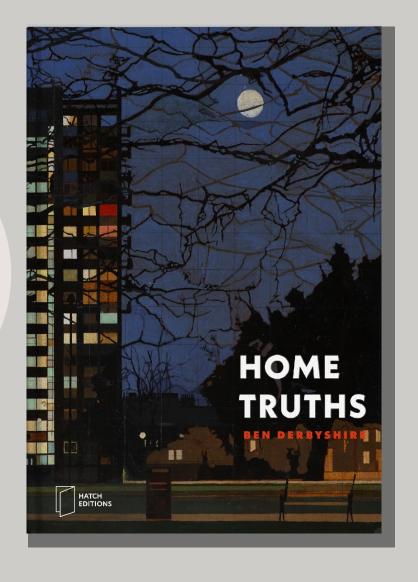












# Sustainability & Building Physics

Our sustainability team works closely with internal teams and clients, developers and engineers to improve the environmental performance of our projects and maximise benefits for both the client and the building occupants.

We operate across the whole spectrum of the RIBA Plan of Work, from the early stages of options appraisals and feasibility studies to the final stages of building operation in use and post occupancy evaluation.



# Sustainability & Building Physics

#### **OUR SERVICES:**

- BREEAM Communities
- Daylight, Sunlight and Overshadowing
   Environmental Impact
   Assessment (EIA)
- Design for Manufacture and Assembly
- Home Performance Labelling
- BREEAM New Construction
- Community Engagement and Third Party Consultation
- Microclimate Analysis of Internal and External Spaces

- Commercial Energy Assessments SBEM/ Dynamic Simulation Modelling
- Domestic Energy Assessments SAP
- Thermal Bridging and U-value Calculations
- Code for Sustainable Homes (CSH)
- Home Quality Mark (HQM)
- CEEQUAL
- Sustainability, Energy and Climate Change Environmental Impact
- Passivhaus (EIA)
- Life Cycle Assessment (LCA)





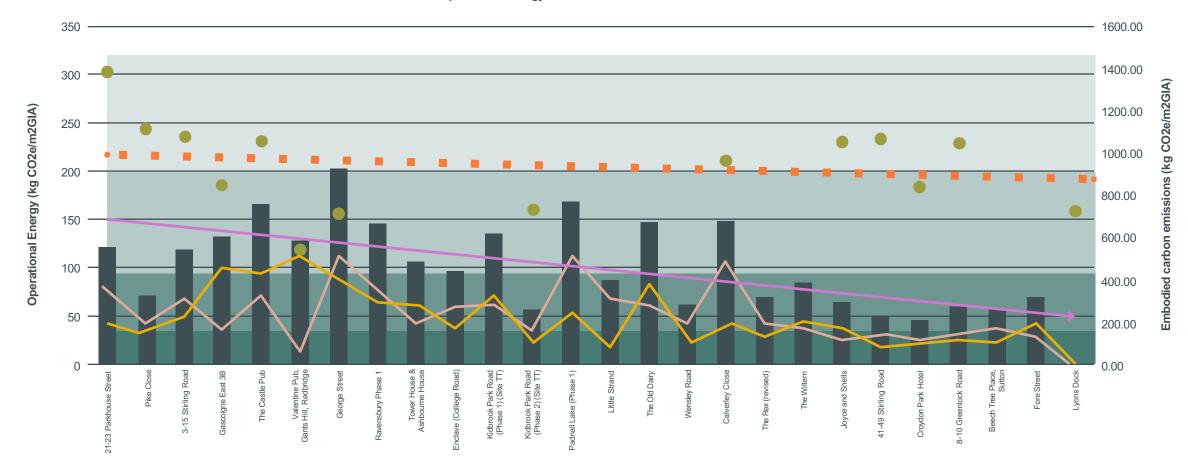


### Climate Challenge

Operational Energy and Embodied Carbon Emissions



#### **Operational Energy and Embodied Carbon Emissions**



### Ideas to Reality

**Navigating Permissions** 

We are contending with a variety of permissions, given by different bodies, with different views to get buildings built

Each set of permissions changes the original intent, so we often end up a long way from where we started.

There is very little cross-communication between authorities, so guidance can be contradictory.

Impact assessment of policy change is patchy, often ignoring climate impacts.







