**DRAFT**

# North East Cambridge
# Typologies Study And Development Capacity Assessment

November 2021

# Contents [To be updated]

# Introduction

## // An innovation district for Cambridge

This typology study has been prepared by the Greater Cambridge Planning Service to inform the preparation of the Area Action Plan for the future development of North East Cambridge (NEC).

Through this study we explore a wide variety of different buildings and spaces that provide the kinds of uses envisaged at NEC. The building examples include hybrid mixed use typologies to challenge preconceived ideas of form and density. All examples demonstrate a degree of innovation in form and have been designed to respond to address particular site challenges.

Similar principles and innovation will be needed at NEC. The approaches identified in the Case Studies can start to inform ways of considering how development at NEC can be designed to make best use of the opportunity presented within the AAP area where there is a need to optimise density and consider more land efficient forms and models. Thinking creatively and differently is essential to realising the ambition of what could be a new mixed-use City District for Cambridge and the sub-region.

A number of the Case Studies have been used to inform the Development Capacity Assessment work undertaken to inform the amount and types of development considered appropriate for the AAP area.

# Home

## Exploring residential density and form

## // Defining density

There is much confusion about housing density amongst the public and professionals alike. In particular perception of high density has often equated with high rise towers, whereas in fact traditional terrace housing of the Georgian and Victoria eras achieved very high quality, flexible forms with densities far in excess of the high-rise development of the 1960s and 70s.

Density is a way of measuring the intensity of development on a particular site and in combination with the mix of uses, can affect a place's vitality and viability. There are many ways in which it can be measured, as the numbers of homes (units or dwellings), habitable rooms, people (or bed spaces), or floor space. The simplest and most common is dwellings per hectare (DPH).

For the purposes of this study, residential density has been expressed where possible, as net dwellings per hectare. The difference between net and gross density is explained in the adjacent diagram.

By way of comparison, densities of recently completed urban extensions and other notable developments around Cambridge are illustrated on the following pages.

To maximise the possibility of creating a self-supporting new urban district, development needs to be at a density that creates the best conditions for this to happen. As such all the case studies explored in this section possess more urban qualities and are of increased densities.

The highly valued Victorian terraced house is a good example of high density but low-rise forms.

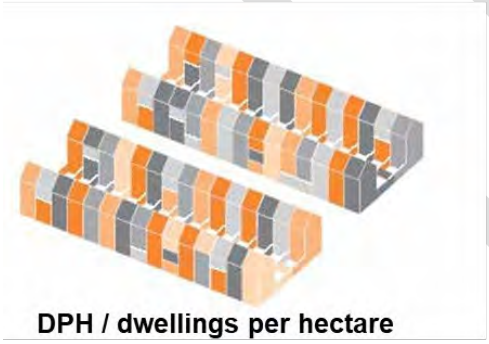
Below is a photograph of Derby Street in Newnham, Cambridge which is just one example where densities can be as high as 90 dwellings per hectare.

**Dwellings per hectare: The difference between net area and gross density**

**Net density**

Net density includes only areas developed for housing and directly associated uses.
It excludes:
1/major distributor roads
2/ primary schools
3/ open spaces serving the wider area
4/ significant landscape buffer strips.


**Gross density**



**DPH / dwellings per hectare**

**HRH / habitable rooms per hectare**

**PPH / people per hectare**

## Residential case studies summary sheet [To be updated]

Density figures are net unless otherwise stated

300+ dwellings per hectare (DPH)

**CB1, 'Ceres', Cambridge**
300 DPH

348 DPH

**Bermondsey Spa, Southwark**
333 DPH

200-300 dwellings per hectare (DPH)

**Trafalgar Place, Elephant and Castle**
217 DPH

**Aylesbury Estate, Southwark**
244 DPH

**S3, Eddington, Cambridge**
261 DPH

100-200 dwellings per hectare (DPH)

**Vaudeville Court, Islington**
100 DPH

**8a & 8b, Great Kneighton Cambridge**
109 DPH

**Hammarby Sjöstad, Stockholm**
145 av. DPH

50-100 dwellings per hectare (DPH)

**Athena, Eddington, Cambridge**
65 DPH

**Iroko, Coin Street, London**

**Virado, Great Kneighton Cambridge**
81 DPH

**121 Upper Richmond Road**
353 DPH

**77-83 Upper Richmond Road**
385 DPH

**Caxton Works, Hackney**


**Underwood Road, London**
256 DPH

**Ocean Estate, Stepney**
261 DPH

**CB1, (Buildings C1, C2, D1) Cambridge**
245 DPH

# What is the density of new development in and around Cambridge? [To be updated]

All density figures are net

**Marmalade Lane, Orchard Park**

Total area: 0.97 ha
Homes: 42
Storeys: 2-3
Density: 46 DPH
Status: Complete

**S3, Eddington**

Total area: 0.74 ha
Homes: 186
Storeys: 4-5 storeys
Density: 251 DPH
Status: Permission granted

**Athena, Eddington**

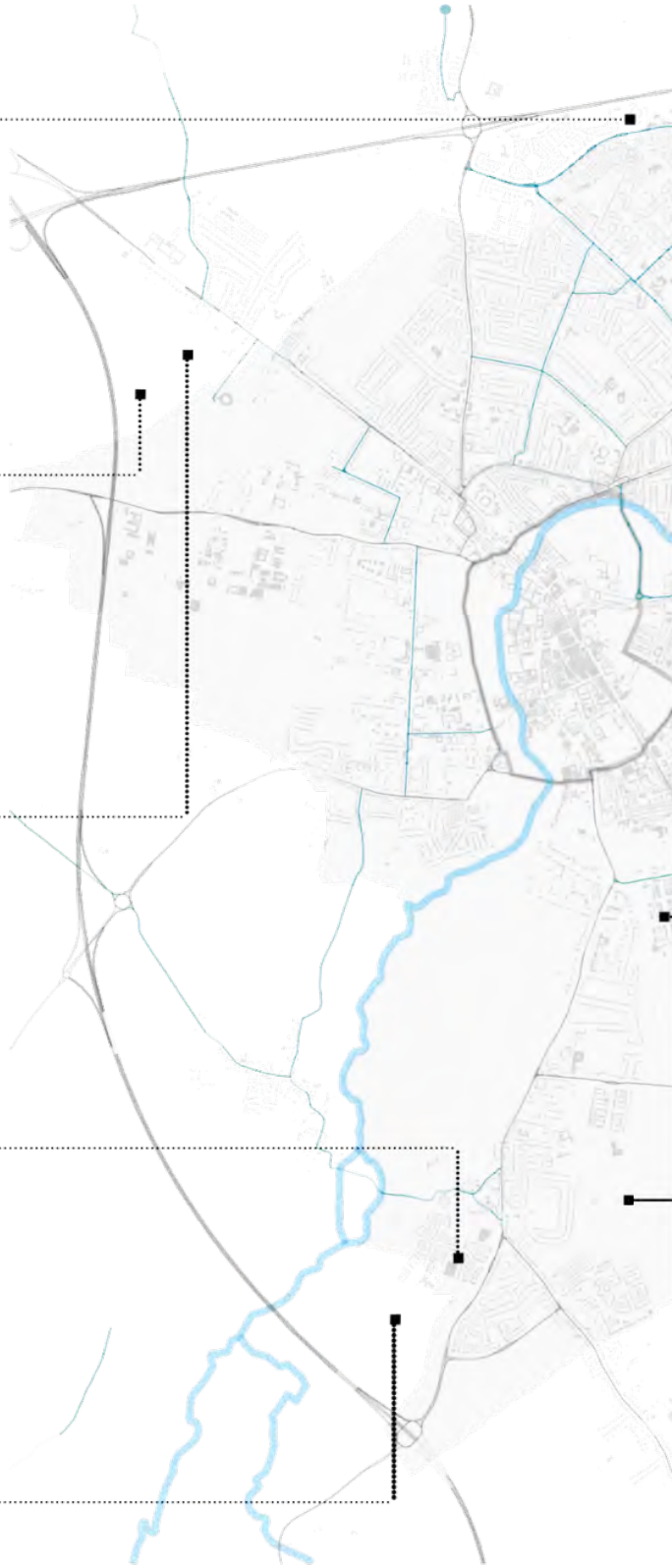
Total area: 3.73 ha
Homes: 240
Storeys: 2-5 storeys
Density: 65 DPH
Status: Complete

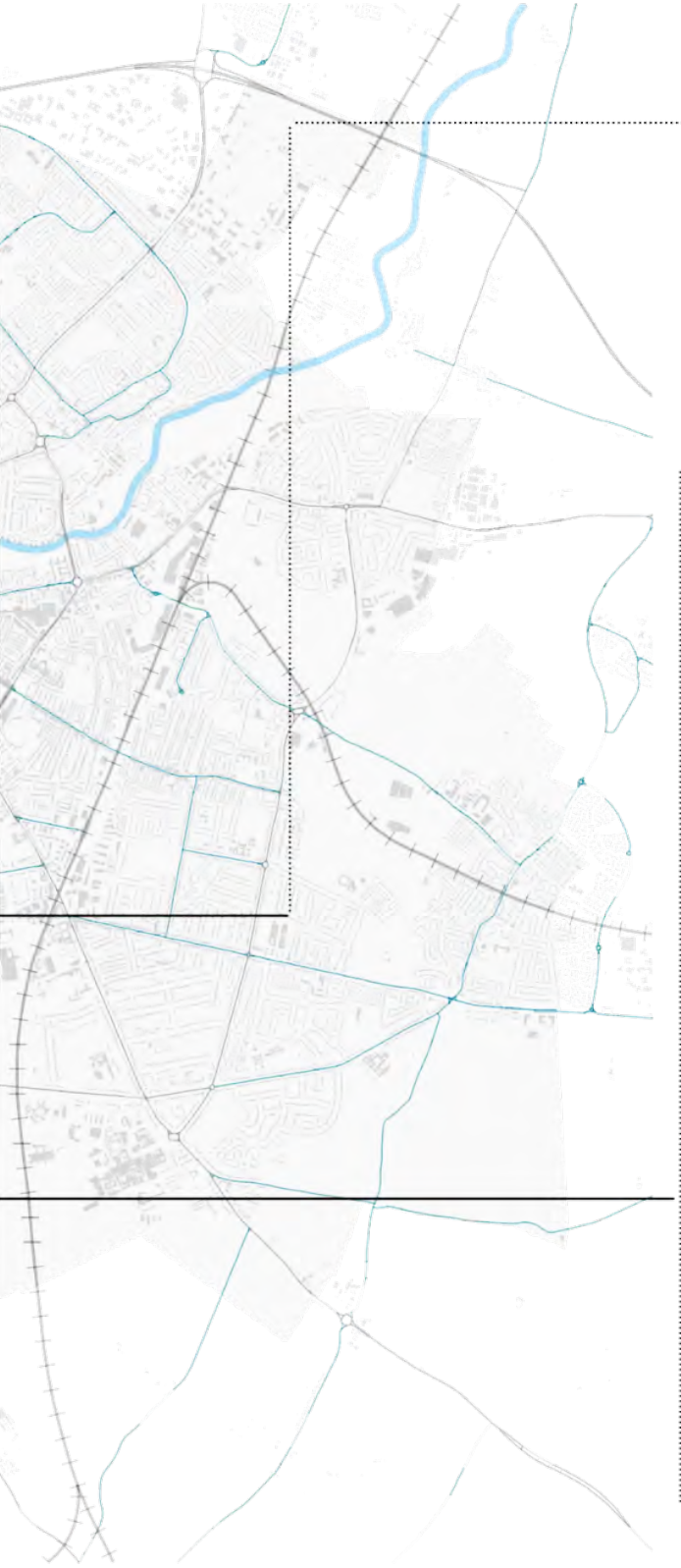
**Trumpington Meadows**

Total area: 9 ha
Homes: 353
Storeys: 2-4 storeys
Density: 43 DPHa
Status: Complete

**Trumpington Meadows, Phase 9**

Total area: 2.37 ha
Homes: 122
Storeys: 2-4 storeys
Density: 51 DPHa
Status: Complete





**Accordia**
Total area: 9.6 ha
Homes: 378
Storeys: 2-7 storeys
Density: 61 DPH
Status: Complete

**8a & 8b, Great Kneighton**
Total area: 2.57 ha
Homes: 251
Storeys: 2-5 storeys
Density: 109 DPH
Status: Under construction

**Virado,Great Kneighton**
Total area: 2.7 ha
Homes: 208
Storeys: 2 - 5 storeys
Density: 81 DPH
Status: Complete

**Aura, Great Kneighton**
Total area: 5.2 ha
Homes: 229
Storeys: 2-5 storeys
Density: 59 DPH
Status: Complete

**Seven Acres, Great Kneighton**
Total area: 2.7 ha
Homes: 128
Storeys: 2-4 storeys
Density: 75 DPH
Status: Complete

## CB1 ‘Ceres’, Cambridge - Architects: Pollard Thomas Edwards -

Site area: 0.5 ha
Net density: 300 DPH
Units: 150
Heights: 6-7 storeys

### Project Overview

Located next to Cambridge Railway Station, and part of the CB1 regeneration scheme, Ceres provides a range of apartment sizes including duplex typologies.

### Accommodation schedule

The table shows that there are 10 studio apartments with an average gross internal area (GIA) of 30 square metres (sqm), 51 one-beds with a GIA average of 45 sqm, 100 two-beds with an average of 67 sqm, and eight 3-beds between 75 to 82 sqm in GIA.

| Typology of units | Ave GIA (sqm) | Number |
|---|---|---|
| Studio | 30 | 10 |
| 1 bed | 45 | 51 |
| 2 bed | 67 | 100 |
| 3 bed | 75-82 | 8 |
| Total | - | 169 |

#### Other land uses

| Land use | Area |
|---|---|
| A1/A3 Retail | 787 sq m |
| D1 Community Room | 46 sq m |

Image of CB1 flats and public space at ‘Ceres’ Cambridge

## Hammarby Sjöstad, Stockholm, Sweden

Site area: 160 ha
Ave density: 145 DPH
Units: 9,000
Heights: 4-8 storeys

### Project Overview

Hammarby Sjöstad (Hammarby Waterfront City) is an environmentally friendly, mixed use neighbourhood located 3km south east of Stockholm's City Centre. Previously an industrial site, the area has been transformed to provide around 9,000 mixed tenure apartment homes, together with a new school, church, shops, offices and a park. It is considered one of the world's most successful urban renewal projects. The integration of transport was a key structuring component of the new district. The main boulevard accommodates a tram and is the main focus for commercial and business uses at ground floor. Overall, the district has over 100 retail units and restaurants as well as office space and some light industrial uses, employing over 5,000 people.

### Car Parking

| Number of spaces | Parking ratio |
|---|---|
| 210 cars / 1,000 residents | 0.65 |

Residents have access to "City Car" carpool

## Aylesbury Estate, Southwark, London - Architects: Levitt Bernstein

Site area: 0.75 ha
Net density: 244 DPH
Units: 260
Heights: 3-10 storeys

### Project Overview

Located within the borough of Southwark, Aylesbury Estate provides a variety of homes ranging from atrium accessible flats, duplexes, mansion blocks and a small tower block. The project was completed in 2012 and provides high-quality housing and facilities for the existing community.

