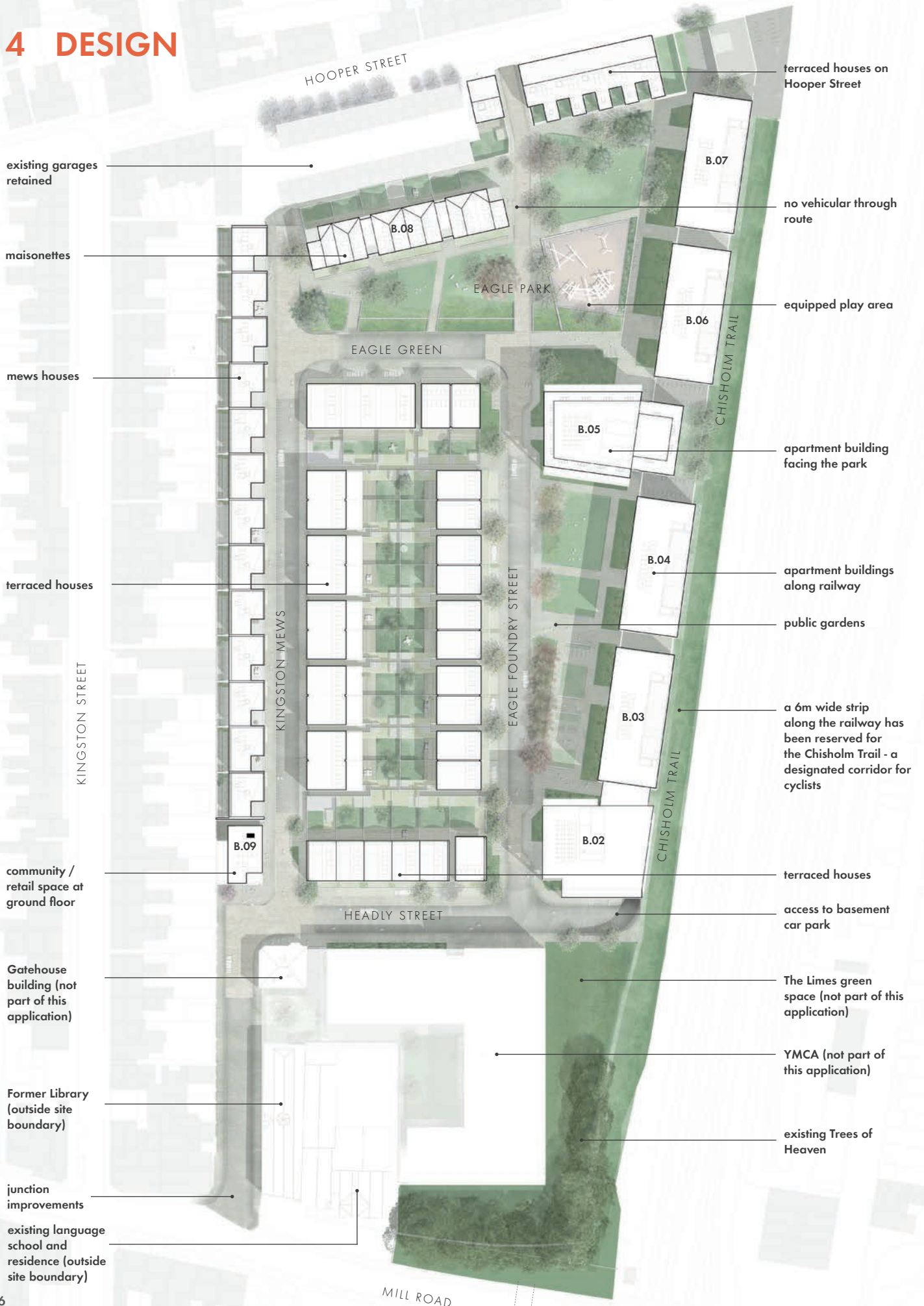


# 4 DESIGN



# 4 DESIGN



## **In summary, the proposed development includes:**

- 184 new homes, ranging from terraces and mews houses to apartments;
- 50% of these (92 homes) will be socially rented council homes;
- A community / retail unit to serve the new and existing community, adding to the offering along Mill Road;
- High quality open space amounting to 28% of the site area;
- A new park with a neighbourhood play area;
- A designated corridor for the Chisholm Trail;
- Ample cycle parking throughout the scheme with dedicated provision for each home, including for cargo/family bikes;
- 101 car parking spaces in an underground car park;
- Electric charging points, to accommodate a move towards electric vehicles;
- Sustainability measures including high fabric performance and photovoltaic panels; and
- Sustainable urban drainage (SUDs) measures.

## Design principles

The development is an important regeneration opportunity in Cambridge and makes a significant contribution to the City Council's stated objective of delivering 500 new social rented homes across Cambridge over the next five years.

Mill Road is a unique part of Cambridge and a very popular residential area. This is in part due to the success of the well-preserved Victorian terraced houses adapting to modern needs. But also because the area provides the density to support the rich and lively multicultural mix of uses on Mill Road itself, ranging from shops, cafes and pubs (many of which are independent) to leisure, religious, and community uses.