Client



Funder



Planner



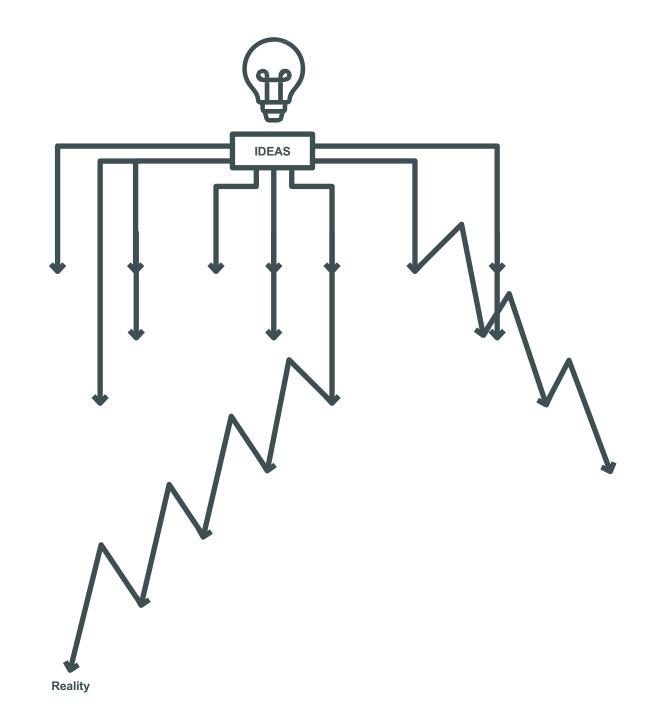
Regulator



Fire Officer



Insurer



Bristol

Completed in 2013, Hanham Hall is England's first large-scale volume house builder scheme to achieve the zero-carbon standard.

At the core of HTA's approach was a belief that building sustainable communities is about more than meeting codes. It was to create a place where people want to build their lives, feel safe and comfortable, and are inspired to live harmoniously with their environment.

Used Kingspan TEK SiPS panels, with timber frame internal walls and floors.

Cedar cladding externally.

Client: Barratt Homes

No. Homes: 187 Started: 2008 Complete: 2013 Sector: Suburban

**Services**: Architecture, Planning, Landscape, Communications and Sustainable Futures















Bristol

#### **ARCHITECTURE**

Located near Bristol, the 9 hectare site adjoins the green belt and suburban housing. It provides 187 new private and affordable homes from 1 bedroom flats to 5 bedroom houses, with complementary community and commercial uses.

The restored Grade II\* Listed Hanham Hall is central to the vision - providing the site with a sense of identity and history while adding vibrancy to the community through new uses such as office space, a crèche, and cafe. The layout of the homes is built around the Hall, revealing and framing views and structured by the historic gardens and field patterns to connect into the surrounding park and countryside.











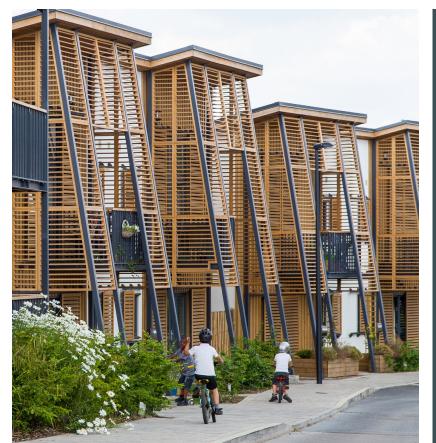
**Bristol** 

#### **SUSTAINABILITY**

The homes were all designed to reflect the sustainability credentials using the Kingspan TEK system (structural insulated panels) which offered very high air tightness and insulation. Our design explores the challenges of creating highly insulated, air tight homes while maximising daylight, minimising overheating and reducing embodied energy.

The homes combine stack and cross ventilation, large openings, deep roof overhangs, balconies and shutters to avoid overheating. As a result of all these innovations we exceeded a wide range of industry benchmarks including delivering the 'Zero Carbon' standard, CfsH Level 5, Building for Life 12, CEEQUAL Excellent and BREEAM Very Good for the refurbished Hall.