### Accommodation schedule

| Typology | Number of units |
|---|---|
| 1 bed flats | 101 |
| 2 bed flats | 135 |
| 3 bed houses | 17 |
| 4 bed houses | 7 |
| **Total** | **260** |

### Other land uses

| Land use | Floorspace (sqm) |
|---|---|
| D1 - Healthcare facility | Unknown |
| Retail (A1) | 404 sqm |
| Parking ratio | 0.22 |


Image credit: Levitt Bernstein

## Hobson's Square Parcels 8a & 8b, Great Kneighton, Cambridge -
**Architects: Tate Hindle Architects**

Site area: 2.57 ha
Net density: 109 DPH
Units: 251
Heights: 2-5 storeys

### Project Overview

The scheme provides 209 flats and 42 homes with an 83% / 17% split. The development not only delivers a range of accommodation through varied typologies, but also provides several commercial units at ground floor and a podium garden to the block interiors. It forms part of the wider Hobson's Square that delivers further commercial space along with the Community Centre and Library.

### Accommodation Schedule

| Typology | Ave GIA (sqm) | Number of units |
|---|---|---|
| Studio | 38 | 7 |
| 1 bed flat | 54 | 62 |
| 2 bed flat | 86 | 125 |
| 3 bed flat | 124 | 15 |
| 3 bed house | 110 | 20 |
| 4 bed house | 135 | 22 |
| **Total** | **-** | **251** |

### Other land uses

| Land use | Area |
|---|---|
| A1-A5 Retail | 380 sqm |
| A1/A4 Retail | 200 sqm |
| A1 (convenience) | 381 sqm |
| Parking ratio | 0.97 |

Image credits Countryside/Paul Eccleston

## Trafalgar Place, Elephant and Castle - Architects: dRMM Architects

Site area: 1.08 ha
Net density: 217 DPH
Units: 235
Heights: 4-10 storeys

### Project overview

The scheme forms part of the regeneration scheme for the Heygate Estate in Elephant & Castle, South London, Trafalgar Place is an award-winning development of mixed- tenure homes and green spaces.

Image credit: © dRMM Architects

Image credit: © Alex de Rijke

## Vaudeville Court, Islington, London - Architects: Levitt Bernstein

Site area: 0.13ha
Net density: 100DPH
Units: 13
Heights: up to a maximum of 4 storeys

### Project overview

This 100% social housing rent scheme uses innovative design to make the most of a small site. A mix of homes, including duplex apartments, have been arranged in two terrace forms with private gardens between, to respect existing terraces. Covered decks provide access for upper floor apartments above and are shared by only three householders. Carefully integrated brick lattice screens provide privacy. A communal garden shared with residents of the tower block aimed to help bring neighbourhoods together.

### Accommodation schedule

| Typology | Number of units |
|---|---|
| 2 bed flat | 7 |
| 3 bed flat | 5 |
| 4 bed flat | 1 |
| Total | 13 |

Image credit: Levitt Bernstein

## Ocean Estate, Tower Hamlets, London - Architects: Levitt Bernstein

Site area: 2.69ha
Net density: 261 DPH
Units: 702
Heights: 4-9 storeys

### Project overview

Forming part of a wider regeneration scheme which included refurbishment of 1,200 existing homes, the new buildings at Ocean Estate were designed to form new streets and reintegrate into the traditional Victorian street network. A range of building heights and massing responds to the differing character of the area. Family duplexes are provided at ground and first floors, with dual aspect, decked access flats above. A central heating plant serves the whole scheme.

### Accommodation schedule

| Bedroom mix | Number of units |
|---|---|
| 1 bed | 274 |
| 2 bed | 323 |
| 3 bed | 174 |
| 4 bed | 31 |
| 5 bed | 17 |

### Other land uses

| Land use | Area |
|---|---|
| Community & commercial | 1,300 sqm |
| Parking ratio | 0.14 |

## Iroko', Coin Street, London - Architects: Haworth Thompkins Ltd

Site area: 0.75ha
Net density: 79 DPH
Units: 59
Heights: 2-6 storeys

### Project overview

Iroko Housing Co-operative was completed in 2001. Designed around a communal garden, the scheme provides a range of typologies to accommodate a mix of households. Ground floor shopping units and basement level car parking, maximising use of space on the site. The range of heights responds to the schemes varied context.

### Accommodation schedule

| Typology | Number of units |
|---|---|
| 1 & 2 bed maisonettes & flats | 21 |
| 3 bed maisonettes | 6 |
| 5 bed houses | 32 |

### Car Parking

| Number of spaces | Parking ratio |
|---|---|
| 21 | 0.36 |

Image credit: Philip Vile

## Caxton Works, Canning Town, London- Architects: Studio Egret West

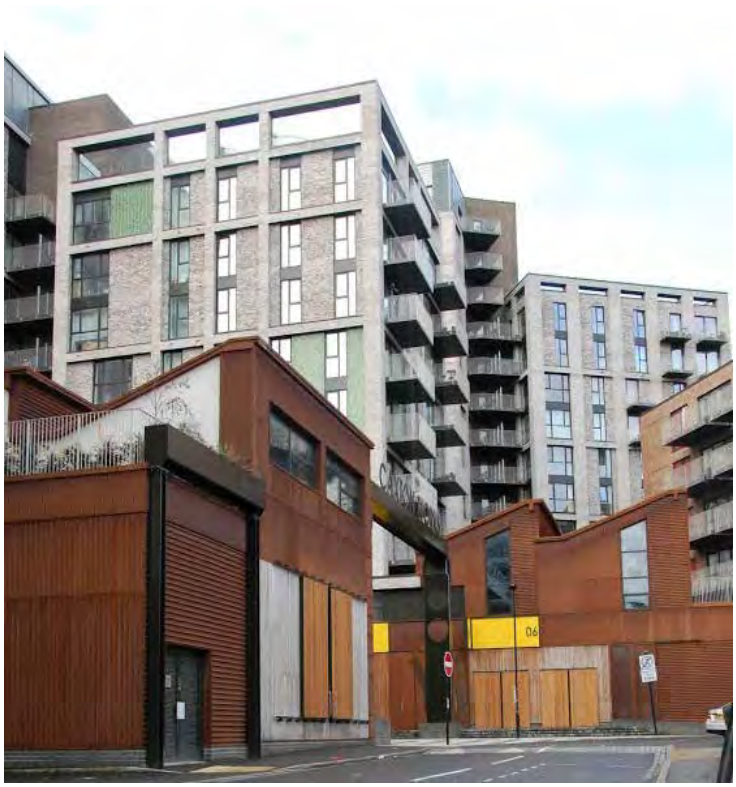
Site area: 0.89 ha
Net density: 377DPH
Units: 336
Heights: 6-15 storeys

### Project overview

Caxton Works demonstrates the success of mixing light- industry, commercial and residential uses. The scheme by U+I and Galliard Homes regenerated the existing industrial buildings to provide 336 new homes and encourage 13 commercial units for creative uses.

### Other land uses

| Land use | Floorspace |
|---|---|
| B1 | 2,025 sq m |
| A3 | 64 sq m |




## S3, Eddington, Cambridge - Architects: Alison Brooks Architects -

Site area: 0.71ha
Net density: 261DPH
Units: 186
Heights: 4-5 storeys

### Project overview

Consisting of 5 interlocking L and S-shape forms, the scheme draws upon the idea of the 19th century warehouse. Communal co-working foyers activate ground floor entrances. Undulating roof forms animate the skyline. Glazed bricks that subtly change colour from east to west form an important aspect to the refined simplicity of the elevations.

### Accommodation schedule

| Typology | Number of units |
|---|---|
| Studio | 51 |
| 1 bed | 55 |
| 2 bed | 73 |
| 3 bed | 7 |

### Parking

| Number of spaces | Parking ratio |
|---|---|
| Car parking 194 (including 11 disabled) | 1.04 |
| Cycle parking | 384 (195 dedicated spaces in each home facilitated by wide corridors and lifts) |

Image credit: Hill with Alison Brooks Architects

## Silchester Housing, London – Architects: Haworth Tompkins

Site area: 0.92 ha
Net density: 122 DPH
Units: 112
Heights: 20 storeys

### Project overview

The Silchester Housing scheme delivers new mixed tenure homes as part of an existing housing estate near to the Circle and Hammersmith and City tube lines in London. The scheme integrates an existing twenty storey residential block with a range of newer buildings that range from 3 to 10 storeys which are arranged to reinforce existing residential street patterns and animate corners with community spaces and retail. The qualities of Peabody's existing nineteenth century housing estates and terrace houses provide the reference point for the choice of materials and the regular repeated proportions of windows and doors create subtle horizontal and vertical rhythms characteristic of traditional London housing.

### Accommodation schedule

| Typology | Number of units |
|---|---|
| 1 bed | 43 |
| 2 bed | 33 |
| 3 bed | 23 |
| 4 bed | 10 |
| 5 bed | 3 |
| Total | 112 |

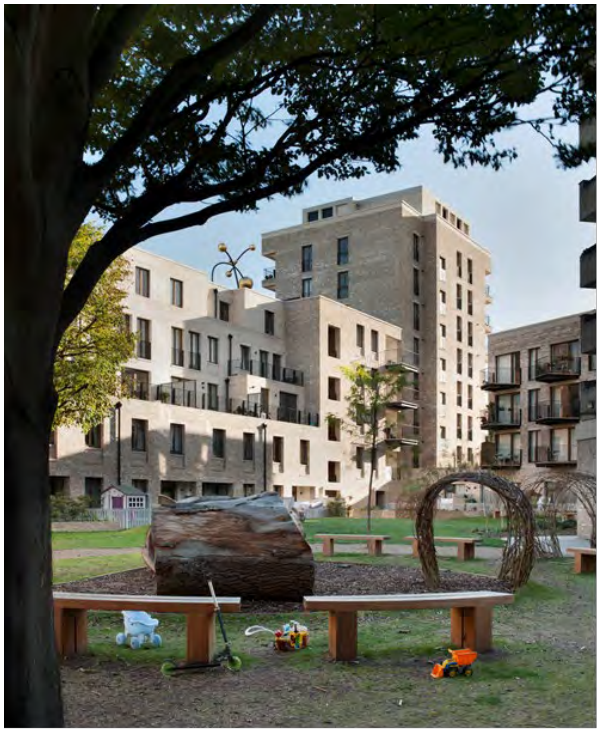
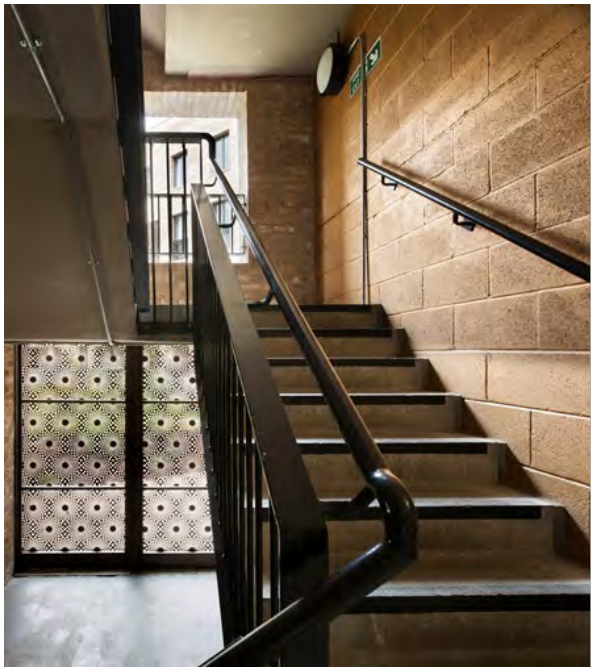


Photo credit: Philip Vile/Haworth Tompkins



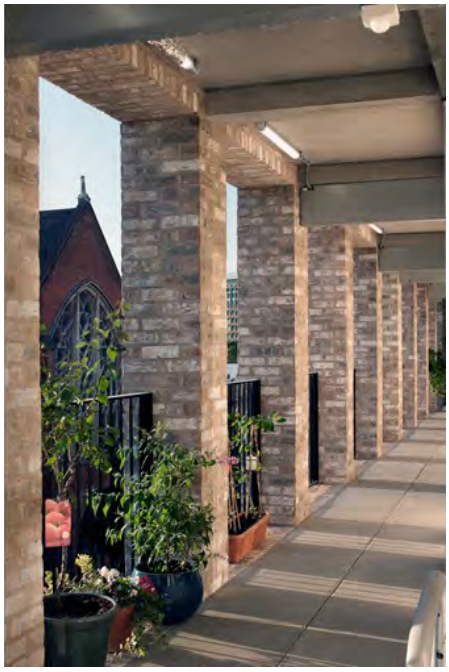


Photo credit: Philip Vile/Haworth Tompkins

## 95 Peckham Road, London – Architects: Peter Barber Architects

Site area: 0.13 ha
Net density: 769HR/HA
Units: 33
Heights: 2-6 storeys

### Project overview

95 Peckham Road occupies the site of a former petrol filling station and creates a well-designed tenement style mansion block located in a prominent location on the North side of Peckham Road in Southwark, London. The building's stepped profile creates a sunny south facing roof terrace for each apartment and utilises par 2, part 4 and part 6 storey forms. The proposals create 8 affordable homes and 10% (4 units) are wheelchair accessible and meet the GLA Lifetime Homes Standards.

### Accommodation schedule

| Typology | Number of units |
|---|---|
| Studio | 1 |
| 1 bed | 13 |
| 2 bed | 12 |
| 3 bed | 6 |
| 4 bed | 1 |
| **Total** | **33** |

### Parking

One disabled car parking space is included as part of the mews on the western side of the development.

Image credit:© Morley von Sternberg

Image credit: ©Morley von Sternberg

## Regent's Park Estate, 'Caudale', Camden, London – Architects: Mae

Site area: 0.12
Units: 8
Heights: 3-5 storeys
Other Land uses: Community hall

### Project overview

Caudale creates a terrace off homes that is bookended by a distinctive apartment block that together respond to the rhythm and façade composition of the surrounding buildings. Caudale delivers 8 new homes as part of a series of estate regeneration schemes that will deliver a total of 116 units across the estate. This particular site comprises 3 townhouses and 5 apartments to deliver a mix of homes to provide large family housing alongside apartments to meet different household structures and needs. The apartments are designed to provide generous internal layouts that allow ease of movement and are wheelchair accessible with level access balconies. Along with large, recessed balconies, other amenity space is provided in the form of roof terraces.

### Accommodation schedule

| Typology | Number of units |
|---|---|
| 1 bed | 1 |
| 2 bed | 1 |
| 3 bed | 5 |
| 4 bed | 1 |
| Total | 8 |

Image credit: Tim Crocker

Image credits: Tim Crocker

**Bourne Estate, Clerkenwell, London – Architects: Matthew Llyod Architects**

Site area: 1.07 ha
Net density: 225DPH
Units: 75
Heights: 5 storeys

**Project overview**

This scheme provides 75 new residential units in a mix of tenures, with improved public realm and open spaces, on the Grade II listed Bourne Estate in London Borough of Camden. Sitting partially within the Hatton Garden Conservation Area, the Bourne Estate is a key example of early, innovative LCC housing estates built in 1901 – 1903. The new housing derives from and responds to the original architecture: fine brick detailing emulates the pride and care shown in the old buildings, while the footprints of the new blocks respond to those of the adjacent buildings to create a positive rhythm and hierarchy of spaces. Encompassing both buildings and landscape, the new design creates vistas while clearly defining key routes and boundaries. Multiple ground floor entrances in the new blocks provide activity at street level. In keeping with the original buildings, the design includes secure shared access balconies for at most 3 flats, open to the air, as well as private balconies or gardens.