A contextual approach to design has been adopted, to create buildings that feel crafted and are sympathetic to the local area, that balance these aspirations with financial considerations and the overarching need for new social housing. The design of the layout, buildings and landscaping aims, is, as one stakeholder put it, "to promote a happy and engaged community." To achieve this, the following broad design principles underpin the design proposals:





- 1 Integrate 50% affordable housing in a seamless manner, with no distinction between tenures
- 2 Achieve an exemplary residential design with a focus on quality of living, with ample amenity
- 3 Create a broad range of typologies from mews houses, terraced houses, maisonettes to apartments
- 4 Improve access and permeability through the site, but limit vehicle movements
- 5 Prioritise pedestrians and cyclists with convenient cycle parking and underground car 'storage'
- 6 Create proper streets and spaces with adopted roads and pavements with moments of heightened activity and moments of intimacy
- 7 Echo the rhythm of the existing terraces without mimicking, carefully balancing repetition and diversity
- 8 Respond to the unique context of Mill Road and Petersfield and the site's distinct boundary conditions
- 9 Articulate a townscape transition between Kingston Street and the railway
- 10 Create rich mix of open spaces and high quality landscape, including a neighbourhood play area, for new and existing residents

**We are proposing to create proper streets with adopted roads and footways. The scale of the new streets and the relationship of the houses to the pavement echo that of the surrounding area, while integrating bins and bicycles.**

**HEADLY STREET**  
**EAGLE FOUNDRY STREET**  
**KINGSTON MEWS**  
**EAGLE GREEN**

## LAYOUT

The street names have largely been taken from the Planning and Development Brief (SPD). This states that historic site plans have inspired the identification of possible names for the key spaces, but these will be subject to review and agreement by the Council as the project moves forward.

### Site layout

The overall site layout has been informed by the brief and the overarching design principles. The site layout is consistent with the framework plan in the Planning and Development Brief (SPD) with the exception of the main open space, which has been moved slightly to the northeast to locate it closer to Hooper Street.

Many of the existing terraced streets are roughly perpendicular to Mill Road, orientated north-south. This was a natural consequence of the historic development of the area, as Mill Road existed long before many of the residential streets arrived in the 1860s and 1870s. This has given the area an unmistakable grain, with rows of terraced houses forming long lines on continuous frontage. The proposed street layout reflects this dominant north-south urban grain and creates a clear urban block structure.

The proposals also stitch into the existing road network as seamlessly as possible given constraints of Mill Road Bridge at the south and the retention of the garages site on the north. The view into the site is terminated by a small, new apartment building with active uses at ground floor. This new building, along with the existing Gatehouse, frames a new informal space on the corner between the entrance road and Headly Street. This is marked by new trees and a raised area of road in block paving.

Headly Street forms the southern leg of the network of new streets and runs in an east to west direction terminating at the railway, similar to Hooper Street. It takes its name from the Headly brothers, owners of the Eagle Iron Foundry, the earliest non-agricultural use of the site.

Headly Street gives access to Kingston Mews, which is slightly offset from the entrance road (similar to the relationship between Sturton Street and Kingston Street). Kingston Mews is conceived as a narrow street of 9.25m, very similar in width to Kingston Street. Of all the proposed new streets, Kingston Mews is most comparable to the surrounding streets in the area in terms of scale and character. However, unlike Kingston Street, the mews will not serve as a thoroughfare, and is therefore envisaged to have a more intimate character.



An early study of Kingston Mews



HOOPER STREET

visitor cycles

cycle parking

visitor cycles

cycle parking

B\_08

EAGLE PARK

play park

EAGLE GREEN

B\_06

visitor cycles

future route of Chisholm Trail

cycle parking

B\_05

cycle parking

B\_04

visitor cycles

B\_03

EAGLE FOUNDRY STREET

visitor parking

B\_02

ramp to basement

B\_09

visitor cycles

HEADLY STREET

Gatehouse

potential building footprint of future development

Former Library

visitor parking

KINGSTON STREET

MILL ROAD

Further east, Headly Street gives access to Eagle Foundry Street which runs in a north-south direction parallel to Kingston Street. At its northern end this turns a right angle into Eagle Green. In turn, Eagle Green connects with Kingston Mews to complete the circular loop.

Eagle Foundry Street marks a transition in scale between the 2-3 storeys houses and the taller apartment buildings against the railway. 3-storey terraced houses front onto the west of the street, while the east opens out onto landscaped space that accommodates the slight angle between the geometries of the streets and the railway.

At its northern end, Eagle Foundry Street becomes a paved path that is closed to vehicles and runs through the park to connect with Hooper Street.

### Existing coach houses

The existing linear coach house buildings that sit right up against the gardens of Kingston Street properties are to be removed. Options for their retention were considered, but ruled out for the following reasons:

- Concerns around the viability of reusing the existing structure
- Lack of access to the rear of the buildings during construction
- Poor appearance and build quality in many areas - in part due to piecemeal alterations over time
- Prohibitively high conversion costs
- Opportunity for replacement buildings to be sited further away from the property boundary
- Inability to create private outdoor amenity space serving the new homes

It is instead proposed to replace the buildings with two-storey mews houses (the exception to this is the new building B0.9 near the site entrance, which is three storeys). The new mews houses will be sited



A new informal space is created at the site entrance around a cluster of new uses



Headly Street forms the southern leg of the network of new streets; the houses of Headly Street have gables facing the street which act as a southern frontispiece to the main block of houses

