Chelmsford Garden Community April 2022

Chelmsford Garden Community – Parking Strategy and Standards Study

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Executive Summary

1: Introduction

Steer was appointed by Chelmsford City Council (CCC) to provide sustainable transport support and advice in relation to the emerging Development Framework Document (DFD), or Masterplan, for the Chelmsford Garden Community (CGC).

This study provides an evidence base suitable to establish appropriate parking standards at CGC. This responds to an emerging Essex Parking Standards update led by Essex Planning Officers' Association (EPOA) which will encourage the local planning authority (LPA) for each Garden Community within Essex to develop its own parking standards for that Garden Community.

This document sets out guidance for CGC on the quantum, nature and design of vehicle and cycle parking which will, in line with the Garden Community's objectives, help to encourage high levels of travel by active modes and public transport to manage highway congestion, limit vehicle emissions, improve public health and reduce road danger.

2: Policy and Guidance Context

There are a number of policy and guidance documents applicable to the scope of the Masterplan, which are relevant to how parking standards should be determined and how parking should be designed.

The Town and Country Planning Association (TCPA) 'Guide 13 Sustainable Transport' has been central in informing how the parking standards for CGC should be established, through adopting a 'vision and validate' approach and not a 'predict and provide' approach. The guidance notes that car parking standards should support the use of public transport and be linked to mode share targets. Innovative solutions are encouraged, such as community car parks on the edge of development and parking barns.

The National Planning Policy Framework (NPPF) sets out what LPAs should consider when setting car parking standards, as follows:

- Accessibility of the development
- Type, mix and use of development
- Availability and opportunities for public transport
- Local car ownership levels
- Need to ensure an adequate provision of spaces for charging plug-in and other ultra-low emission vehicles

The NPPF states that maximum car parking standards should only be set where there is justification that they are necessary for management of the local road network, or optimising density within areas well served by public transport. Maximum standards are appropriate for CGC given the known pressures on the local and strategic highway network.

The design of streets and parking areas should reflect current national guidance, including the National Design Guide and National Model Design Code. These recommend that:

- Car carking could be provided off-street to avoid footway parking or congested streets.
- Car parking be well designed, attractive, well landscaped and sensitively integrated into the built form so that it does not dominate the development or the street scene.
- The arrangement and positioning of car parking relative to buildings limit its impacts, whilst ensuring it is secure and overlooked.

Unallocated car parking is identified an efficient way to provide car parking. It may be necessary to manage unallocated on-street car parking through controlled parking zones and permits. Where large areas of surface-level parking car are necessary, it may be located towards the rear of the plot or block, away from the street.

At a regional level, Essex County Council's (ECC's) 'Parking Standards: Design and Good Practice' document was published in September 2009 and is currently being updated. It includes a series of parking standards for various use classes for vehicles, powered two-wheelers (PTW) and blue badge provision. Policy DM7 of CCC's adopted Local Plan requires conformity with the ECC parking standards referenced above. In addition, Policy DM25 details electric vehicle (EV) charging point standards.

3: Evidence Base and Benchmarking

To respond to the information that is required by the NPPF and TCPA Guide 13 in setting local car parking standards, analysis and consideration have been undertaken of the following:

- Existing local car ownership and method of travel to work data for Chelmsford
- The proposed type, mix and use of development for CGC and its accessibility and movement characteristics
- Benchmarking of car and PTW parking standards in other Garden Communities and local authorities

2011 Census data shows that, as distance from Chelmsford city centre increases, as does the proportion of people driving to work and the proportion of households having access to two or more cars.

CGC's design evolution benefits from recent, local precedents of Beaulieu and Channels which provide a mix of on-plot and on-street parking, controlled parking zones enabled through permits for residents and visitors. The majority of zones in Beaulieu provide over 2 car parking spaces per dwelling whilst all zones in Channels provide at least 2 spaces per dwelling. Beaulieu and Channels, however, are not designated as a Garden Community and pre-date TCPA Guide 13.

There is an emerging Vision for CGC, established as part of the DFD, which identifies a series of metrics and principles that the Garden Community will be structured around. These include a requirement for all homes to be within 400-800m of a bus stop and car club vehicle. Infrastructure to support EV uptake is required and on-plot parking should be limited. The expected impact of connected and autonomous vehicles (CAVs) on car parking demand should be planned for through designing for car parking that can be re-purposed to other uses should CAVs become widely adopted (with CAVs there is less need for parking close to origin/destinations, as they could self-park further away, or pick up another user if part of a shared fleet).



The emerging Vision sets out a mode share target which is for 60% of journeys generated from CGC to use active travel and/or public transport. Delivering this mode share necessitates a framework that supports low levels of car use alongside ensuring high quality non-car alternatives are prioritised, in combination with constrained levels of car parking.

Steer has completed a benchmarking exercise to establish how LPAs for similar development contexts (garden communities, urban extensions and suburban locations) have established their parking standards and what those standards are. This has been done for the primary uses proposed within CGC: residential, office, retail and education.

4: Suggested Cycle Parking Standards and Design

The most recent guidance regarding high quality cycle parking infrastructure is presented within the Department for Transport's Local Transport Note 1/20 'Cycle Infrastructure Design' (2020) (commonly referred to as LTN 1/20).