**Accommodation schedule**

| Typology | Number of units |
|---|---|
| 1 bed | 23 |
| 2 bed | 35 |
| 3 bed | 14 |
| 4 bed | 3 |
| **Total** | **75** |

**Other land uses**

| Land use | Floorspace Sqm |
|---|---|
| D1 Community use | 9, 216 sq m |
| Energy centre | 1 |

Photo credits: Ben Luxmoore

Photo credits: Ben Luxmoore

# Working

# // Moving beyond traditional mixed-use forms and employment models

To realise the scale of the opportunity, NEC needs to aspire to a condition beyond the mixed-use norm and look to capturing a more varied and radical composition. The examples in this section all show aspects of what might be possible.

Bringing uses closer together through clever stacking and providing employment activity as part of the mix can support the evolution of a rich economic ecosystem and can build better places. Imaginative mixed-use compositions can facilitate compact, complex and convivial neighbourhoods that underpin a more sustainable model of urban growth.

## Builders Merchants and Student Housing, Kings Cross, London - Architects: Cooley Architects

Units:
Heights: 6-10 storeys
Use types: B2 use and B8 use

### Project overview

The scheme is an example of how industrial and residential uses can be designed to coexist. This hybrid mixed use building accommodates a Travis Perkins Builders' Merchants on the ground floor with part mezzanine, with a 563 room Unite student accommodation above.

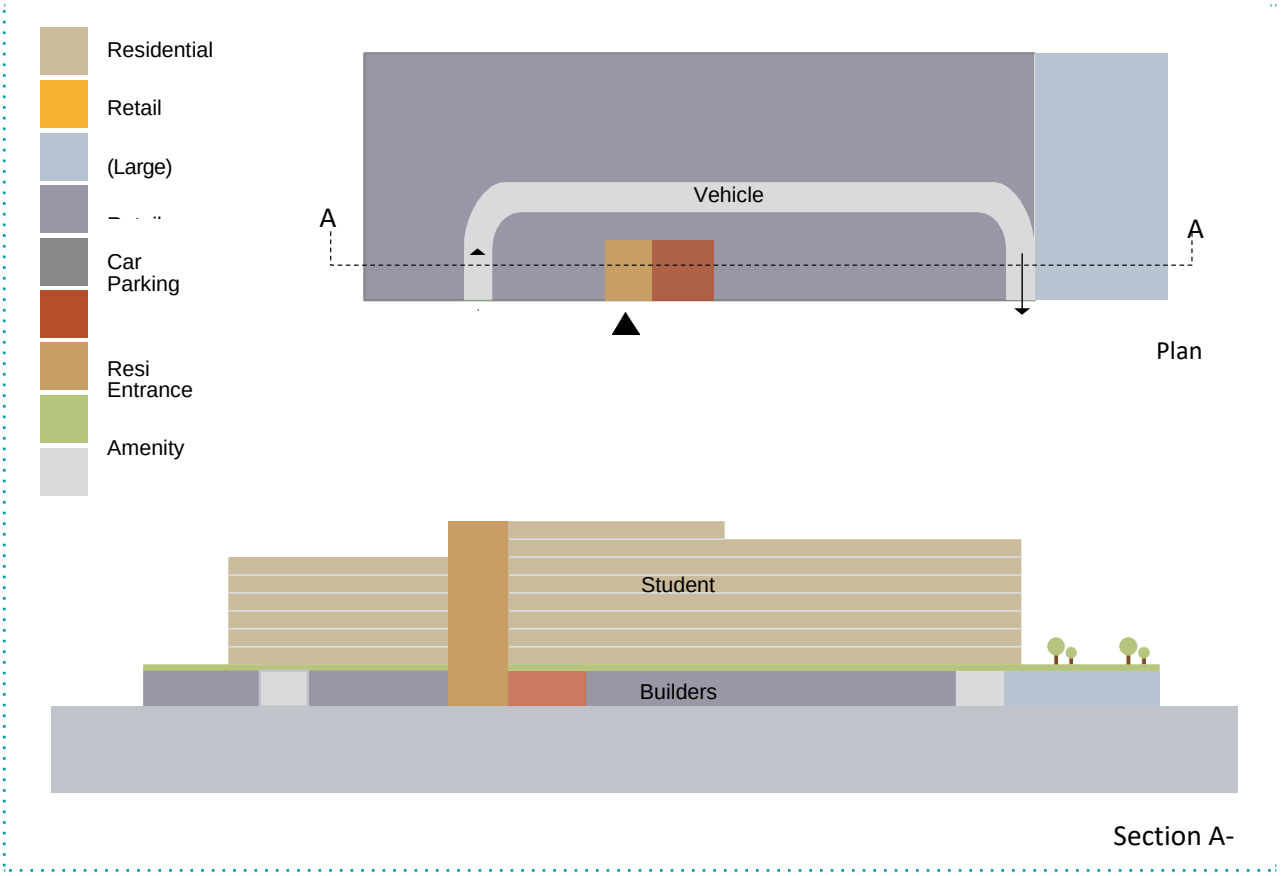
### Other land uses

| Land use | Floorspace (sqm) |
|---|---|
| B2, B8 and Sui-Generis use commercial (light industry, research and offices) | 3,877 sq m |

### Precedent for:

- Co-location of industrial and residential use
- Hybrid stacked mixed use form
- Innovative design through separate access points
- Sound mitigation between industrial and residential uses

Image credit: Cooley Architects




Plan view (top) and cross section (bottom) illustrating composition of different uses and functions

## Gewerbehof Laim, Munich, Germany - Architects: Bogevischs Buero

Site area: 1.1 ha
Heights: 5 storeys
Uses: B2 use

### Project overview

The scheme in Munich provides solution to the pressure on industrial land. The site is one of ten Gewerbehofe built by the City Council providing high-density small industrial uses such as joinery, leather workshops, garment manufacture and fine metalwork. The scheme provides four goods lifts that are oversized to accommodate machinery and lift trucks.

### Land use

| Land use | Floorspace (sqm) |
|---|---|
| B1, B2 | 11,000 sq m with units from 40 sq m |
| Shared yard space | 1,500 sq m loading and marshalling areas to internal access corridors |

### Precedent for:

- Stacked industrial space
- Good lifts for vertical movement of materials


Image credit: Bogevischs Buero Architecture architekten & stadtplaner Gmb -Michael Heinrich. Client: Muenchner Gewerbehof- und Technologiezentrumsgesellschaft mbH

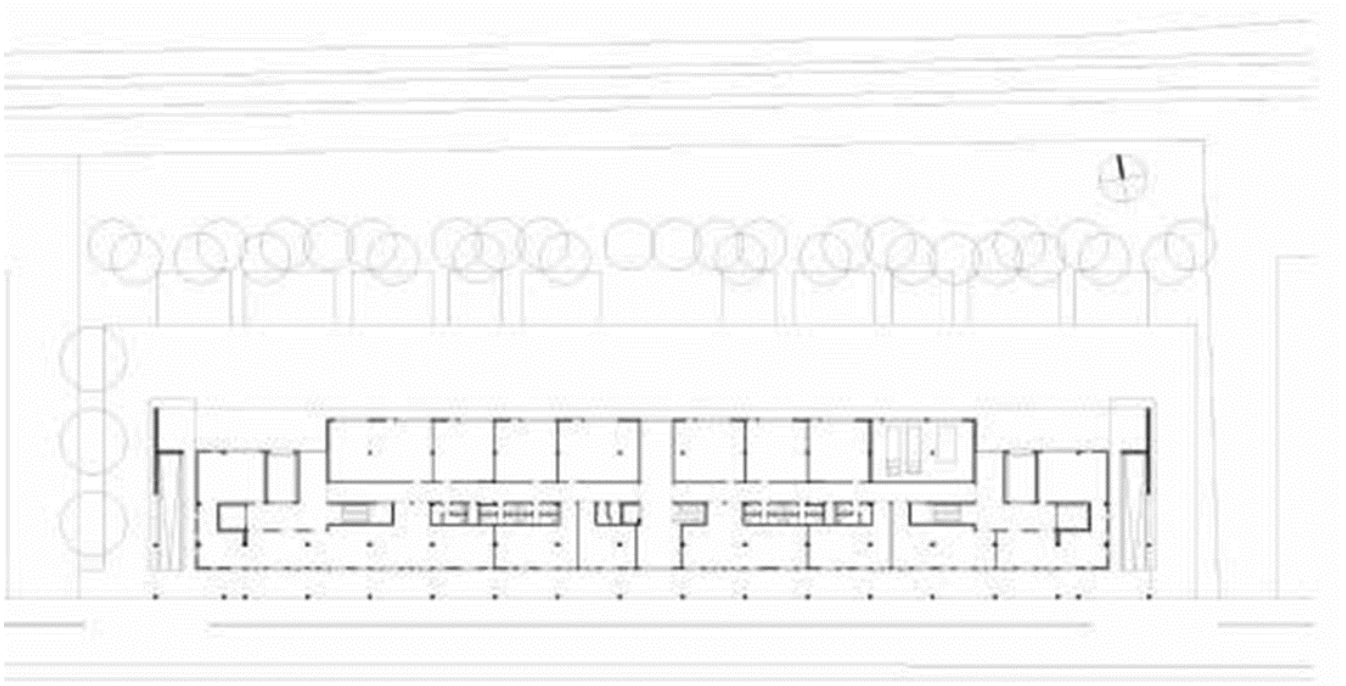


Image credit: Bogevischs Buero Architecture architekten & stadtplaner Gmb - Michael Heinrich. Client: Muenchner Gewerbehof- und Technologiezentrumsgesellschaft mbH

## Bradfield Centre – Architects: Aukett Swanke

Floorspace: 4,523 m2
Heights: 1-3 storeys

### Project overview

The Bradfield Centre was constructed for Trinity College on the Cambridge Science Park and involved the recycling of one of the first-generation building plots at the heart of the. The building is named after the Bursar who was instrumental in instigating the Science Park and exploits its location alongside one of the Park's lakes. The distinctive arc-shaped plan creates a vibrant centre for research and development and provides a hub for start-up businesses and companies seeking to collaborate and mix with existing science-based businesses in the Park.

The Hub provides space under a membership arrangement where individuals can use the space and facilities or where larger groups can take a dedicated 'private pod' space, all sharing the common facilities.

### Parking

| Parking | Amount |
|---|---|
| Car | 105 |
| Cycle | 168 |

# Mixing uses

## The Sun Ship, Freiburg, Germany – Architect: Rolf Disch

Site area: 1.1 ha
Units: 60
Heights: 3-5 storeys

### Project overview

The Sun Ship scheme provides an ecologically sustainable, vertical mix of office, commercial and residential uses. Homes and offices are supplied energy from solar panels, reducing energy consumption on site.

### Accommodation schedule

| Typology | Number of units |
|---|---|
| 1-2 bed flat | 51 |
| Penthouse | 9 |
| **Total** | **60** |

### Other land use

| Land use | Floorspace |
|---|---|
| B1 officers | 3,600 sq m |
| B1 commercial | 1,200 sq m |

### Precedent for:

- Co-location of commercial and residential
- Stacked mixed use form
- Localised energy production

## Bernard Works, South Tottenham - Architects: Duggan Morris Architects

Site area: -
Heights: 1-7 storeys

### Project overview

Innovative mixed use scheme combining affordable workspace units, with 99 residential units and 25,000 sq ft (2622 sqm) commercial space.

The site forms part of Haringey Council's Tottenham Area Action Plan, which seeks to identify potential areas for employment-led mixed-use redevelopment.

Image credit: Urban & Civic PLC

## The Scene, Walthamstow, London - Architect: Pollard Thomas Edwards

Site area: 0.67 ha
Units:244
Heights: 2-5 storeys

### Project overview

The Scene is a new corner plot providing an active and vibrant public space. The site provides mixed-uses with 121 residential units with 60% affordable housing. The Scene accommodates a cinema, public square and range of housing typology with car-free access.

### Accommodation schedule

| Typology | Number of units |
|---|---|
| One-bed flat | 31 |
| Two-bed flat | 73 |
| Three-bed flat | 3 |
| Three-bed house | 10 |
| Four-bed house | 4 |
| **Total** | **121** |

### Other land uses

| Land use | Floorspace (sqm |
|---|---|
| B1 Retail | 2322 sq m |

### Precedent for:

- Town centre and high street
- Wrapping and capping large commercial use

Image credit: MØller Danmark A/S and Pollard Thomas

## Hand Axe Yard, London – Architects: Material Architects

Site area: 0.29 ha
Net density:  206 DPH
Units: 60
Heights: 2-8 storeys
Other land uses: Flexible B1 space, café/gallery, gym and public open space

### Project overview

Hand Axe Yard creates a mixed-use development on the site of a former land-locked warehouse within the Kings Cross Conservation Area. The scheme provides 60 new private and affordable homes (62,000 sq ft), flexible B1 spaces (11,000 sq ft), a gym (2,000 sq ft) and a new oasis of public realm in a busy part of the city

### Accommodation schedule

| Typology | Number of units |
|---|---|
| Studio | 4 |
| 1 bed | 20 |
| 2 bed | 24 |
| 3 bed | 12 |

Image credit: Phillip Durrant

## Essoldo House, King's Road Cinema, Chelsea, London – Architects: Nick Shipp

Site area: 0.89 ha
Net density: 123 DPH
Units: 11
Heights: 5 storeys
Other Land uses: Cinema and retail

### Project overview

No. 279 King's Road in London is located in the heart of Chelsea. The redeveloped site has created a new mixed-use development and comprises 3 retail units, a cinema and 11 residential apartments. The main King's Road façade responds strongly to the prevailing streetscape character and the design helps tie together the adjacent two building blocks.

### Accommodation schedule

| Typology | Number of units |
|---|---|
| 1 bed | 1 |
| 2 bed | 6 |
| 3 bed | 4 |
| **Total** | **11** |

Image credit: Nick Shipp

## Hobhouse Court, Whitcomb Street, London – Architects: Brisac Gonzalez

Site area: 0.165ha
Units: 22
Heights: 6 storeys

### Project overview

The proposal is located within two very different conditions: the grander scale of the southern Trafalgar Square end, positioned in the Trafalgar Square conservation area, and the smaller scale and more sensitive character parts of the northern end, which greatly contrasts the south and is accordingly located in the St. James's conservation area.

The building façades are distinctly contemporary but sensitively reflect the richness, grain and materiality of the surrounding context. The textured and folded surfaces go a long way in amending the quality of the street that has been compromised by the larger buildings on the eastern side, whilst creating interest through dynamic architecture.