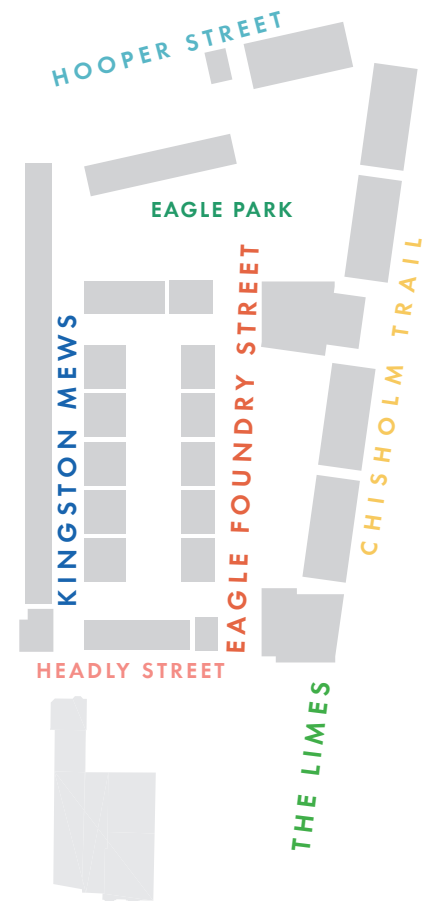


Eagle Foundry Street creates a transition in scale and opens on to landscaped gardens

3m away from the boundary with the Kingston Street gardens to improve the relationship to the Kingston Street properties.

### Garages site

The garages site on Hooper Street is outside this application. However, it may become available for development in the future, subject to lease negotiations. The proposed layout has been designed so that this part of the site can be successfully integrated in the future. The site has an indicative capacity of 6 - 9 terraced houses.



At its northern end, Eagle Foundry Street becomes a paved path through Eagle Park (shown on the right of the image)



The proposed buildings gradually step up towards the railway

## SCALE AND MASSING

The form of the proposals responds to the three key townscape considerations:

- The local context of Mill Road and Petersfield;
- The character and setting of the Conservation area; and
- The site's location next to the railway.

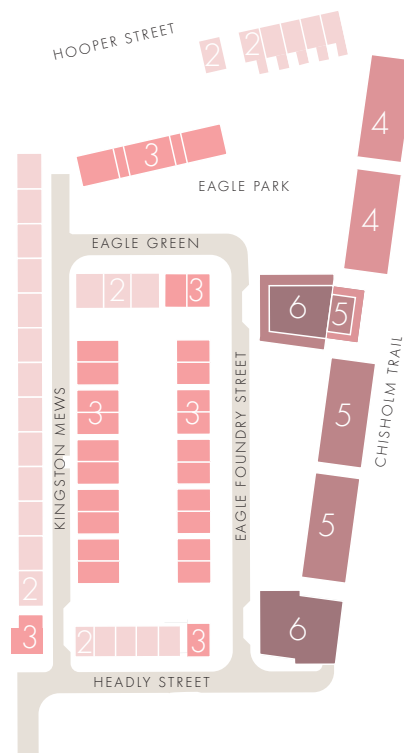
The area surrounding the site comprises mainly two-storey housing. However, there are many buildings in and around the site of greater height - typically three storeys - including the Women's Resource Centre on the site itself, the language school to the south, Dales Brewery on Gwydir Street and many buildings on Mill Road itself.

The 6m high elevation of the railway bridge is the main view point from which the development will be appreciated - equivalent to a two-storey building - and changes the perception of height.

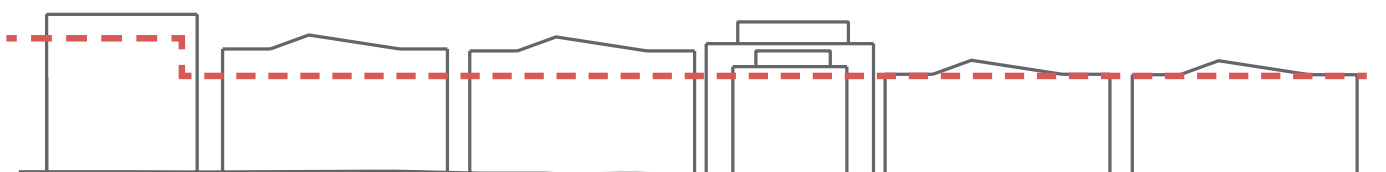
The proposed form and massing of the scheme establishes a transition in townscape character across the site, gently stepping up from two storeys on Kingston Mews, three-storeys in the central portion of the site, to four, five and six-storeys against the railway.

## A design-led approach

Overall the approach to heights and massing is consistent with the Planning and Development Brief (SPD), with two-storey buildings facing neighbouring streets, three-storey buildings in the centre of the site, taller buildings against the railway and an opportunity for the tallest element near the south eastern corner of the site.