#### **KEY METRICS**

#### Operational Energy 44 kWh/m2 year

Tenure 30% Affordable/70% Private

Primary Closed Timber Panels construction King span Insulated SiPs method panels

Fabric performance Ground Floors 0.11Wm2K

Walls 0.14Wm2K Roof 0.14Wm2K Windows 1.40Wm2K Doors 1.40Wm2K

Air Tightness 1.0m3/m2/hr at 50Pa

Energy systems PV Panels

MVHR

Gas fired boilers with radiators

### Hanham Hall Bristol

#### **LANDSCAPE**

There are 3.7 ha of biodiverse, amenity spaces incorporate allotments, green houses, play areas, an orchard, retained mature trees and hedgerows. Throughout our design, we integrated swales and ponds as part of the SUDs solution.

The homes open on to large balconies and verandas to create strong connections with the surrounding communal gardens and countryside.













Bristol

#### RESIDENT FEEDBACK

HTA have been back to Hanham to carry out some Post Occupancy Evaluation (POE). A resident focus group, interviews and subsequent questionnaire, proved that Hanham Hall has a strong sense of community, biodiversity and neighbourhood connectivity. Our POE found that on arrival many residents said their reason for moving was either to downsize or to buy their first home with one of the strongest attractions of the development being the sense of community and biodiverse setting.

Overall, residents responded positively to questions on active lifestyle citing the surrounding greenery and natural environment as inviting to spend time in.





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I love living here. I've grown to love it even more in the last few months, because we've been sort of connecting a bit more as a community.

I have an allotment and there are some really special people down there, so that's been a big part of getting to know people – and a big part of the whole ethos here of getting in touch with nature.

Holly Foskett, Resident















I just appreciate having this greenery that's been left to nature and is on your doorstep.

It's really nice in summer when you walk up the hill, and there's butterflies,

you can actually see the wildlife and ecosystems. There are ducks in the pond. It's not just having that amount of green space; it's the fact that it's wild spaces left to nature, which is very nice.