### Accommodation schedule

| Typology | Number of units |
|---|---|
| Studio | 2 |
| 1 bed | 7 |
| 2 bed | 5 |
| 3 bed | 8 |
| **Total** | **22** |

### Other Land uses

| Land use | Floorspace (sqm) |
|---|---|
| B1 | 1,400 sq m |
| A1 | 850 sqm |
| Public Art Gallery (D1) | - |

Photo credit: Brisac Gonzalez

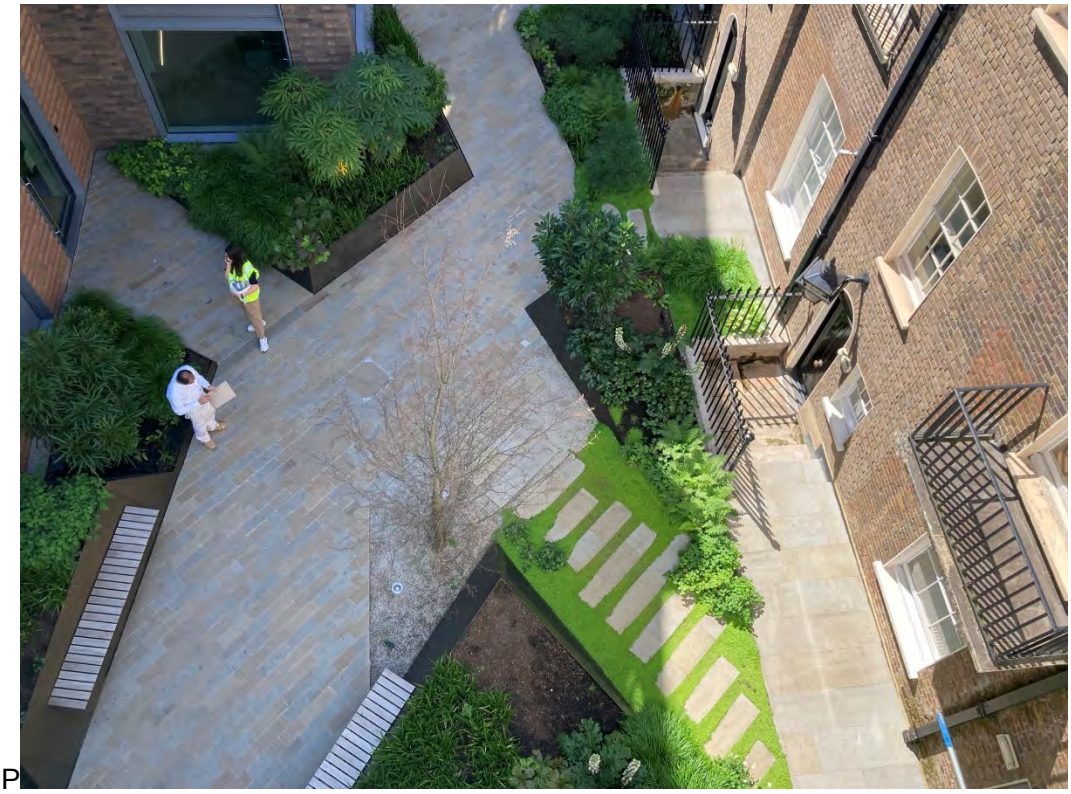


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Photo credit Brisac Gonzalez

## Brentford Lock, London – Architects: Mikhail Riches

Site area: 2.13 ha
Units: 150
Heights: 5-8 storeys

### Project overview

Text to follow.

### Accommodation schedule

| Typology | Number of units |
|---|---|
| 1 bed | 37 |
| 2 bed | 64 |
| 3 bed | 43 |
| 4 bed | 6 |
| **Total** | **150** |

### Other Land uses

| Land use | Floorspace (sqm) |
|---|---|
| B1 | Approx. 7,000 sqm |
| A3/A4 | 860 sqm |
| D1/D2 | 860 |
| Bus depot | 2,107 |

Image credit: Mark Hadden Photography and Mikhail Riches

Image credit: Mark Hadden Photography and Mikhail Riches

# School

## Marlborough Primary School, London - Architects: Dixon Jones Architects

Site area: 0.29 ha
Heights: 2-5 storeys

### Project overview

This primary school provides external play spaces with linked teaching spaces accommodating 60 primary school spaces and 26 nursery spaces, through a land efficient form. The scheme represents an innovative solution to education provision.

### Other land uses

| Land use | Floorspace (sqm) |
|---|---|
| Offices, retail, school and community room | 4,095 sq m |


Image credit: Paul

## New Islands Brygge School, Copenhagen – Architects: C.F Møller

Site area: 0.98 ha
Heights: 2-5 storeys

### Project overview

The New Islands Brygge School is a middle school designed around sensory experience. The classrooms each have access to the rooftop that provides outdoor activity space, sports area and gardens that are used by the pupils in cooking classes. The scheme provides space for 784 students and is prime example of how a new school can be integrated into an inner-city space.

### Land uses

| Land use | Area (sqm) |
|---|---|
| Internal floorspace | 10,000 sq m |
| External floorspace | 4,000 sq m |

Image credit: C.F Møller Danmark

## Ashmount Primary School – Architects: Penoyre & Prasad

### Project overview

The scheme is an exemplar for carbon-negative development, which includes on site renewables and CHP to school buildings and to neighbouring existing housing. The innovative approach to community energy distribution has earned the scheme a BREEAM Outstanding Award for the Highest Scoring Project in the Education Sector.


Image credit: ©Penoyre & Prasad


Image credit: Penoyre & Prasad

Image credit: © Morley Von

## The Royal Wharf Primary School London – Architects: Feilden Clegg Bradley Studios

Site area: 0.45 ha
Heights: 2-3 storeys
Other use: Rooftop MUGA (614 sq m)

### Project overview

Royal Wharf Primary School is a new build ‘Free’ school at the heart of the Royal Wharf masterplan. It will provide accommodation for 420 pupils and 60 nursery pupils in two-form entry.

The school’s position on the corner of the high street and fronting onto a pocket square, gives a civic aspect to the new public spaces of Royal Wharf. The building is conceived as a solid object, made from one material, carved and honed to create a connection between playground spaces and to break down the volume. Within the school, there are a series of diverse spaces created for the children which connect between the different levels, both physically and visually. These encourage learning from others and a sense of inquisitiveness. A rooftop games area and outdoor spaces, which cater for many kinds of play and learning, complement the indoor spaces. The new building is naturally ventilated and with lots of natural daylight.

Image credit: Feilden Clegg Bradley Studios

## St Mary's RC Primary School, Battersea – Architects: Feilden Clegg Bradley Studios

Site area: 0.45 ha
Heights: 2 storeys
Land uses: Primary School, nursery and rooftop MUGA (520 sq m)

### Project overview

The new building was constructed for an existing school previously on the site and provides an inspiring teaching environment at the heart of the mixed-use 'Battersea Exchange' development. The school has its front door located onto a new public square and is then arranged around a central courtyard and a series of terraced play spaces including a spectacular roof-top multi-use games area, all of which offer a fantastic foundation for learning.

The Roman Catholic Diocese invested in enhanced space standards beyond then-EFA guidance. Exposed thermal mass, natural ventilation, high levels of daylight, bright and generous circulation spaces and a variety of outdoor landscapes all contribute to lifting the character and quality of the school environment. Early Years and Key Stage 1 classrooms all have access to external space and a big slide provides joyful access to the central courtyard.

Image credit: David Christian

Image credits: David Christian

# Community

## Bethnal Green Mission Church – Architects: Gatti Routh Rhodes Architects

Site area: 0.06 ha
Units: 15 (including vicarage)
Heights: 6 storeys

### Project overview

Bethnal Green Mission church is an example of a successful civic space. The hybrid mixed use building provides a double height community hall (basement), two storey church (ground and first floor), charity and co-working spaces (first floor) with dual aspect residential homes above including a 4 bedroom vicarage. The development was a result of an innovative partnership between the church and Thomsett Group who acted as developer.

### Land use

| Land use | Floorspace (sqm) |
|---|---|
| Residential | 1,226 sq m GIA |
| Community/Church | 539 sq m GIA |
| Office | 209 sq m GIA |
| Overall | 1,974 sqm GIA |

Image credit: Gatti Routh Rhodes Architects and Jack Hobhouse

## Storey's Field Community Centre & Nursery, Eddington, Cambridge – Architect: MUMA

### Project overview

Designed for the University of Cambridge the building provides a civic focal point for the new community of Eddington accommodating a community centre, art performance hall and nursery. The building and has been specifically designed to be highly sustainable (BREEAM outstanding) and adapt to a wide range of activities and events from weddings to conferences, playgroups and Zumba classes to music concerts. Natural ventilation has been elegantly integrated into the building, with the triple- storey volume of the main, that allows for variable acoustics, passively ventilated using an underground labyrinth. Drawing from cloister typologies, the nursery is arranged around a landscaped courtyard providing secure play for children without the need of a fence.

## Frampton Park Baptist Church and housing, London – Architects: Matthew Lloyd

Site area: 0.179ha
Net density: 759 HR/H
Units: 47 apartments
Heights: 3-8 storeys
Land uses: Church, café, community buildings, residential

### Project overview

The Frampton Park scheme creates 47 new apartments in 3 new residential blocks which enabled a new church building, café and community facilities to be delivered on the Park Estate in Hackney. The new buildings vary the horizontality of the post-war estate, while drawing on the context of the existing buildings in materials, details and the treatment of entrances and windows to create a rich architectural language. A courtyard garden formed by the new housing is open to the street and shared with the public; a 'village green' in front of the church provides for community gatherings and events, and a corner space is enlarged and re-landscaped to accommodate the church's community gardening project. The new church building replaces a 1950s church in poor condition and accommodates the thriving congregation's many activities and services, previously scattered across the estate, under one roof. The scheme won a Housing Design Award in 2016.

### Accommodation schedule

| Typology | Number of units |
|---|---|
| 1 bed | 19 |
| 2 bed | 16 |
| 3 bed | 12 |
| **Total** | **47** |

Image credit: Ben Luxmoore

Image credits: Ben Luxmoore

## Clay Farm Centre, Trumpington, Cambridge - Architects: ADP Architects

Site area: 0.3ha (approx.)
Net density: Not known
Units: 20 affordable units
Heights: 5 storeys (ground, first and second form the community element with third and fourth being affordable units.

### Project overview

The Clay Farm Centre delivers community facilities including a library, doctor's surgery and community run café, along with community rooms and associated touch down space as part of the development of Clay Farm at Trumpington in Cambridge. It was built to provide facilities for the whole village and complements other community facilities already in Trumpington such as the village hall and King George V pavilion. As with the other village facilities, Clay Farm Centre is run by the local community and managed by Cambridge City Council.

The building occupies a prominent place in the development fronting onto Hobson's Square and the height needed to hold this new urban square is provided by the addition of 20 affordable units on the upper two floors. These units are car free and benefit from the excellent public transport an, walking and cycling links provided by the new development.

The Clay Farm Centre delivered:

- Community Centre – multi use hall and meeting rooms
- Library
- Community Café
- Youth facility
- Touchdown space – police and social services and others
- Medical Centre
- 20 affordable housing units

### Accommodation schedule

| Typology | Number of units |
|---|---|
| One bedroom | 12 |
| Two bedroom | 8 |

### Parking

22 car parking spaces including 5 for disabled drivers
98 cycle parking spaces including 28 for the residential units

P

Image credit: Greater Cambridge Shared Planning Service

# Day To Day Needs

## Lawley Square, Telford – Architects: Stephen George & Partners

Site area:0.82 ha
Net density: 73 DPH
Units: 60
Heights: 2-4 storeys

### Project overview

Designed by Stephen George & Partners as part of a larger urban extension, this development in Lawley Square includes a Morrisons supermarket, retail units with residential apartments above. The scheme illustrates how 'big box' uses can be wrapped with smaller uses to become more compatible with fine grain settings.

### Other land uses

| Land use | Floorspace (sqm) |
|---|---|
| A1 Supermarket | 3715 sq m |
| A3 / A4 / A5 Retail | 222 sq m |
| Car parking spaces | 220 |

### Precedent for:

- Provision of residential alongside retail
- Wrapping of large format supermarket with other close grain uses
- Integrated service corridor for 'high street' shops

Image credit: Stephen George + Partners

## De Leir, Westland, Netherlands – Architects: Roeleveld-Sikkes Architects

Site area: 1.9 ha
Heights: 2-3 storeys

### Project overview

The Albert Heijn (AH) supermarket forms one end of this wider site development. The residential aspect is buffered from the busy car park and basement car parking accesses by a rooftop garden and a set-back which allows the apartments to front the main street creating 2-storey facades on the high street.

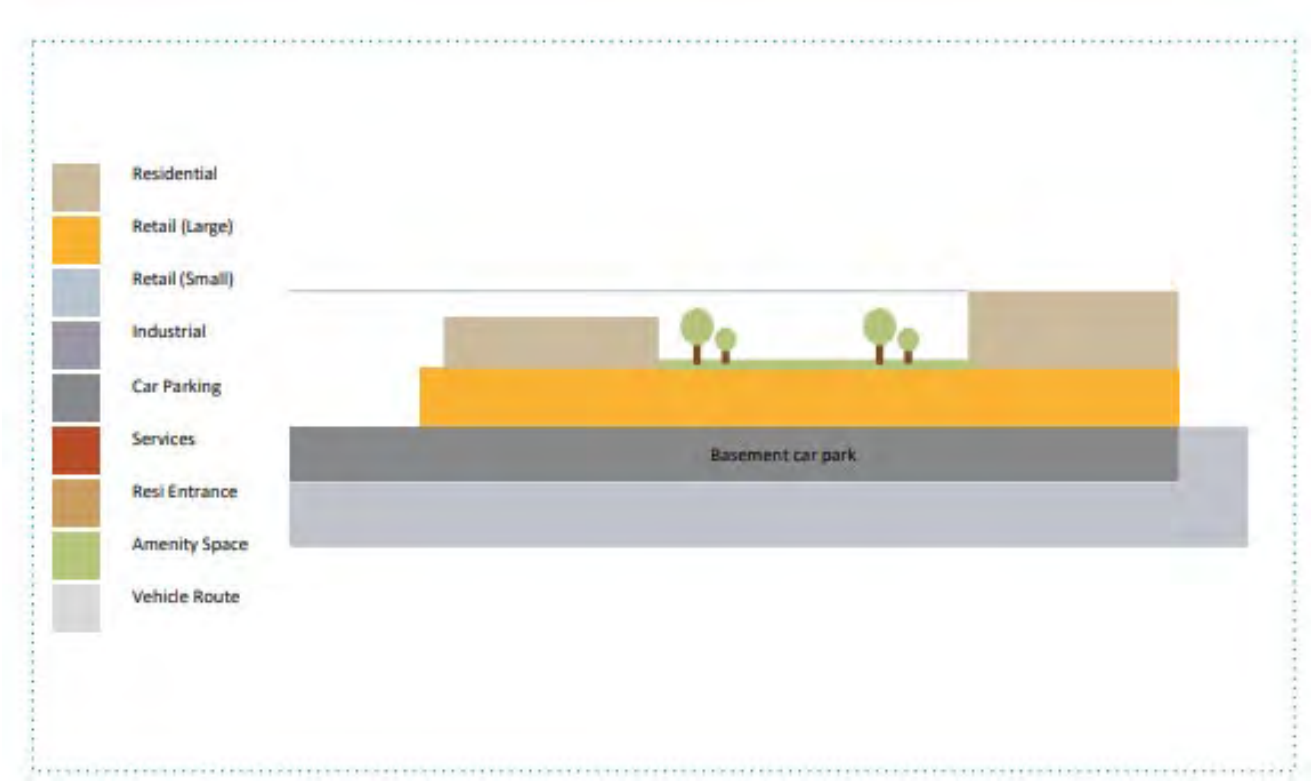
### Land use

| Land use | Floorspace (sqm) |
|---|---|
| A1 Supermarket | 1900 sq m |
| A3 / A4 / A5 Retail | 1115 sq m |
| Surface-level car parking | 465 sq m |

### Precedent for:

- Co-location of residential and retail
- Capping large format uses with residential
- Manipulating facades of mono-use to give the appearance of a close grain plot subdivision.