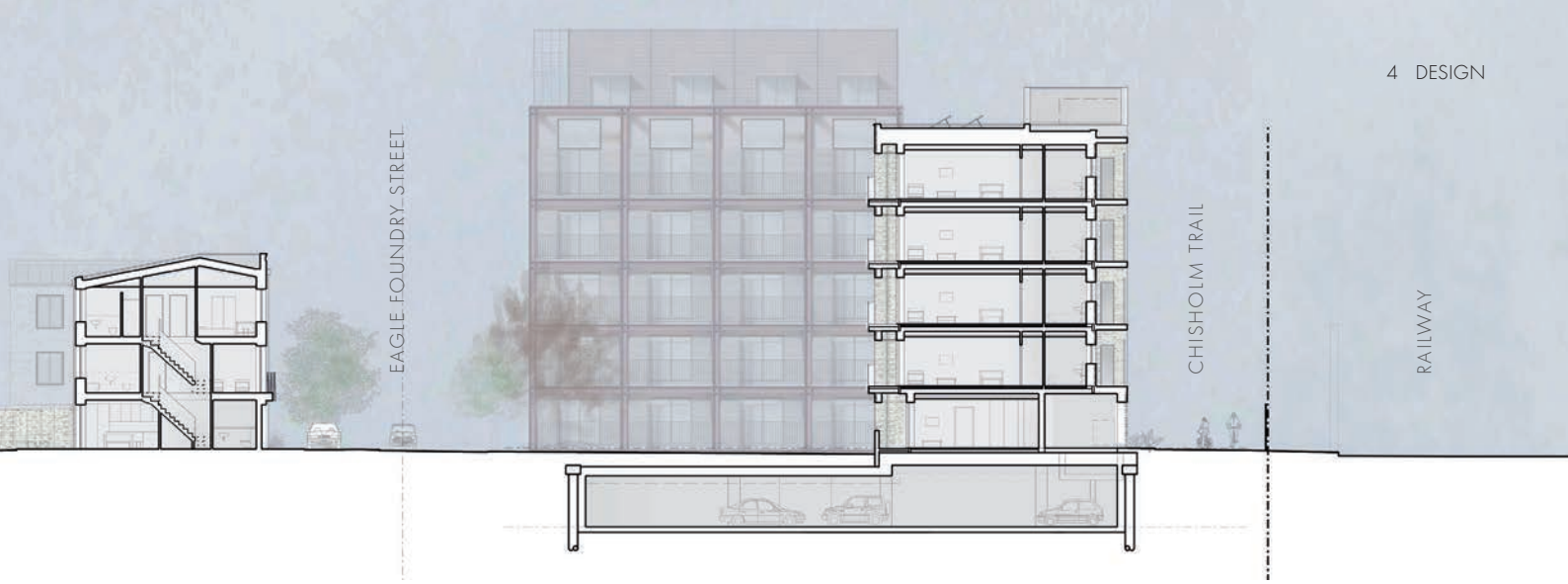


Building heights in storeys



Comparative building heights along railway elevation

- proposed building outlines
- - - approximate line of height parameters in the Planning and Development Brief (SPD)



Nevertheless, some of the heights proposed along the railway exceed the parameters set in the Planning and Development Brief (SPD). The design team has worked closely with Council Officers to explore heights throughout the design process, using 3D computer modelling. This process has been design-led and iterative.

A comprehensive views assessment has also been prepared and agreed with Council Officers, which identifies all key views from publicly accessible areas and follows the approach set out in the Council's guidance on tall buildings (application of Policy 3/13). This would not have been available during the preparation of the Planning and Development Brief (SPD).

The massing of the proposals (and indeed earlier iterations) has been carefully considered in relation to these key views. It has demonstrated the limited

number of view points from which the development will be visible and the limited impact of the taller buildings from the key view points.

The massing of the taller apartment buildings has been carefully considered and balances need against the proposed impact. Taller apartment buildings allow for the provision of more affordable homes, providing a clear public benefit, which should be weighed against any potential harm as a result of their increased visibility.

It is acknowledged that height was a key issue raised during the consultation process, and the heights of some of the buildings have been reduced in response to stakeholder feedback.

For reasons outlined in the Planning Statement and the opening chapters of this Design and Access Statement, opportunities should be taken to use



Mill Road Bridge



Ainsworth Street



Ainsworth Street



Gwydir Street

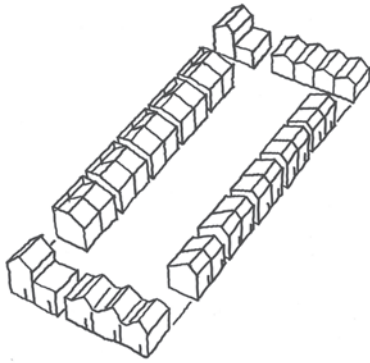


Hooper Street



Carter Bridge

**The proposals have been carefully considered in relation to key views - please refer to the separate Townscape and Views Assessment report**



brownfield land efficiently. The SPD was based on the Local Plan site capacity of 167 units. The SPD height parameter along the railway was indicative and not an absolute upper limit and allowed scope for variation providing account was taken of the wider context. Through a detailed process of modelling, design review and consultation it has been possible to demonstrate that the height guidance in the SPD can be exceeded without adverse impacts.

Please refer to the separate Townscape and Views Assessment report and also the Heritage Statement, which considers the impact of the proposals in detail.

### Roof form

The roofs of the proposed buildings take a variety of forms, responding to their particular location, context, and their wider role within the townscape. Roof forms range from pitched roofs with eaves, much like the existing terraces, to parapeted gables, hipped roofs, shallow pitched roofs and flat roofs. An overarching theme that governs the roof form of many (but not all) of the houses is that the ridge lines typically run in a north-south orientation, reflecting the grain of the wider context and helping to bridge the change in scale from west to east across the site.

A more detailed description of the plan arrangement, form and appearance of each building is contained in the chapter on the design organised by street and its constituent buildings.



The elevations of the railway buildings incorporate asymmetrical sloping roofs



The roofs of the mews houses dip towards the street



The YMCA (not part of this application) might adopt a saw-tooth roof form



The tall parapets of the town houses of Eagle Foundry Street conceal a shallow pitched roof behind



The proposals provide 50% of the housing (92 units) as social rented homes, with a rent no greater than the Local Housing Allowance, equivalent to about 50 - 60% of the 'market rent' level.

## USE

### Residential mix

The predominant use is residential. The type, form and amount of accommodation has been defined by the brief, the need to deliver a viable scheme and subsequent consultation.