Peter Smithers, Resident









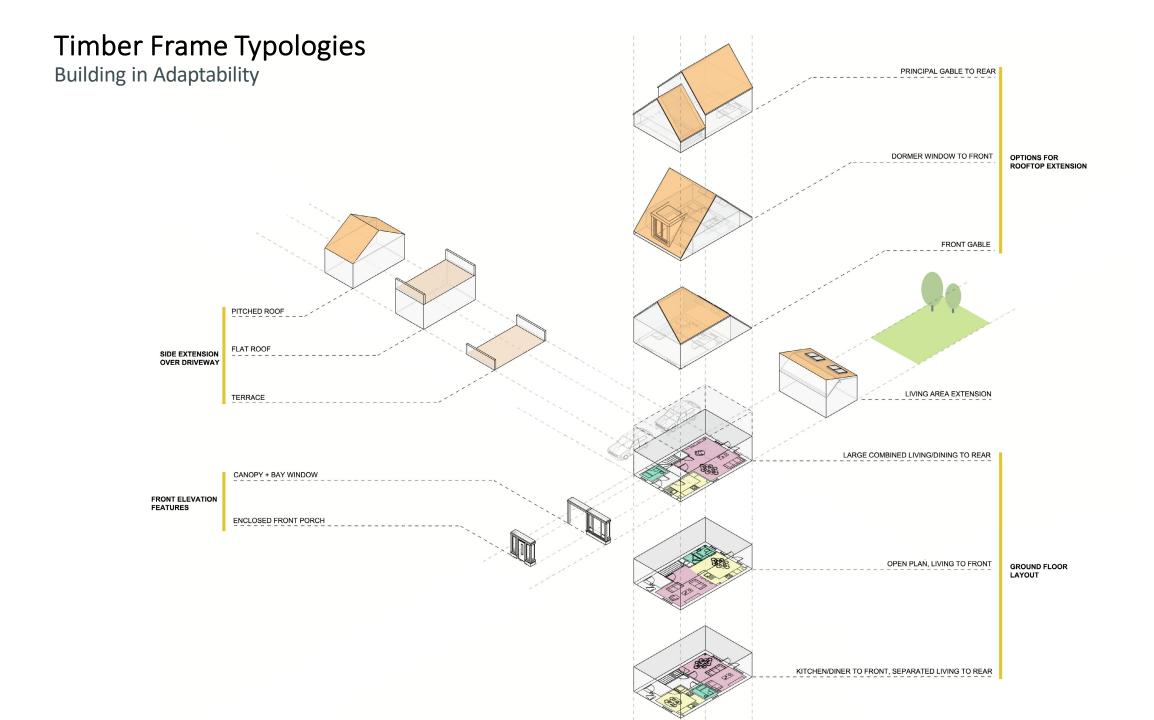




### Masterplan at Bid Stage

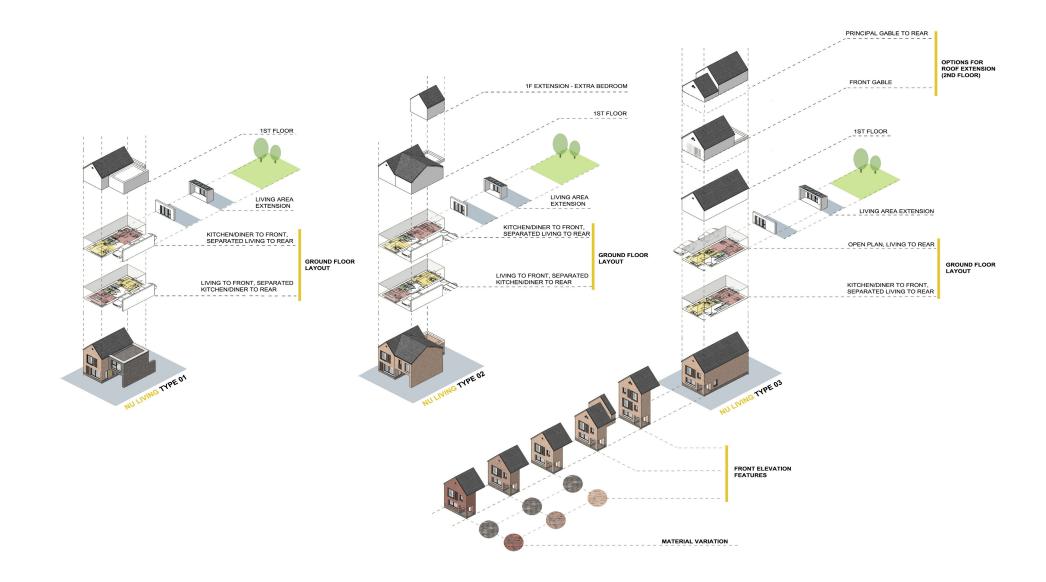
Showing Phases 1 and 2 of 600 units and including a new school and commercial space.