Image credit: Roeleveld-Sikkes Architects




Diagrammatic cross section (bottom) illustrating layering of different uses and functions


Wider site plan showing scheme in context (Roeleveld-Sikkes Architects

## Sainsbury's Lot 1, Eddington, Cambridge – Architects: Wilkinson Erye & Mole Architects

Site area: 2.4 ha
Units: 117
Heights: 3-5 storeys (excluding energy centre)

### Project overview

Forming part of the new local centre at Eddington, Lot 1 is a mixed-use scheme including a foodstore, energy centre, doctor's surgery, offices and residential units. Large footprint uses of the foodstore, associated service yard and Energy Centre are 'wrapped predominantly by duplex units, which creates active edges on the majority of streets. The Sainsbury's supermarket provides parking beneath the foodstore.

### Accommodation schedule

| Typology | Number of units |
|---|---|
| 1-bed flat (key worker) | 41 |
| 2-bed flat (key worker) | 76 |
| Total | 117 |

### Other land uses

| Land use | Floorspace |
|---|---|
| A1 Suprtmarket<br>A1/A4 Retail | 2,000sq m |

### Precedents for:

- Wrapping large format supermarket with residential
- Delivery of active street-frontages
- Integrated energy centre


Image credit: Jack

## Sainsbury's, Fulham Wharf, London – Architects: Lifschutz Davidson Sandilands

Site area: 3.15 ha
Net density: 446DPH
Units: 645
Heights: 3-17 storeys

### Project overview

This development from Barratt London and London Quadrant demonstrates the success of mixing retail alongside residential. The ranging residential typologies are stacked on top of the supermarket and restaurants and cafes are centred around a shared courtyard space. Car park has sensors to reduce vehicle circulation looking for an available space.

### Accommodation schedule

| Typology | Number of units |
|---|---|
| 1-bed flat | 153 |
| 2-bed flat | 205 |
| 3-bed flat | 84 |
| 4-bed flat | 22 |
| 5-bed flat | 8 |
| **Total** | **472** |

### Other land uses

| Land use | Floorspace (sqm) |
|---|---|
| A1 Supermarket | 9395 sq m |
| A3 / A4 Restaurant & Cafe | 731 sq m |
| D1 / D2 Community facility & Gym | 398 sq m |

### Precedent for:

- Co-location of residential and retail
- Wrapping and capping of large format supermarket with residential and amenity space.
- Use of smart technology in car park.

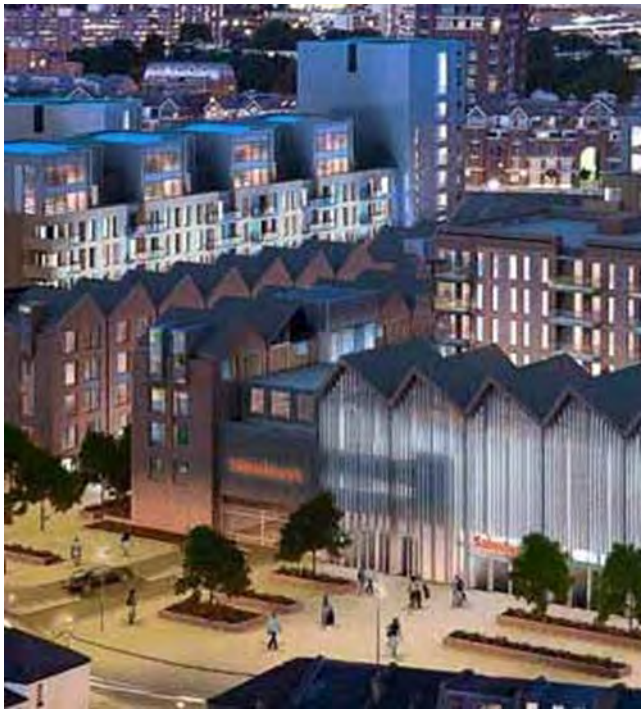



Image Credits: Barratt London

## Laindon Town Centre, Essex - Architects: C.F. Møller Architects and Pollard Thomas Edward

Site area: 5.66ha
Units: 244
Heights: 2-5 storeys

### Project overview

When completed the scheme will provide a vibrant mixed-use town centre with a new High Street. The site will allow for users to work, shop and live with flexible retail units, supermarket and a health centre.

### Accommodation schedule

| Typology | Number of units |
|---|---|
| One-bed flat | 57 |
| Two-bed flat | 81 |
| Two-bed house | 13 |
| Three-bed house | 54 |
| Four-bed house | 19 |
| **Total** | **244** |

### Precedent for:

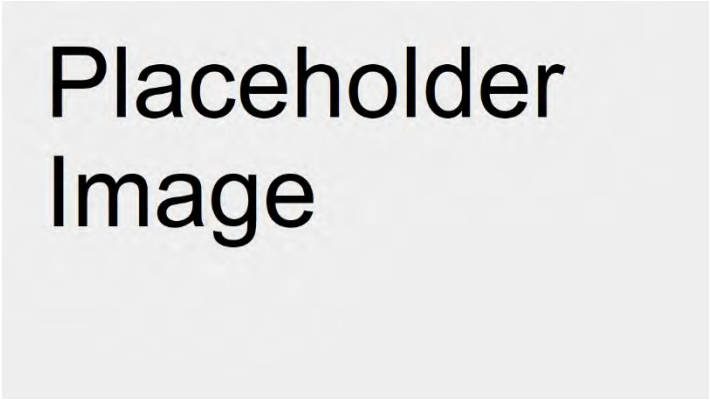
- Town centre + high-street redevelopment
- Variety of heights and roofscape

# Landmarks

## The Culture House Sunderland – Architect: Faulkner Brown

### Project overview

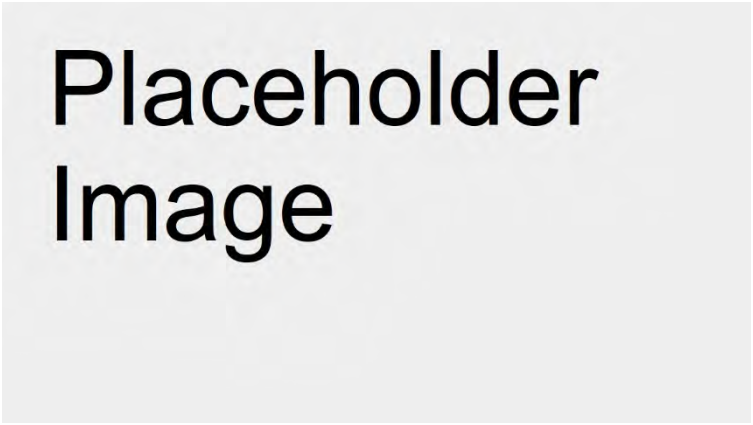
Cultural arts centre and library
Sunderland Riverside regeneration
Brick built




## Waldron Health Centre, London – Architect: Henley Halebrown

### Project overview

Civic square framed by a health centre, shops, café and housing
Amersham Vale, Deptford, London
Veneered rainscreen with central 5 storey foyer




## Lambeth Palace Library, London – Architect: Wright & Wright Architects LLP

### Project overview

Library and Archive (to house all Church of England records)
Lambeth Palace Road, London
Red brick building with central 9 storey tower crowned with a viewing platform

Image credit: ©Hufton+Crow

## Cambridge Central Mosque, Cambridge – Architect: Marks Barfield

### Project overview

New Central Mosque for Cambridge
Mill Road, Cambridge
Brick and timber building

Image: Greater Cambridge Planning Service

## Newport St Gallery – Architect: Caruso St John Architects

### Project overview

Private gallery for the artist Damien Hirst
Newport Street, London
Brick building with distinctive saw-tooth roof form

Image credit: ©Hélène Binet

## UCH2, University of Brighton – Architect: Proctor & Matthews Architects

### Project overview

Educational use on a key corner site
Priory Quarter, Hastings
Textured red brickwork pod set into reconstituted stone frame

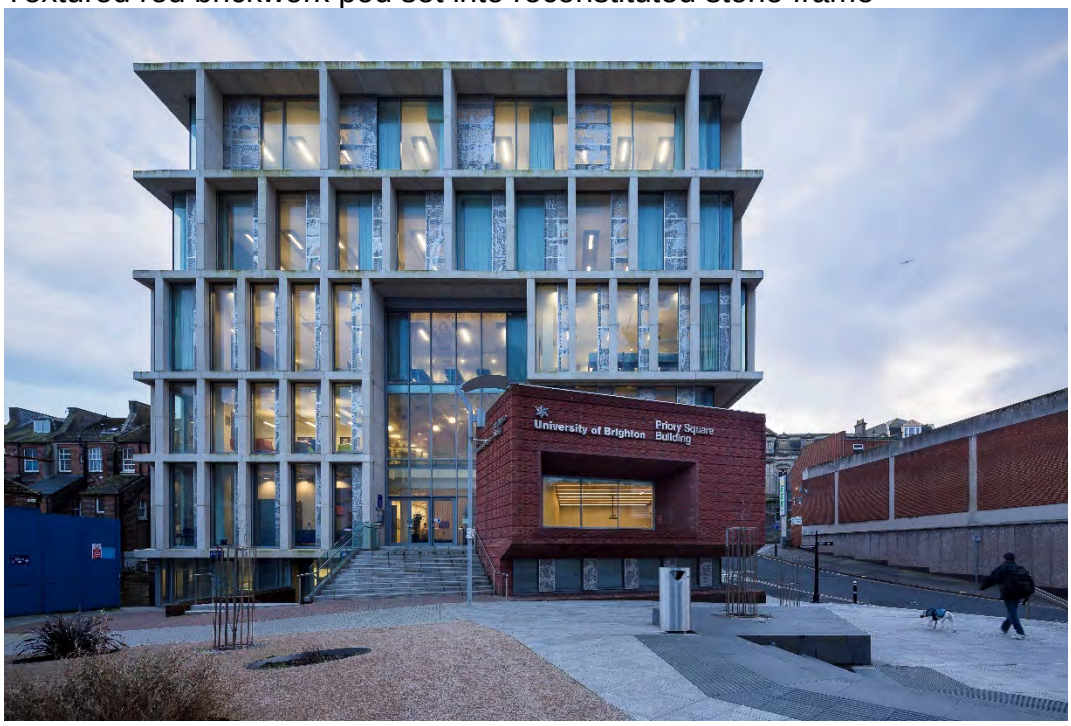



Image credit: Proctor & Matthews /Tim Crocker.

# Open Space

## Sonder Boulevard, Copenhagen, Denmark – Architects: SLA Architects

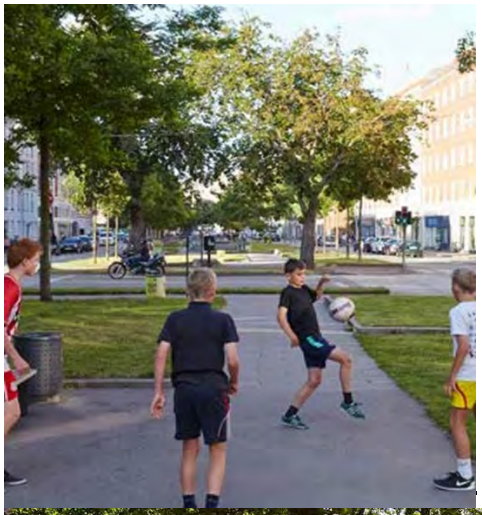
Site area: 1.6 ha

### Project overview

Located within Sonder Boulevard, the Copenhagen City Council developed a scheme to revitalise the under-utilised area on the street. They created a linear park with multi- functioning spaces for uses such as meditation gardens and open-air cafes and a BMX park. The scheme provides example of how to incorporate green infrastructure and activate public realm within urban built environments. The site also uses a SUDs strategy to deliver its sustainable approach.

### Precedent for:

- Use of SUDs
- Provision of play areas and public realm
- Revitalisation of under-utilised space
- Innovative design of small spaces



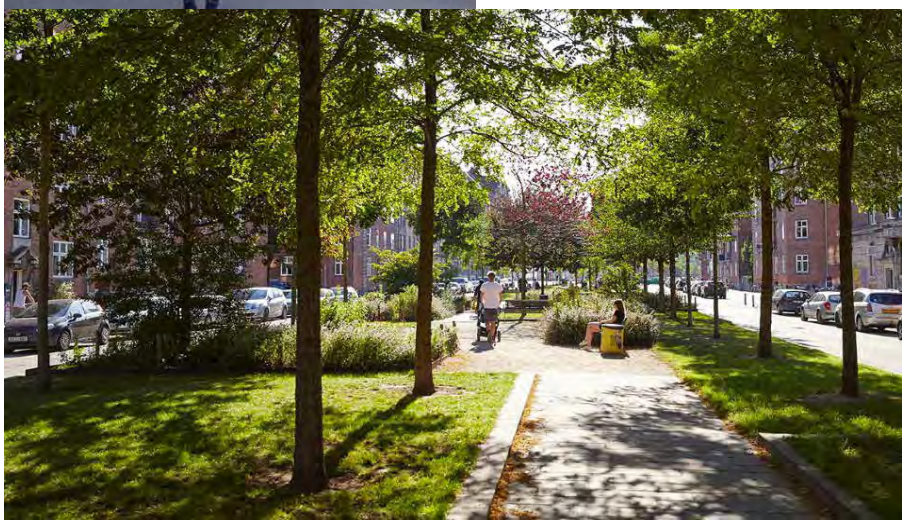


Image credit: SLA Architects

## Kidbrooke Village wetland and green corridor, London - London Wildlife Trust in partnership with Berkley Homes

### Project overview

Kidbrooke Village is being developed by Berkely Homes, that will see over 4,800 homes being built over the next 20 years along with 20 hectares of parkland to create a multi-functional green corridor. New landscaping was implemented in 2018 to ensure biodiversity net gain and includes rich meadows and wetlands that benefits both wildlife and residents.

### Precedent for:

- Implementation of SUDs
- High quality, multi-functional public open spaces
- Delivery of biodiversity and urban wetland

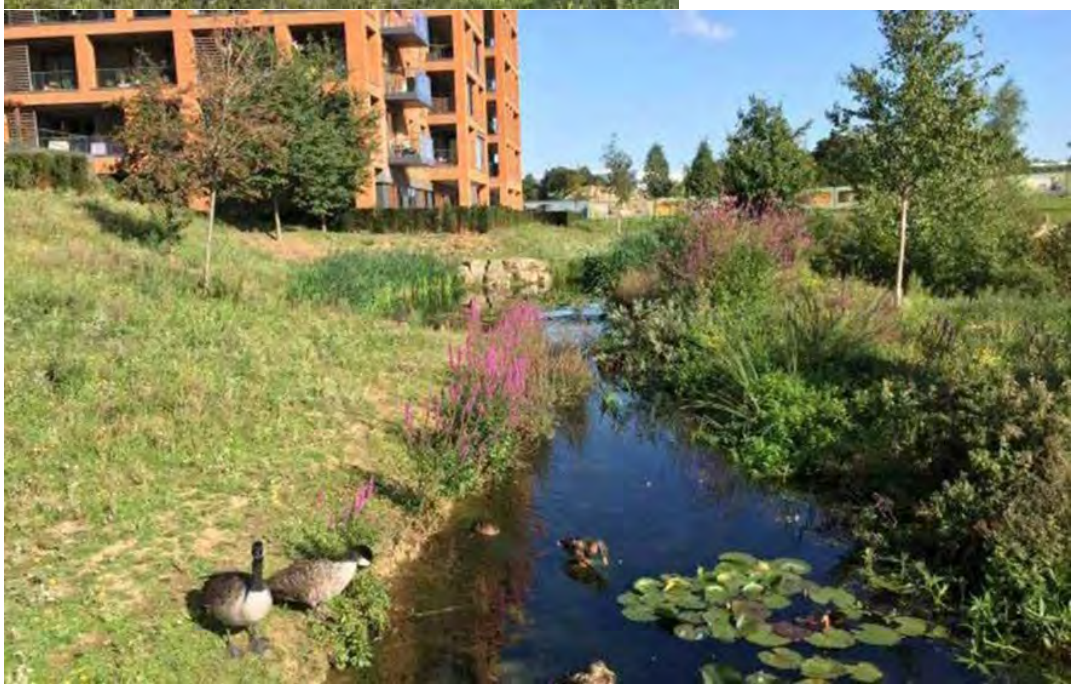


Image credit Rosie Whicheloe - London Wildlife Trust

## Eastern Curve Gardens, Dalston Junction, London

Site area: 0.25 ha

### Project overview

The Eastern Curve Gardens are located in Dalston Junction on a piece of disused railway land. The space provides community gardens and demonstrates the opportunity to create biodiversity in small urban spaces. The scheme encourages local residents to participate in events at the gardens such as wellbeing workshops, education programmes and music events. The gardens also hosts a café  where users can eat and socialise in this small and creative community space.