The sizes for all the different types of apartments and houses comply with Technical Housing Standards – Nationally Described Space Standard ('NDSS').

All houses and apartments are provided with private amenity space in the form of balconies, terraces or gardens. The development as a whole, aims to provide a significant amount of communal amenity and play areas across a variety of external spaces.

There is an allocation of 15% of the dwellings to be Part M4(3) compliant for access. In all tenures these will be designed as adaptable units. Please refer to the chapter on accessibility for further information.

The following is the proposed residential mix, amounting to a total of 184 units.

Houses and maisonettes	No. of units
2-bedroom houses	13
2-bedroom maisonettes	4
3-bedroom houses	24
3-bedroom maisonettes	2
4-bedroom houses	13
<b>Total</b>	<b>56 (31%)</b>

Apartments	No. of units
Studio apartment	8
1-bedroom apartment	67
2-bedroom apartment	53
<b>Total</b>	<b>128 (69%)</b>

### Mix by unit type



mews houses

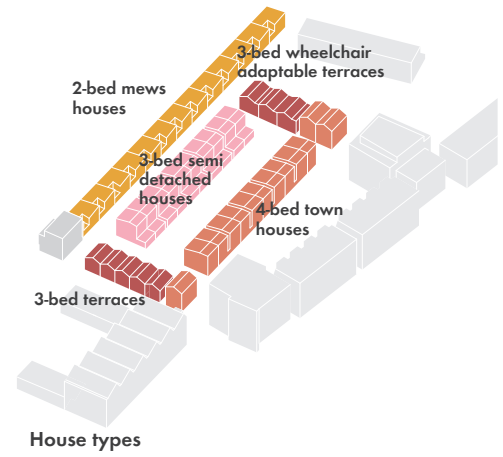


terraced houses



town houses





**Tenure**

The proposals provide 50% of the housing (92 units) as social rented homes and 50% for private sale (92 units)

The social rented homes will be owned and managed by Cambridge City Council for households whose needs are not met by the market. Eligibility is determined in regard to both local incomes and house prices. In the case of this site, this also means a rent no greater than the Local Housing Allowance, equivalent to about 50 - 60% of the 'market rent' level.

The exact mix and the tenure split is listed in the tables below and illustrated on the adjacent diagrams.

**Affordable mix (92 units)**

Houses and maisonettes	No. of units
2-bedroom houses	3
2-bedroom maisonettes	4
3-bedroom houses	9
3-bedroom maisonettes	2
<b>Total</b>	<b>18 (20%)</b>

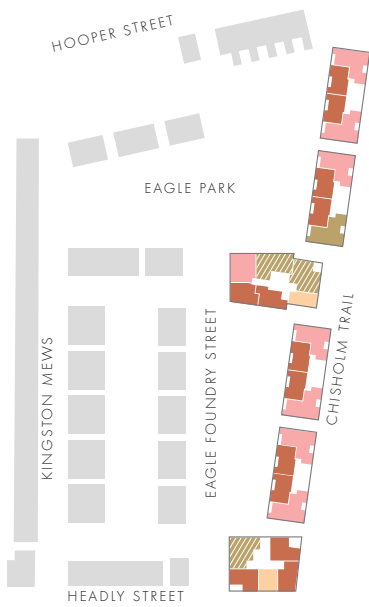
Apartments	No. of units
1-bedroom apartments	39
2-bedroom apartments	35
<b>Total</b>	<b>74 (80%)</b>

**Private mix (92 units)**

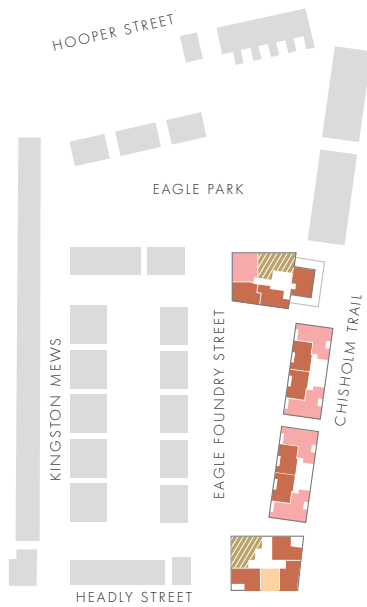
Houses and maisonettes	No. of units
2-bedroom houses	10
3-bedroom houses	15
4-bedroom houses	13
<b>Total</b>	<b>38 (41%)</b>

Apartments	No. of units
Studio apartments	8
1-bedroom apartments	28
2-bedroom apartments	18
<b>Total</b>	<b>54 (59%)</b>