### MMC Manufacturing

**Customer Choice** 





### Planning Submission Visualisation

View from Public Open Space



### Planning Submission Visualisation

View from the play park

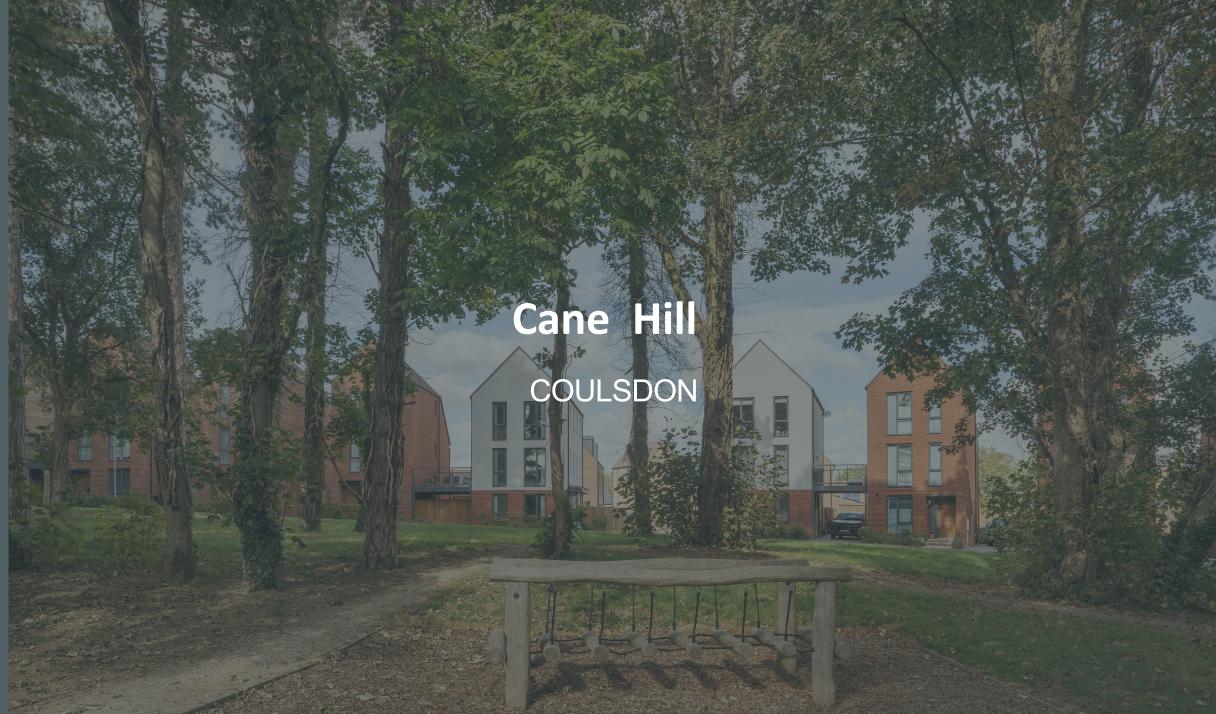


### Planning Submission Visualisation

Quiet Internal Street







## Cane Hill Coulsdon

#### **MASTERPLAN**

Cane Hill is a development of 667 homes on the site of a derelict hospital on Green Belt land just to the south of Coulsdon Town Centre. The layout was designed around the magnificent landscape which has dramatic topography, fantastic views and many large mature trees.

Client: Barratt Homes

No. Homes: 667 Started: 2012 Complete: 2018 Sector: Suburban

Services: Architecture, Urban Design and Landscape









## Cane Hill Coulsdon

#### **ARCHITECTURE**

Cane Hill celebrates the natural and historic character of this Green belt site and improves access to countryside for the existing community to create an exemplar sustainable development for the 21st century, delivered by a volume housebuilder in close collaboration with the GLA, Croydon council and the local community. Phase 1 completed in 2017 and comprises of 187 homes, whilst phase 2 completed in 2021 delivers 472 homes to complete the masterplan which integrates this previously derelict site with the surrounding area and strengthens the links to Coulsdon town centre.











## Cane Hill Coulsdon

#### **LANDSCAPE**

Our vision for Cane Hill sets the new development within a mature framework of woodland, hedgerows and trees, providing a highly attractive and substantially green neighbourhood from the outset. This ambitious project has created a strong sense of identity that provides new facilities for Coulsdon and opened-up access to the greenbelt.

The green infrastructure network links the open spaces within the development, combining recreational amenity and play with enhanced wildlife corridors and biodiversity. It encourages a healthy lifestyle by offering a wide range of uses and characters to appeal to a diverse audience.









### **Upper Tuesley**

Milford

The development is set on part of the former site of Milford Hospital, within the Surrey Hills Area of Outstanding Natural Beauty. Our design focuses on respecting and enhancing this rural setting while bringing brownfield land back into use having been vacant for 20 years.

The proposal delivers 108 homes in a green belt setting, with contemporary design solutions designed to be sensitive to the protected setting. Our approach was to do design a wide variety of house types within a language of barns and farmsteads, with innovative approaches to delivery including custom build houses.

Client: Barratt Homes

No. Homes: 108 Started: 2012 Complete: 2016 Sector: Suburban

Services: Architecture, Urban design and Landscape









### Mulberry Park

Bath

Mulberry Park brings town centre density to the suburban edge of historic Bath.

The masterplan was designed through engagement with residents of the nearby Foxhill estate and when complete will deliver some 700 homes within which HTA's first phase of 278 homes is maturing very nicely. Arrival is by a formal avenue with rows of townhouses built in Bath stone echoing the city's Georgian heritage. 70% of the homes are family houses and this is achieved through a tight street network, bespoke housetype designs, and the skillful integration of parking for each home.

Client: Curo Group No. Homes: 700 Started: 2014 Complete: 2023

Sector: Private Residential

Services: Architecture, Landscape, Communications,

Sustainable Futures, and Planning













### Upton Site C Northampton

Upton is a sustainable urban extension of some 3000 homes located west of Northampton, delivered to a Prince's Foundation masterplan prepared for English Partnerships.