### Precedent for:

- Community-led spaces
- Disused railway development
- Delivery of biodiversity


Image credit: J&L Gibbons

## Tassinge Square, Copenhagen, Denmark – Landscape Architect: GHB Landscape Architects

Site area: 0.7 ha

### Project overview

Tassinge Square is a re-development of the existing under-utilised space in the centre of an urban residential street. The scheme demonstrates the successful use of SUDs to mitigate flooding from extreme rainfall through sculptures used to collect rainwater. The project also highlights the success of community participation in developing the space into an innovative and active green hub

### Precedent for:

- Implementation of SUDs
- High quality public open spaces
- Innovative community-led design

Image credit: GHBLandskabsarkitekter - Steven Achiam

## Tumbling Bay Playground, Olympic Park, Stratford – Architects: Erect Architecture

### Project overview

The Tumbling Bay Playground accommodates play areas, sensory experiences and is connected to a cafe and community hub. The scheme demonstrates the success of re-developing previously used sites such
as this from the 2012 Olympic Games with the legacy incorporated into the innovative design.

Image Credit: David Grandorge

Image credit: Alexander Hug

## Promenada Velenie, Slovenia – Architects: Enota Architects

Site area: 1.7 ha

### Project overview

The scheme transforms an unwelcoming thoroughfare by the river into an active public space. The project incorporates paths connecting community amenities surrounding the scheme demonstrating permeability for users. A bridge also connects the spaces either side of the river and enables local residents to host events in the community space provided.

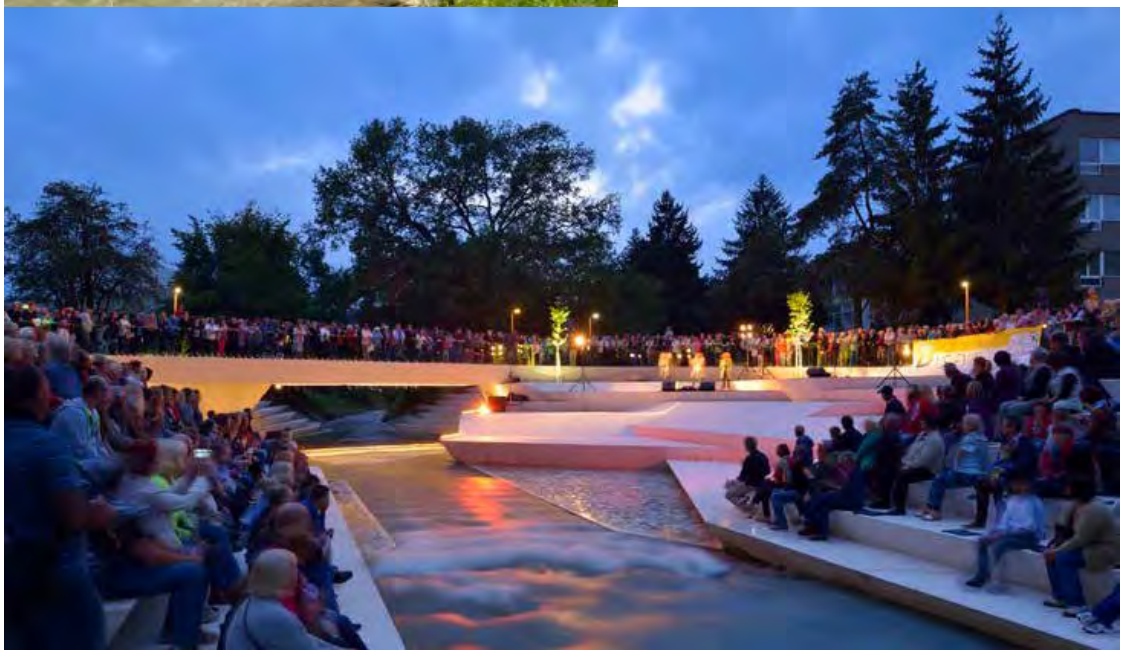


Image credit: Miran Kambic

## Swales, phase 1 Eddington, Cambridge – Design Team: AECOM

### Project overview

Native flower rich swale planting included within Eddington primary street and busgate street.

### Precedent for:

- Sustainable urban drainage
- Natural landscape area
- Biodiversity

## Madrid Rio, Spain - Architects: West 8, Burgos & Garrido Arquitectos Asociados, Porras La Casta Arquitectos & Rubio & Álvarez

Site area: 1740 ha

### Project overview

Madrid Rio is a series of large green spaces along a seven kilometre length of the River Mansanares. Designed on behalf of the Municipality of Madrid, the parkland hosts multiple functions with six designated districts formed of leisure, culture and sports facilities. New bridges are incorporated to increase pedestrian and cycle use. The interconnected series of green spaces with 25,000 newly planted trees provides example of integrating green spaces within city developments.

### Precedent for:

- Provision of play areas and public realm
- Delivery of pedestrian and cycle routes
- Riverside development
- Green infrastructure delivery

Image credit: Municipality of Madrid

## **Hobson's Square, Cambridge** – Landscape Architects: Place Design and Planning

### Project overview

The square is located at the heart of the new development on Clay Farm that forms an extension to the village of Trumpington. It creates a new shared space approach to provide a significant public space. The design concept is based on Bronze Age field boundaries found on the site with one boundary running diagonally through the new square and linking through the Clay Farm Centre community building. It marks a dynamic transition between the flexible plaza space on one side and quieter garden areas on the other. Planting, rain gardens and high-quality paving dominate whilst motor vehicles are allowed to circulate and park in a low-speed pedestrian friendly environment.

The 25-ton timber sculpture, 'The Bronze House', was designed by Studio Morison and fabricated by Castle Ring Oak Frame and informed by the depth and location of Bronze Age post holes found near the site. Hand scorched and rubbed down with wire brushes to produce its final finish, the sculpture is made from misshapen chestnut wood.

# Growing Spaces

## Brooklyn Grange Rooftop Farm, New York City

Site area: 1.5 ha
Heights:11 storeys
4,082 m 2 of the roof space is covered with soil underlain by a drainage layer.

### Project overview

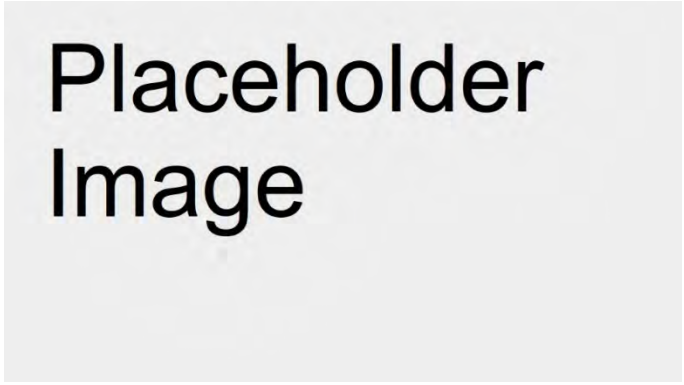
Text to follow.


Image credit: ©Anastasia Cole Plakias

## Urban growing space at Elephant Park , London

### Project overview

Text to follow.



## Edible Eastside, Birmingham

### Project overview

Text to follow.

Image credit: Edible Eastside

## Edible Bus Stop (The Kerb Garden), Landor Road, London

### Project overview

Text to follow.

Image credit: ©2021 The Edible Bus Stop®

## St Ann’s Community Orchard, Nottingham

### Project overview

Text to follow.

Image credit: St. Ann’s Community Orchard /STAA

## Saunders Park Edible Garden, Brighton

### Project overview

Text to follow.

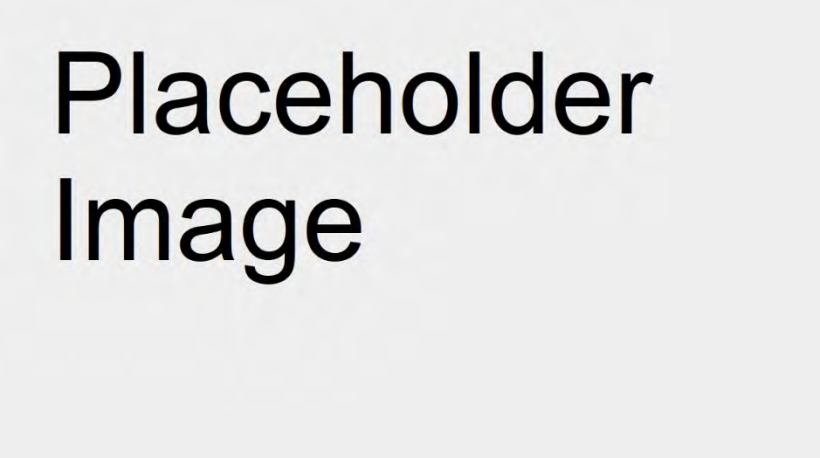
Image credit The Brighton & Hove Food Partnership

# Meanwhile uses

## Re:START Christchurch

### Project overview

Text to follow.




## The View Tube Community Hub, London

### Project overview

Text to follow.

Image credit: View Tube (Source-  Theviewtube.co.uk)

## Reshaleøen, Copenhagen, Denmark

### Project overview

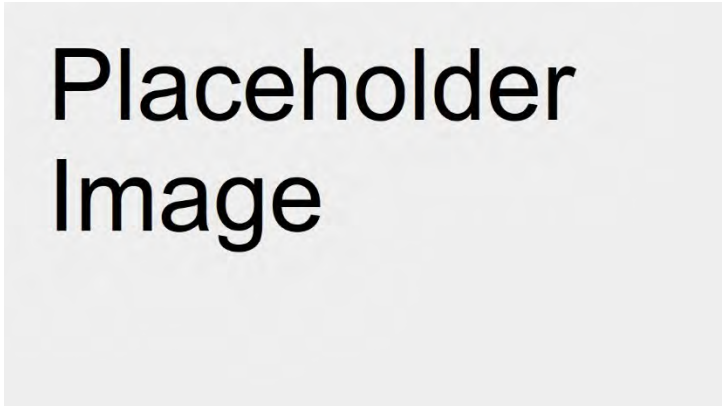
Text to follow.

Image credit: Reshaleøen

## Platform project

### Project overview

Text to follow.



# Making The Connections

## Solutions for under and over barriers

## The Green Bridge, Mile End, London – Architects: CZWG architects

### Project overview

Designed to join two halves of Mile End Park, the green bridge is structured in a way to allow trees and grass to grow on top, and is wide enough to create a safe park link for cyclists and pedestrians over the busy Mile End Road. Shops and restaurants contain and activate the belly of the bridge. The commercial rents of the retail units helps to provide income for the maintenance of the park.

Image Credit: David Fisher/ CC BY-NC-ND 2.0

Image credit: Philip Lane Photography.

## Dafne Schippersbrug, Utrecht, Netherlands - Architects: Next Architects

### Project overview

This innovative suspension bridge was designed to remove barriers between two sides of the river and connects the city centre to the new residential housing scheme Leidsche Rijn. The curved ramp is surrounded by green space and provides access for pedestrian and cyclists along a stretch of 110 metres. The bridge also cleverly integrates the local primary school roof.

Image Credit: Next Architects - Mastum Daksystemen & Maurice Iseger

Image credit: Next Architects – Marcel

## Van Gogh Path, part of the SMART HIGHWAY project, Eindhoven, Netherlands

### Project overview

Text to follow.



Image credits: Studio Roosegaarde

## Other ‘over and under’ precedents

### Bouldering underpass, Schiedam Centrum, Netherlands

Bouldering wall under Schiedam’s Centrum Station has transformed the connection into a usable space.


Image Credit: Modacity

### Cuyperspassage, Amsterdam, Netherlands – Architects: Benthem Crouwel Architects

A new underground tunnel, provides cyclists and pedestrians with a connection from the old city centre to quays on the IJ River waterfront. Since the end of 2015 it has been used by large numbers of cyclists, some 15,000 daily, and pedestrians 24 hours a day.

Image credit: Benthem-Crouwel

## Lime Avenue/Hobson Avenue, Cambridge

### Project overview

Text to follow.

# Parking

## Bicycle parking garage, Utrecht central station, Netherlands – Architects: Ector Hoogstad Architecten

### Project overview

Utrecht's Central Station area is currently being transformed to include the world's biggest cycle park. Situated under the square, the three level 'bike through' garage allows users to cycle conveniently all the way to their parking spaces which are signposted electronically. The scheme also includes a bike repair shop and rental service.

Image credit: Ector

## Cycle point CB1 – Architects: Formation Architects and Oxford Architects

### Project overview

The building is an unusual combination of a 231 key Ibis Hotel above the largest cycle park in the UK which accommodates over 2,800 bikes and includes a related cycle hire, repair and sales shop.

The building is located next to the Grade 2 Listed Railway Station and rises to a total of 6 storeys. The ground floor onto the square not only provides the main pedestrian entrance and exit to the cycle park but also accommodates a bar/restaurant use as well as the entrance into the IBIS hotel.

Image credit: Formation Architects


Plan showing site in wider context

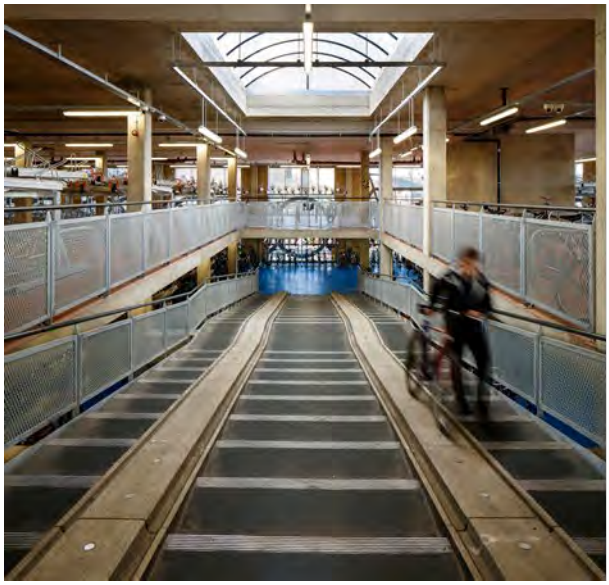


Image credit: Formation Architects

## Bircham Park & Multi Storey Car Park, Derriford Hospital, Plymouth – Architects: S333 Architecture + Urbanism

Site area: 0.5ha (footprint 50m x 80m)
Car parking spaces: 627
Heights: 3storeys

### Project overview

Located in the North West Quadrant of Plymouth City Centre, Bircham Park combines office and retail space with a multi-storey car park for Derriford Hosptial. Built on a site ranging in topography, the site consists of 3-storey offices, retail and cafes, with six-storeys of car parking in the valley of the sloping site.