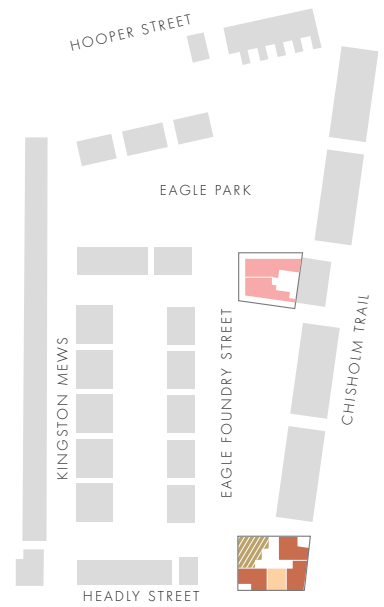




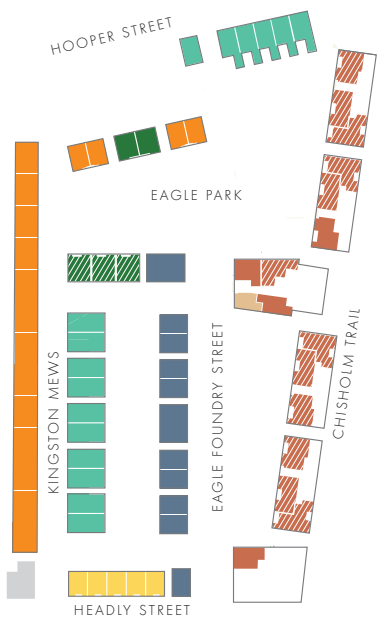
third floor



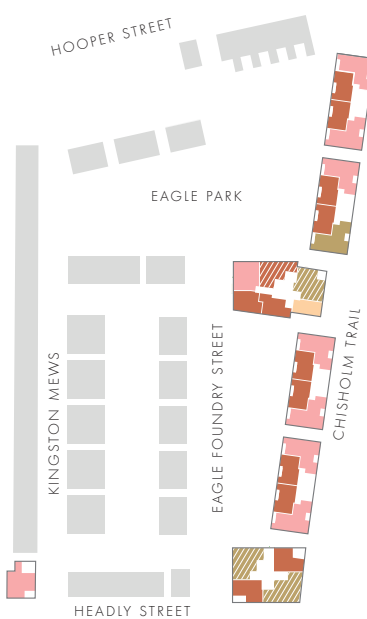
fourth floor



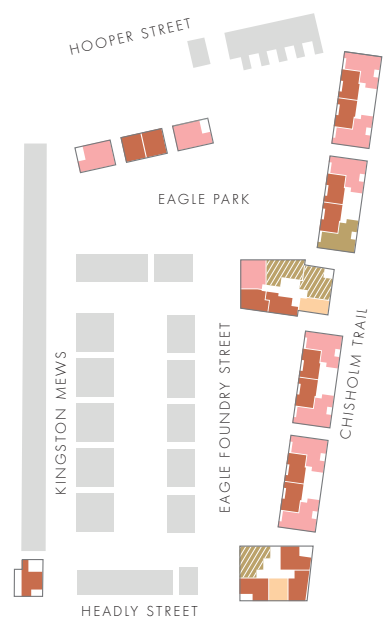
fifth floor



ground floor



first floor



second floor

Detailed residential mix by storey

Houses/Duplex

- 2-bed/4P M4(2)
- 3-bed/4P M4(2)
- 3-bed/5P M4(2)
- 3-bed/5P M4(3) adaptable
- 3-bed/6P M4(1)
- 4-bed/7P M4(1)

Apartments

- Studio M4(2)
- 1-bed/2P M4(2)
- 1-bed/2P M4(3) adaptable
- 2-bed/3P M4(2)
- 2-bed/3P M4(3) adaptable
- 2-bed/4P M4(2)

### Non-residential space

Creating a good mix of uses is a vital part of creating sustainable places. This rich mix of clustered uses is what makes Mill Road and the surrounding area so successful.

Retail/community space is proposed at the ground floor of a proposed small apartment building near the entrance to the site on Headly Street (B09). This building will be visible from Mill Road and, together with the existing gatehouse building diagonally opposite, will form a gateway to the new neighbourhood.

The majority of community and non-residential uses are envisaged to be provided in the southern portion of the site, as part of the relocation of the YMCA (comprising the existing Gatehouse building and adjacent new building). The approach aims to create a mixture of uses in this area (consistent with the Planning and Development Brief, SPD). For the purposes of this application, however, this area been excluded to allow for further discussions with the YMCA and others. An application for this part of the site is likely to come forward in mid-2018. As a result, this application is only for the balance of community/retail uses included on the remainder of the site.

### Quantum

The following are the total proposed gross external areas (GEA) for all the buildings, split by use:

<b>Retail/community</b> (A1/A2/A3/D1)	72 m2 (gross internal)
<b>Residential</b>	22,340 m2 (184 units)
<b>Basement</b>	4,200 m2



The majority of community uses are envisaged to be provided as part of the relocation of the YMCA

## ACCESS AND MOVEMENT

### Pedestrian and cycle movement

The proposed development is highly permeable. All the streets are designed with pedestrians, cyclists and those with impaired mobility in mind. Wherever possible, routes have been designed with the minimum of obstructions, dropped kerbs, raised tables and flat thresholds. The layout also fosters natural surveillance of the streets and open spaces.

Wherever possible, place making has been emphasised over vehicle movement through the use of tighter geometry and local narrowing of roads to reduce speeds and to reclaim public realm. Paved raised areas of roads and other materials, such as heritage asphalt, have been introduced to create a series of events that respond to key spaces and buildings.

Pavements are generous and desire lines have been considered to create a more comfortable and simplified pedestrian environment.

In addition to the public streets, gated shared passageways between the gardens offer access to the rear of every house, offering flexibility and convenience. It is envisaged that in most instances these passageways would be gated to ensure the safety and security of the residents.

All the proposed new roads and pavements are intended for adoption by the Highways Authority.

Please refer to the landscape chapter and hard landscaping drawings for further information.

### Building entrances

The proposed houses address the new streets with frontages and front doors directly accessible from the streets. All entrances have level thresholds. The main entrances into the apartment buildings are all visible from the street network and are accessible from it. The apartment buildings address the streets and form frontages to the public open spaces.