Located at the southern edge of the masterplan, Phase C was designed by HTA to make the most of fantastic views over the richly landscape open space of Upton Country Park. A small scheme of just 30 homes inspired by a row of chairs, modern design classics, all sharing the same basic characteristics but each highly individual in form and use of materials.

Client: Barratt Homes

No. Homes: 150 Started: 2007 Complete: 2011 Sector: Suburban

Services: Architecture and Landscape













### Middle Dock

**Canary Wharf** 

HTA are working with Glenn Howells Architects, Arup and the Eden Project, to deliver greening across the Canary Wharf Estate, starting with Middle dock, which is in a very prominent position opposite the Jubilee Line Station entrance.

The proposals look to introduce floating pontoons, walkways, ecological planting and a forest of trees, mostly utilising the expanse of space provide by the dock. This vision is in response to making the area more attractive and welcoming to residents and visitors as well as the many office workers.

Client: Canary Wharf Group

Started: 2022 Complete: 2025 Sector: Parks

Services: Landscape











### **Montgomery Square**

**Canary Wharf** 

Montgomery Square is an important link in the overall masterplan. Proposals aim to transform the existing square to deliver a range of public uses. The square will be active all year round, providing green pocket spaces to dwell, a flexible public square for events and markets, and new restaurant pavilions to sustain the life of the square.

Client: Canary Wharf Group

Started: 2022 Complete: 2025 Sector: Parks

Services: Landscape







### South Quay Plaza 4 Terraces

Isle of Dogs

HTA Landscape have been working for the last 6 years on the design and delivery of the public realm for South Quay Plaza in the Isle of Dogs. The scheme also involves three communal terraces on levels 18, 37 & 55. The overall design for the terraces includes tree planting on all four elevations of the tower providing vertical greening of the facades.

Works are well underway on level 18 - The Bamboo Sanctuary - a landscaped terrace focusing on the health and well-being of residents and their visitors including wellness and outdoor exercise spaces with breathtaking views overlooking Canary Wharf.

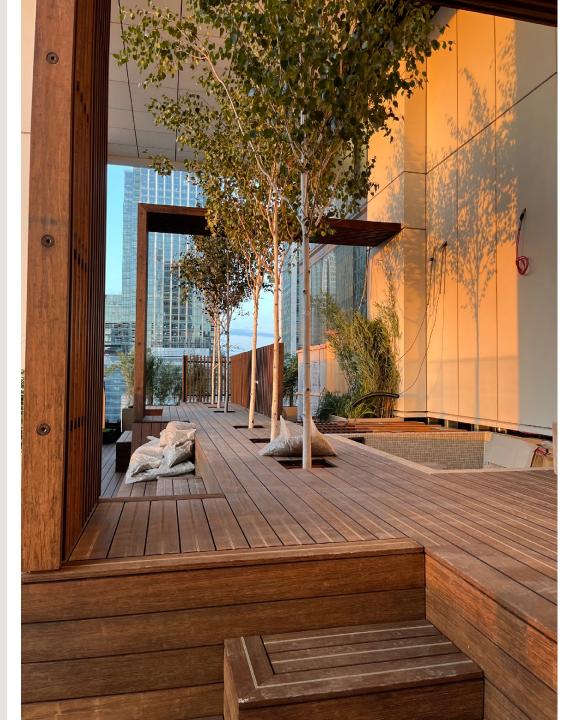
Client: Berkeley Homes

Planning Authority: London Borough of Tower Hamlets

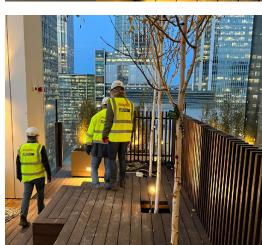
Number of Homes: 1,350 sitewide

Start Date: 2022 Completion date: 2024

Sector: Mixed use, Residential Services: Landscape Design







## Velux Carbonlight Houses

VELUX engaged HTA to evolve concepts for two homes in a semi-detached arrangement as the UK's contribution to the VELUX Model Home 2020 project a pan-European series of six building 'experiments'. The design includes a three bedroom home and four bedroom home with integrated garage. The two homes are designed to be spacious and airy, with a very high daylight factor (5%). The sloping roof and section are designed to maximise light and natural ventilation and the super insulated buildings have high levels of air tightness to reduce the amount of heating they need.













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