### Land use

| Land use | Number of units |
|---|---|
| B1 Commercial | 670 sqm |
| Car and bicycle storage | 20,000 sqm |


Image credit: S333 Architecture + Urbanism

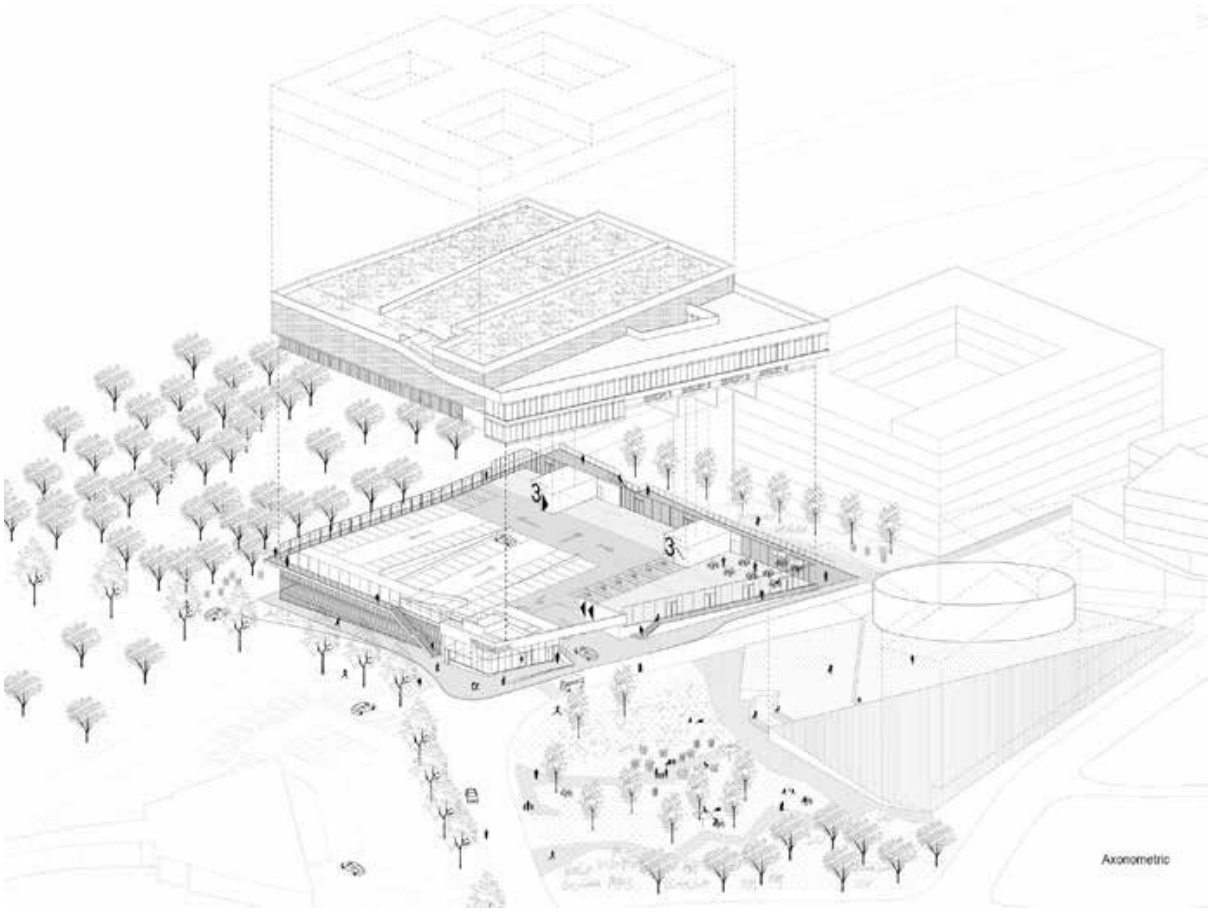




Image credit: S333 Architecture + Urbanism

## Peripheral Park, Greenwich Millennium Village, London

### Project overview

Greenwich Millennium Village is a sustainable community of approximately 3000 mixed tenure homes, which adopted a new approach to accommodating the car. Cars have been removed to the edges of the development. Parking is located away from housing units and is provided in two off plot buildings:

- A/ Multi-storey car park wrapped on one side to form a street by ground floor commercial units and residential duplex units, and
- B/ Podium car park, capped with residential apartments above.

This peripheral parking approach in addition to providing limited through-streets for cars, has facilitated car free open spaces and reclaimed the public realm for people rather than vehicles. A network of cycle and pedestrian paths is provided throughout

Section showing multi-storey car park wrapped with commercial and residential units (Image source: Source: www.spacetopark.org)

Image source: www.spacetopark.org

## Park’n’Play, Copenhagen – Architects: Jaja Architects

### Project overview

Hybrid form combining multi-storey car park with rooftop playground, 24 metres above the ground.

Image credits: JAJA Architects, Rasmus Hjortshøj – COAST

# Development Capacity Methodology

## Development Capacity Assessment Introduction

The Development Capacity Assessment (DCA) fulfils the role of a Housing and Economic Land Availability Assessment as required by the Planning Practice Guidance (PPG). The DCA does not allocate sites for development. It identifies sites within the North East Cambridge Area Action Plan area with development potential for housing and economic land uses and sets out an indicative trajectory for deliverable (0-5 years) and developable (6 to 20 years) sites, to be monitored through annual reports and managed and assessed through the development management process. This includes through pre-application discussions and through the determination of planning applications.

The DCA is based on best available knowledge at time of writing for the purposes of supporting the Proposed Submission North East Cambridge (NEC) Area Action Plan (AAP) (November 2021). It makes realistic assumptions about the availability, and suitability of land to meet the identified need for housing and economic uses over the plan period, taking account of the proposed NEC AAP Spatial Framework, any constraints and landowner engagement.

### How does the DCA relate to the existing adopted Local Plans for the area and the emerging Greater Cambridge Local Plan?

Policy 15 of the Cambridge Local Plan (2018), and Policy SS/4 of the South Cambridgeshire Local Plan (2018), allocate the area for high quality mixed-use development, primarily for employment uses such as B1, B2 and B8, as well as a range of supporting commercial, retail, leisure and residential uses (subject to acceptable environmental conditions).

The local plans do not specify the amount of development, site capacities, or timescales for development, deferring such matters to the preparation of the joint AAP. This is because the planning of the area is affected by the Anglian Water Waste Water Treatment Plant (WWTP), which covers a significant part of the area and is a significant constraint on development of adjoining land.

Since the local plans were adopted funding has been secured through the Housing Infrastructure

Fund (HIF), to assist with the relocation of the Waste Water Treatment Plant (WWTP) off-site. The vacated WWTP site, together with land around Cambridge North station, Cambridge Business Park, St John's Innovation Park, Cambridge Science Park and other land, will, in accordance with development plan policy, provide the opportunity for the creation of a new city district which can make a significant contribution to the future housing and employment needs of Greater Cambridge. The consenting route for the relocation of the WWTP is through a Development Consent Order that is separate to the AAP plan-making process. The decision and timing of the relocation of the WWTP has a major bearing on the phasing of development across much of NEC.

The outcome of the DCA is not being relied upon to meet the current housing and employment needs identified in the current local plans but will inform the contribution North East Cambridge could make to meeting identified housing and employment needs in the Greater Cambridge Local Plan.

In assessing the availability of land within NEC, the DCA has regard to the supporting evidence base studies prepared to date that have informed the draft North East Cambridge Area Action Plan (June 2020). However, further evidence is being prepared and this DCA may require updating to take account of these and to inform future iterations of the NEC AAP as appropriate.

In assessing the availability of land within NEC, the DCA has regard to the supporting evidence base studies prepared to inform the Proposed Submission North East Cambridge Area Action Plan (November 2021). In particular, the assessments concerning typologies, landscape, townscape, views and heritage, as well as identified constraints or that impose standards, such as those for open spaces provision.

**What is the methodology?**

The National Planning Policy Framework (NPPF) sets out the requirement for local planning authorities to carry out an assessment to establish realistic assumptions about the availability of land to meet the identified need for housing and economic uses over the plan period. The PPG (PPG 006 Reference ID: 3- 006-20140306) sets out a clear methodology to meet this requirement. In summary this comprises the following 5 stages:

- Identifying sites and broad locations with potential for development;
- Assessing their development potential;
- Assessing potential for windfall sites;
- Reviewing the assessment; and
- Assessing the core outputs to form the evidence base for the North East Cambridge Area Action Plan.

The DCA is structured to follow these stages. Figure 1 provides an overview of these.

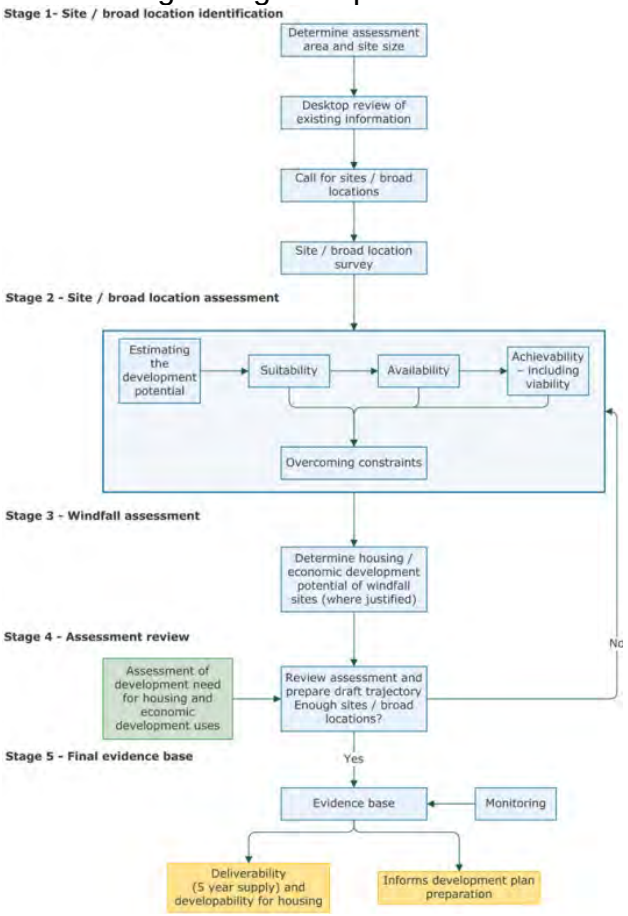



Figure 1: PPG Methodology for HELAAs used to develop the DCA

## Stage 1: Identification of sites

### What geographical area does the assessment cover?

The assessment area is the Proposed Submission North East Cambridge Area Action Plan area, shown in Figure 2.

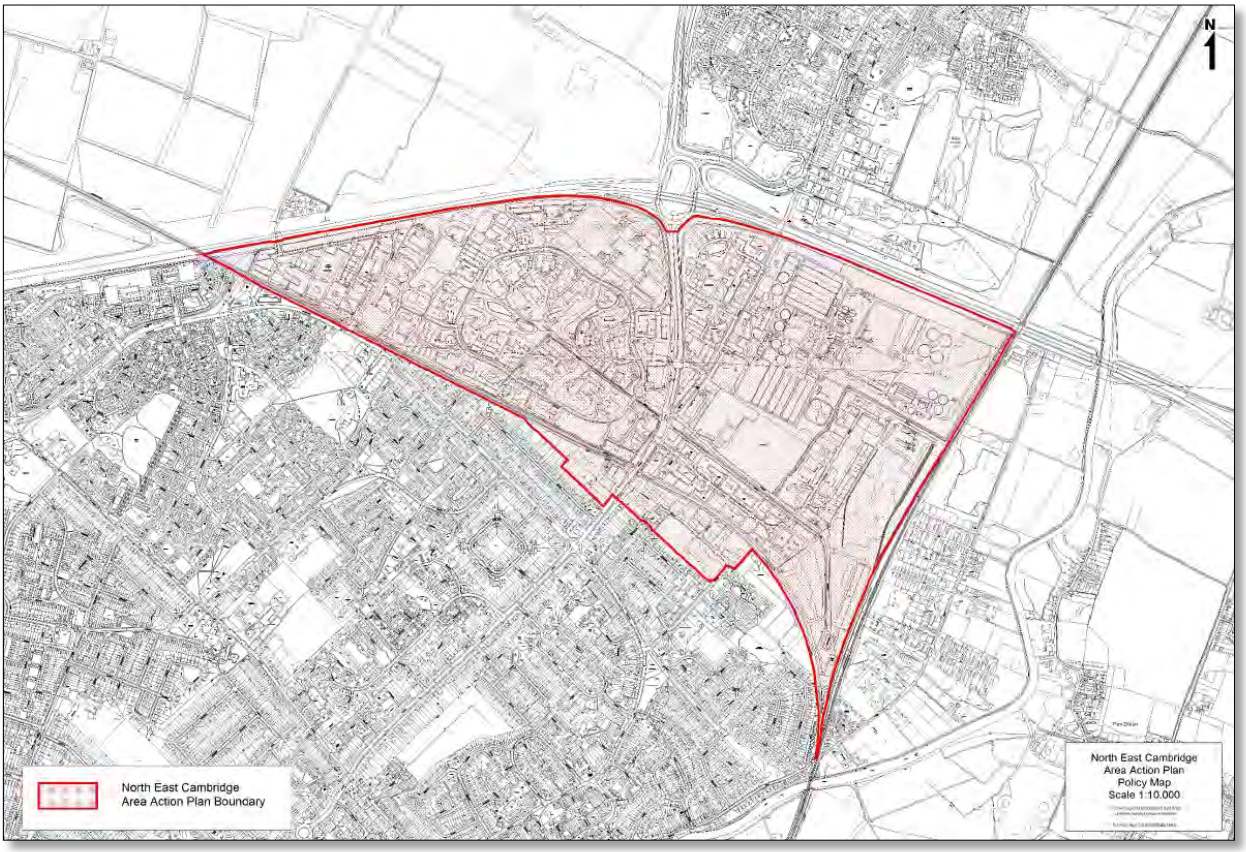



Figure 2: North East Cambridge Area Action Plan area

**Who have the Greater Cambridge Shared Planning Service worked with in determining the assessment area?**

During the process of preparing the North East Cambridge Area Action Plan, the councils have worked closely with public sector stakeholders, including Cambridgeshire County Council, statutory bodies, local communities, interest groups and other organisations through formal consultation and informal engagement.

Private sector stakeholders, namely landowners and developers within the Area Action Plan area, have been involved through various forums, design workshops and the development management process of pre-application and application discussions.

**What site/broad location size threshold has been considered for assessment?**

The assessment has considered all sites and broad locations within the Area Action Plan area. It is important that the regeneration of the Area Action Plan area occurs across the whole area, including on sites with greater constraints than others.