The two taller apartment buildings at either end of Eagle Foundry Street have their entrance directly off the street,

with large canopies announcing their entrances. These are designed to incorporate signage that will be visible when viewed obliquely along the street.

The entrances into the apartments along the railway are accessible from the areas of landscaped open space. A slight incline has been introduced externally to allow to the ground floors of these buildings to be slightly raised above the level of Chisholm Trail at the rear.

Each apartment building has its own main entrance which provides direct access into communal lobbies. Security will be provided by access control systems. Post boxes will either be accommodated in lobbies or on the external wall adjacent to the main entrance door. The lobbies generally provide direct access to the circulation core with a lift to the residential apartments and to the staircase in each building.

Please refer to the accessibility chapter for further information on access.

### Vehicular movement

Vehicles can only access the site from Mill Road. This approach is consistent with the Planning and Development Brief (SPD). In addition, there is provision for emergency vehicle access to/from Hooper Street.

A thorough traffic assessment has been carried out by the transport consultant. Briefly, the assessment indicates that there will be a significant reduction of traffic on the site during the morning peak period compared to its current use. The assessment also indicates that there will be a slight increase in traffic during the afternoon peak period but that this is addressed by the proposed design changes and improvements to the junction on Mill Road.

The current proposals are designed to improve vehicle access by:

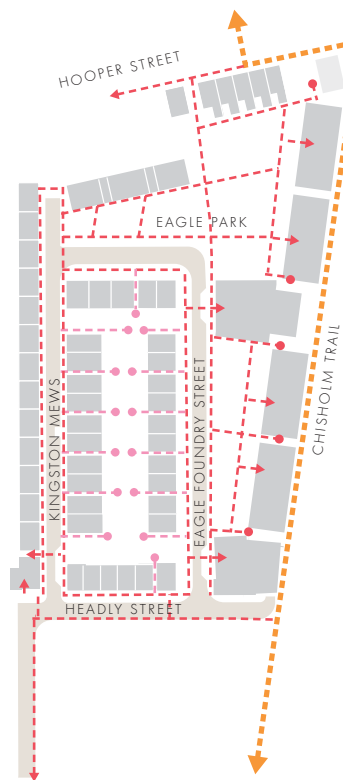
- Widening the footway to improve the pedestrian access along Mill Road.
- Increasing the visibility for drivers through changes to the bridge parapets and the removal of a brick pier.

Please refer to the Transport Assessment for further information.



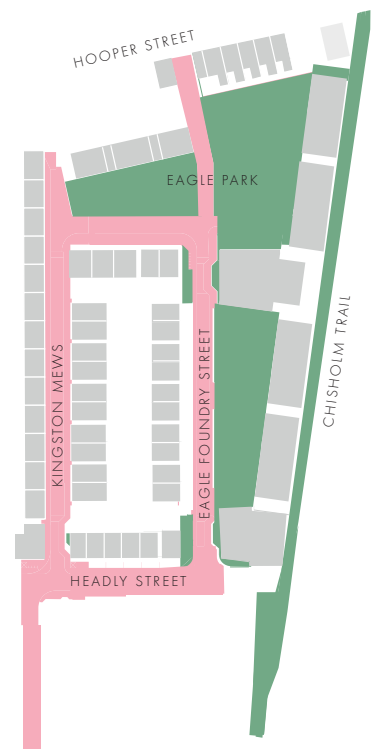
**Car movement**

- - - cars
- - - emergency access only



**Pedestrian cycle movement**

- - - public footpaths
- - - passages between houses
- - - chisholm trail



**Adopted road and landscape (indicative only)**

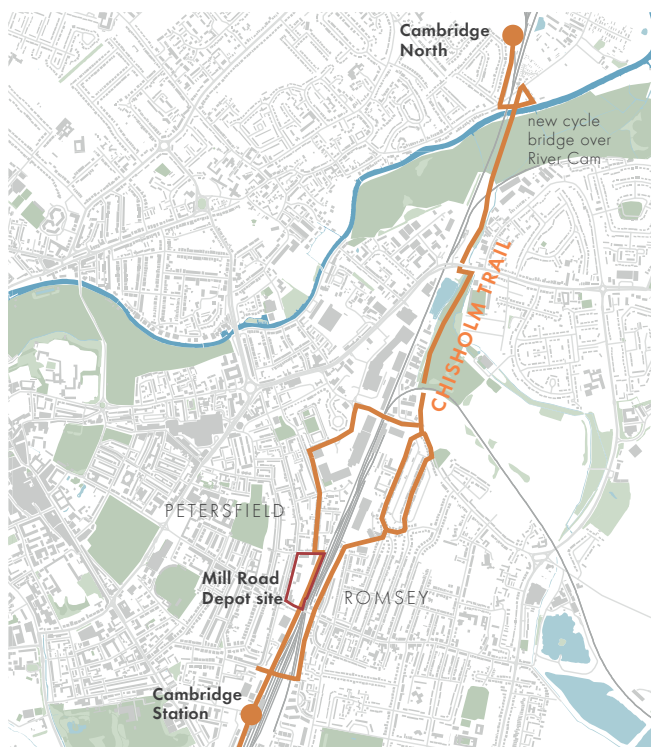
- adopted highway
- adopted landscape

## Chisholm Trail

The proposals also make full provision for the future delivery of the Chisholm Trail; a proposal to create a mostly off-road and traffic-free route between Cambridge Station and the new Cambridge North Station. The Mill Road Depot site provides a key link in this Trail.

As currently planned, it is proposed to run along the railway line on the east side of the site. At the southern end of the site, the trail is intended to pass through a currently disused arch under the Mill Road Bridge (outside the application boundary). At the northern end it connects to the on-street network along Hooper Street. In addition, the Chisholm Trail can be accessed within the site at the end of Headly Street.

Please refer to the landscape report for further details.



The Chisholm Trail will connect Cambridge Station with Cambridge North



A 6m wide strip along the railway has been reserved for the Chisholm Trail. At the southern end of the site it would pass under Mill Road Bridge

**Refuse collection**

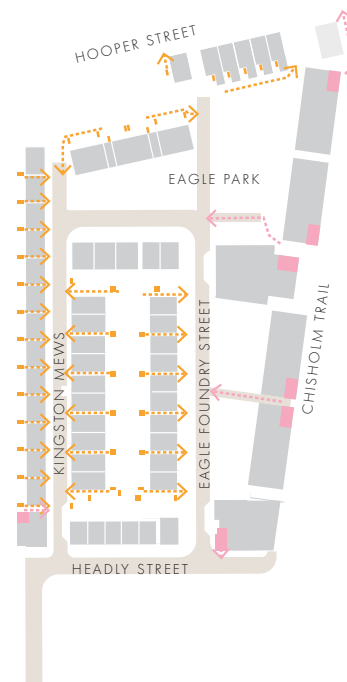
In all areas, streets have been designed to allow collection by the local authority refuse service. This imposes certain constraints on the design, but avoids service charges that would otherwise be imposed on residents.

The proposed street layout allows refuse vehicles to enter and circulate around the site using the same loop as other vehicles. In two locations, to serve the apartments buildings near the railway, landscaped hardstandings have been introduced to allow the refuse vehicles access to suitable points for collection of waste receptacles. These are large enough to allow a refuse vehicle to turn, but are designed as paved landscaped spaces rather than roads.

Each house will have its own refuse bins accommodated on-plot. For most houses, bins are located in the rear gardens in separate enclosures. The houses along Hooper Street will house their bins in an enclosure at the rear of each house, while the mews houses store their bins in the garage. The maisonettes in building B-08 each have their refuse bins in their rear gardens. These will be housed in enclosures integrated into the boundary treatment.

Typically, shared passageways between the gardens allow the bins to be taken to the front of the property for collection by the local authority refuse service. In a few locations, the collection point is not directly in front of the house, but in a small, screened area of handstanding. Drag distances vary but the maximum of 25m has been adhered to.

Each apartment building is provided with a refuse store at ground floor. These are accessible by residents from the communal lifts and staircase. The refuse stores are all located within 10m of a loading point for refuse vehicles.



**Refuse**  
 - - communal refuse routes  
 - - private refuse routes

## PARKING

### Car Storage

Following feedback from local residents and stakeholders, we have reduced the car parking from approximately 1.0 spaces per dwelling to 0.65 spaces per dwelling, which is a similar level of car parking as the surrounding area and in accordance with the direction of the Planning and Development Brief (SPD).

Due to the inclusion of the basement car park, there will be very little on street parking, which will in turn improve the quality of streets and spaces. 80% of car parking spaces (124 no.) are either in the basement or integrated garages, only 20% will be at street level (27 no.).

A total of 101 car parking spaces will be provided in the basement. Of these, 76 will be for residents, 10 will be reserved for visitors and 15 for other uses. Of the total, 13 will be accessible 'Blue Badge' parking bays.

21 houses have on-plot parallel car parking spaces outside their front door, while 23 houses have integrated garages with one car parking space in each. Electric charging points will be provided for each house with a garage.

In total, 120 car parking spaces for residents are proposed.

### Visitor car parking

10 car parking spaces in the basement have been allocated for visitor use. In addition, 6 surface visitor car parking spaces are provided.

### Car club spaces

The proposals envisage one designated car club space on street. This is likely to be one of the four visitor spaces on Eagle Foundry Street. Enterprise Rent-A-Car have agreed in principle to locate a vehicle on the site.

### Electric charging points

The proposals envisage installing and providing the necessary electrical loading for the following:

- 100% slow electric charging points for houses with garages (23 houses), all active
- 50% slow electric charging provision in basement

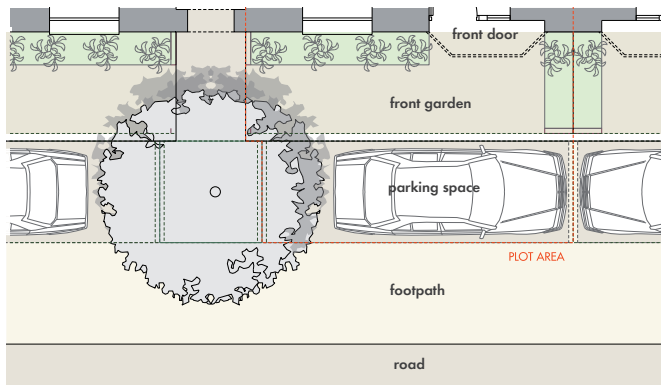
This 50% provision in basement will comprise:

- 10 slow active electric charging spaces (charging points installed)
- 40 slow passive electric charging spaces (ducting and loading capacity provided)
- (Slow = up to 3kW. Fast = 7kW- 22kW)

This provision has been informed by consultation with officers at the Council.



Integrated garages are proposed along Kingston Mews



Parallel on-plot parking spaces are proposed on some streets, integrated with the landscaping. Please refer to the landscape chapter for further details