**How have the sites been identified?**

The majority of land proposed for inclusion within the Area Action Plan is already allocated in the current local plans of the respective authorities. The North East Cambridge AAP Issues and Options consultation (February 2019) extended the AAP boundary to include Cambridge Science Park following an earlier consultation in 2014. The draft NEC AAP (June 2020) further amended the site boundary to incorporate Cambridge Regional College (CRC) and the Milton Road Garage site, the latter being a site allocation for mix-use development within the current adopted Cambridge Local Plan (allocated site M1). The Proposed Submission Area Action Plan boundary us consistent with the draft AAP boundary as shown in Figure 2 above.

With the exception of Cowley Road and Nuffield Road Industrial Estates, the majority of land across the NEC area is held in several larger land-ownership parcels. These landowners have

confirmed their land is ‘available’ and have been engaged in the preparation of the AAP through the Landowner and Developer Forum, the purpose of which is to bring these parties together to promote joint working. This has included regular monthly meetings and a series of workshops in summer 2019, aimed at understanding site constraints, existing planning permissions, and landowner/developer aspirations that have helped informed both the draft and Proposed Submission NEC AAP Spatial Framework, development mix, distribution and phasing.

**Have any sites been excluded?**

Exclusions from the assessment are limited reflecting the aspirations of the two local authorities and stakeholders to see comprehensive regeneration of the NEC area, and to address area constraints and optimise development potential. However, some sites are considered appropriate to be excluded for housing and/or economic use development. These are:

- Existing publicly accessible open spaces such as the open space within Cambridge Science Park – to accord with Local Plan policy (Cambridge Local Plan Policy 67 and South Cambridgeshire Local Plan Policy SC/8)
- Existing waterways and bodies including The First Public Drain
- Sites recently developed (in the last 10 years), such as the North Cambridge Station and surrounding public realm
- The Cambridge Guided Busway – with the exception of promoting further managed crossing points to support enhanced accessibility to NEC
- Railway tracks and embankments – to support the functioning of the railway network and reflect the need for further feasibility studies to explore potential over track development

Within NEC there is land currently safeguarded within the County Minerals and Waste Local Plan (2021). These sites, and why they have not been excluded for the purposes of this assessment are:

- The existing Waste Water Treatment Plant – the off-site relocation of which is the subject of approved Housing Infrastructure Funding and a separate Development Consent Order process;
- The Waste Transfer Station on Cowley Road – considered a ‘bad neighbour’ use

incompatible with the North East Cambridge AAP Spatial Framework and a constraint to optimising development but capable of relocation within the AAP area (see site assessment in Stage 2); and

- The Cambridge Northern Fringe Aggregates Railheads site at Chesterton Sidings – considered a ‘bad neighbour’ use and a constraint to optimising development but for which currently no alternative and feasible relocation strategy exists.

**Stage 2: Assessment of sites**

The relocation of the WWTP provides a major opportunity to deliver sustainable development on a major brownfield site within the urban area that incorporates successful business parks for knowledge-based and other businesses. Reflecting the existing and planned accessibility of the area by public transport, cycling and walking, North East Cambridge is considered suitable for higher density development, including intensification of business uses and retention and consolidation of industrial uses.

As stated previously, the existing local plans do not specify the amount of development, site capacities, or timescales for development at NEC, deferring such matters to the preparation of the joint AAP. Policy 14 of the Cambridge Local Plan states that development should be of higher densities around key transport interchanges (including Cambridge North Station), whist having regard to the protection/provision of landscape and other environmental requirements. Policy H/8: Housing density of the South Cambridgeshire Local Plan states that housing development will achieve an average net density of 40 dwellings per hectare in urban extension to Cambridge and new settlements. However, the net density on a site may vary from this where justified by the site and surrounding area character and circumstances.

The Planning Practice Guidance states that the development potential of each identified site should be “guided by the existing or emerging plan policy including locally determined policies on density. Where the plan policy…does not provide a sufficient basis to make a judgement then relevant existing development schemes can be used as the basis for assessment, adjusted for any individual site characteristics and physical constraints” (PPG paragraph 17 Reference ID: 3- 017-20140306).
The development typologies outlined earlier in this study provide precedents of the mix and form of the different types of development proposed with North East Cambridge. The mix and densities within these relevant schemes have informed the densities and site capacities for this assessment. A broad plot ratio of 70% has been used to inform the net developable area for each development parcel / site, reflecting higher density development typologies from other examples elsewhere.

**Constraints**

A number of high-level development constraints have been considered in the preparation of the DCA. These include physical, environmental and planning policy constrains. These are set out in Table 1. This table will be updated to reflect any changes in development constraints during the preparation of the AAP.

| Constraint type | Development constraint |
|---|---|
| Environmental | Noise (e.g. A14, railway, other roads, industrial uses)<br>Odour<br>Vibrations<br>Light pollution<br>Air pollution<br>Surface Water Flooding<br>Land contamination |
| Physical | Existing land uses<br>Site assembly<br>Townscape context<br>Landscape context<br>Airport Safeguarding Zone<br>Green and blue infrastructure<br>Transport Infrastructure (e.g. railway, A14, Guided Busway) and road capacity |
| Planning Policy | Heritage designations<br>Biodiversity/environmental assets (e.g. SSSIs/SACs/Ancient Woodland)<br>Green Belt<br>Other planning policy designations (inc. Minerals and Waste policies) |

Table 1: North East Cambridge AAP high level development constraints

Indicative housing density range

Drawing upon the relevant typologies, an indicative density range for housing of 70 to 300 dwellings per hectare has been defined that responds to the position of sensitive locations, the proposed distribution of development established within the NEC Spatial Framework, and to existing and future public transport services / access. The identified schemes in Table 2 have been used as the basis for Stage 4 of the Development Capacity Assessment.

For the purposes of development management processes, these do not represent pre-determined densities for sites as consideration will need to be given to the wide range of policies within the Area Action Plan, the existing Development Plans and other material considerations. As such,

through the development management process, densities and resultant capacities of sites may vary.

| Typology example | Location | Density (dwellings per hectare) | Relevance to NEC AAP area |
|---|---|---|---|
| Mill Road Depot | Cambridge | 70 | Range of unit sizes and tenures including houses. Building heights within parameters of AAP evidence. |
| King's Crescent Estate | London | 180 | Range of unit sizes and tenures. Building heights within parameters of AAP evidence. |
| CB1 | Cambridge | 240 | Residential development in close proximity to railway station (Cambridge Station). Building heights within parameters of AAP evidence. |
| CB1 Ceres | Cambridge | 300 | Residential development in close proximity to railway station (Cambridge Station). Building heights within parameters of AAP evidence. |

Table 2: Residential Typologies

**Indicative employment floorspace density ranges**

For economic uses, the PPG (PPG 017 Reference ID: 3-017-20140306) suggests using floorspace densities for certain industries. Within the NEC AAP area, for the purposes of the DCA, economic uses can be broadly divided into business (Class E(g)) uses and industrial (Class B2 and B8) uses.

Based on local relevant typologies, an indicative density of 65% plot ratio to define the floorspace density has been considered appropriate, taking into account off-site car storage requirements within Car Barns and open space/landscaping and SuDS requirements. The plot ratio responds to the location of sensitive locations, the proposed distribution of development established within the NEC Spatial Framework, and to existing and future public transport services / access. The identified schemes in Table 3 have been used as the basis for Stage 4 of the Development Capacity Assessment.

Intensification of industrial sites can be delivered in multiple ways in order to maximise their floorspace efficiency. A number of developments of this nature are being progressed within the UK and have been explored further within this document. To inform the DCA, the following B2 and B8 development assumptions have been used:

- B2 - light industrial uses arranged over four storeys (‘intensification’) relating to a ‘multi level’ logistics and stacked industrial model
- B8 – storage and distribution arranged over two storeys (‘intensification’) relating to a more urban logistics model

For the purposes of development management processes, these do not represent pre-determined densities for sites as consideration will need to be given to the wide range of policies within the Area Action Plan, the existing Development Plans and other material considerations. As such, through the development management process, floorspace densities and resultant capacities of sites will vary.

| Typology example | Location | Relevance to NEC AAP area |
|---|---|---|
| Maurice Wilkes Building | St Johns Innovation Park, Cambridge | Building heights within parameters of LCVIA evidence. Example of high-density office development. |

Table 3: Office Typologies

**Job capacity**

The potential economic floorspace capacity (for both retail and commercial floorspace) for the plan period provides an indication of potential employment capacity. Assumptions for job densities based on floorspace for various sectors is currently derived from the government's Employment Density Guide (3rd Edition).

**Suitability of sites**

The PPG states that a site's suitability for development for housing and / or economic land uses should be assessed against the factors set out PPG paragraph 19 Reference ID: 3-019-20140306. All sites identified in the DCA have been assessed against the factors set out in the PPG to give an indication of each site's potential suitability for development. The assessment drew on detailed knowledge of individual sites through site visits, pre-application discussions and landowner engagement.

The site assessment is supported by the general Greater Cambridge housing and office markets and also demonstrated by the strong industrial sector, both within Greater Cambridge and specifically within North East Cambridge, resulting in low vacancy rates. The NEC Viability Study (2021), NEC Overcoming Barriers to Mixed-Use Development paper (2020) and the NEC Commercial Advice and Relocation Strategy (2021) have considered these matters in further detail.

**Availability of sites**

The PPG considers a site to be 'available' for development when, on the best information available, there is confidence that there are no legal or ownership problems, such as unresolved multiple ownerships, ransom strips, tenancies, or operational requirements of landowners

(Paragraph: 020 Reference ID: 3-020- 20140306). Generally, this means that land is controlled by a landowner or a developer who has expressed an intention to develop, or the landowner has expressed an intention to sell.
Land within North East Cambridge is considered to be available for development following engagement with landowners through various forums and design workshops. As noted above, the majority of the land within North East Cambridge is already allocated for development in the existing adopted Local Plans.

**Achievability of sites**

The PPG defines that a site is considered achievable for development where there is a reasonable prospect that the particular type of development will be developed on that site at a particular point in time (Paragraph: 021 Reference ID: 3-021-20140306). This is essentially a judgement about the economic viability of a site and whether development on that site will be delivered within a certain time period.

NPPF paragraph 174 states that "…Evidence supporting the assessment should be proportionate, using only appropriate available evidence". Landowner engagement generally agrees that North East Cambridge is attractive location for development which is supported by the Greater Cambridge housing and office market and also demonstrated by the strong industrial sector resulting in low vacancy rates in this area. It is therefore broadly assumed, through the NEC Viability Study, that sites are capable of being viable for development.

As stressed earlier in this DCA, the redevelopment of significant parts of the NEC AAP area, and for a wider range of uses, is dependent on the relocation of the existing Waste Water Treatment Plant (WWTP), which is subject to a separate Development Consent Order process. As such, the AAP and therein, this DCA, is predicated on the consent being granted and the WWTP being relocated, with respect to the assessment of land being 'achievable' for the types of development prescribed through the AAP.

**Defining timescales for delivery**

The PPG states that the timescale and rate of development should use the information on suitability, availability, achievability and constraints to assess the timescale within which each site is capable of development (as set out in Stage 2 above) (Paragraph: 023 Reference ID: 3-023-20140306). This may include indicative lead-in times and build-out rates for the development of different scales of sites.

Based on the guidance contained in the PPG and the NPPF regarding the assessment's deliverable and developable sites, the timescales set out in Table 1 have been assigned to each site and has been informed through landowner engagement. Again however, it must be stressed that these timescales are predicated on the successful granting of and relocation of the WWTP.

The delivery rate of new homes at North East Cambridge have also been informed by the Housing Delivery Study (2021) which identifies the typical rate of housing delivery on sites such as North East Cambridge in order to provide a localised account of housing delivery rates.

| DCA Phase | Deliverable/developable | Definition |
|---|---|---|
| 0-5 years | Deliverable | These sites should be available now, offer a suitable location for development now, and are achievable with a realistic prospect that development will be delivered on the site within 5 years. |
| 6-10 years<br>11-15 years<br>16-20 years | Developable (6-15 years as defined by the PPG) | These sites are considered to be in a suitable location for development and are considered to have a reasonable prospect that the site is available and viable development could be achieved within the next 6 to 20 years. |

Table 2: Definition of deliverable and developable sites

## Stage 3: Windfall sites

The geographic size and the intention to optimise the development of land within the North East Cambridge AAP area has enabled an extensive analysis to be undertaken to identify developable land within the AAP boundary. This is aided by large areas being in single landownerships that enables the majority of the area to be defined as deliverable or developable outside of excluded locations.

Cowley Road and Nuffield Road Industrial Estates however contain fragmented land ownership. The NEC Commercial Advice and Relocation Strategy (2021) has engaged with some of the landowners in these areas of the AAP, some of which have indicated that redevelopment is broadly achievable subject, in some instances, to finding an alternative suitable site upon which to relocate the existing occupier. Nevertheless, where 'availability' is not confirmed, the strategy outlines the policy interventions and more direct actions the Council's could take in order to facilitate development. Further to this, the Councils, as part of the Duty to Cooperate, have engaged with various bodies such as Cambridgeshire County Council, to set out an agreed process by which safeguarded or ring-fenced uses may be relocated to suitable off-site locations in time including, in some cases, potential interim solutions.

### Stage 4: Assessment Review

Individual risks were assessed for each of the sites within Appendix B. A high-level assessment of key risks/challenges has been carried out for the delivery and development of sites. It is considered that these key risks/challenge can be managed to enable development during the plan period.

The site assessments were subject to an internal review to cross reference and fact check the amount and phasing of development. This resulted in some minor amendments to update the figures alongside consideration further updates to the AAP Spatial Framework and the evidence base studies.

## Stage 5: Final Evidence Base

The final evidence base is provided within two tables set out in the appendices. These are:
Appendix A: Site assessment – sets out the results of the site assessment in terms of the judgement on the suitability, availability and achievability of each site for development.
Appendix B: Development potential and trajectory – sets out the potential capacity (for homes, economic uses floorspace and jobs) and timescales for each site considered to be deliverable or developable.

**Summary of final evidence base**

The site assessment considered 53 sites in total which are shown in figure 3 and set out in detail in Appendix A.
The potential housing capacity for the plan period is:

| Phase | Capacity |
|---|---|
| 0 to 5 years (deliverable) | 0 |
| 6 to 20 years (developable) | 3,900 |

The potential economic floorspace capacity (for both retail and commercial floorspace) for the Area Action Plan is 201,100 sqm. This equates to approximately 15,000 commercial jobs and a further 760 retail jobs. Due to the phasing of the residential development and the pipeline (circa 127,000 sqm) and build out rates for the already consented commercial floorspace, it is not anticipated that any additional commercial or retail development will be deliverable in the next 0 to 5 years of the Plan.

| Phase | Capacity |
|---|---|
| 0 to 5 years (deliverable) | 92,000 |
| 6 to 20 years (developable) | 177,250 |

**Risk management**

The DCA has set out a trajectory of deliverable and developable housing sites that are expected to come forward over the plan period. The trajectory is based on best available knowledge at point of writing including taking into account representations received as part of the Regulation 18 consultation (2020), and the evidence to support the North East Cambridge Area Action Plan. Other external unforeseen circumstances such as economic conditions as a result of COVID-19 have also been taken into consideration as much as possible at this time.

**Monitoring**

Ongoing monitoring of development capacity and phasing will be important to ensure future Plan reviews and potential updates of the North East Cambridge Area Action Plan are supported by a robust evidence base. Monitoring of the Plan has been set out in the Monitoring Indicators section within the Area Action Plan.

# Appendix A Site Assessment Table

**[To be updated]**

# Appendix B Development Capacity And Trajectory Table

**[To be updated]**