Table 11-1 of LTN 1/20 outlines typical minimum cycle parking standards for different uses. These represent a recent and comprehensive set of informed standards for England and Northern Ireland which set the current benchmark for minimum cycle parking requirements.

Land use type	Sub-category	Short-stay spaces required	Long-stay spaces required
All	Parking for adapted cycles for disabled people	5% of total capacity co- located with disabled car parking	5% of total capacity co- located with disabled car parking
Retail	Small (<200 sqm)	1 per 100 sqm	1 per 100 sqm
	Medium (200-1,000 sqm)	1 per 200 sqm	1 per 200 sqm
	>1,000 sqm	1 per 250 sqm	1 per 500 sqm
Employment	Office/Finance (A2/B1)	1 per 1,000 sqm	1 per 200 sqm
	Industrial/Warehousing (B2/B8)	1 per 1,000 sqm	1 per 500 sqm
Leisure and institutions	Leisure centres, assembly halls, hospitals and healthcare	Greatest of: 1 per 50 sqm or 1 per 30 seats/capacity	1 per 5 employees
	Educational Institutions	-	Separate provision for staff and students. Based on Travel Plan mode share targets, minimum: 1 per 20 staff and 1 per 10 students
Residential	All except sheltered/elderly housing or nursing homes	-	1 per bedroom

There are six key principles for delivering 'best practice' cycle parking, as follows:

- Safe
- Inclusive and accessible to all
- Attractive
- Standardised quality
- Coherent
- Catering for demand

Short-stay spaces should be obvious, easily accessed and close to the destination. Short-stay cycle parking's primary function is to cater for swift, 'in-and-out' trips. It should be included at virtually all destinations.



Long-stay spaces should be secure and covered. Spaces should be more conveniently located than car parking and be provided in dedicated facilities at ground level of each property. Access to cycle parking should not be through a dwelling. In communal long-stay cycle stores, 5% of spaces should be designed to accommodate larger and adapted cycles.

In the workplace context, supporting facilities such as changing rooms, showers, lockers and drying areas should be provided.

To ensure adequate facilities for e-bikes (and e-scooters should their use on the public highway be legalised) it is recommended that one three-pin socket is provided per 20 long-stay cycle spaces within long-stay cycle stores.

5: Suggested Car and PTW Parking Standards, Design and Management

Steer considered the TCPA guidance, planning policy, evidence and benchmarking, alongside applying professional judgement, to assign car and PTW standards to the different use classes proposed within CGC.

Scenarios for low, medium and high car parking provision were considered, but ultimately a low scenario for the standards was chosen, which aligns with the Consortium's desired approach.

The proposed residential car parking standards are set out in the table below. They are lower than those applied at Beaulieu and Channels, and are comparable with the average of the benchmarking exercise.

The standards should be reduced as CGC is built out and new amenities are introduced; factors which will increase the internalisation of trips and make active modes and public transport more feasible. This would reduce the need to own a car, in particular a household's second car.

Size	Standard spaces per dwelling	Visitor spaces per dwelling	
1 Bedroom	1.00 (aff plat ank)		
2 Bedrooms		0.25	
3 Bedrooms +	1.50 (max. 1 space on-plot, remainder off-plot)		

The proposed standards are aspirational and forward thinking in that they are in line with TCPA guidance in prioritising sustainable travel and they align with the emerging Vision that CGC should be a place where you do not need to own a car. The parking standards are derived to ensure that public transport connections are essential, viable and a preferred choice.

Consideration has been given to the expected impact of CAVs in reducing parking demand. Onplot parking would be one of the least adaptable forms of car parking should CAVs reduce the need to park within or outside one's home and it is recommended that on-plot parking is limited to a maximum of one space for 3-bed+ dwellings only. All other car parking would be shared offplot and effectively unallocated. Resident and visitor car parking should be provided on-street or off-street within parking barns or courts.

Given the distance between CGC and the proposed Beaulieu rail station, it is not reasonable to align the residential parking standards to the station's catchment. Furthermore, the emerging Vision requires all homes to be within 400-800m of a bus stop and car club vehicle. Therefore, at this stage, the standards are not differentiated by public transport accessibility as this is expected to be relatively uniform across CGC. This can be re-considered when there are firmer public transport proposals as part of the Masterplan.



This report also sets out parking standards and design guidance for non-residential uses, blue badge parking, PTWs, EVs and cycles. Information is also provided on the requirements for car club provision and their associated package of measures to support use and long-term viability.

Design and Management Principles

Limiting on-plot parking minimises the amount of land locked into private parking, provides ease of future-proofing for emerging technologies and achieves significant benefits through removing extensive vehicle crossovers of footways which inhibit pedestrian movement and safety, in particular those using wheelchairs and pushchairs.

Off-plot parking can be provided on-street or within parking barns and courts.

On-street parking is the least preferable option and must be carefully reviewed to ensure no footway parking, that where controlled parking provided it is robustly enforced and that access is retained for servicing, emergency and public transport vehicles. Design of on-street parking must minimise severance and perceptions of car dominance.

The majority of resident parking should be provided with parking barns and courts. In principle, these approaches are very similar; but the former provides more efficient use of the land through decking to deliver extra parking or community uses. In both applications, the parking should be provided in off-street locations within discreet, regularly shaped parcels of land within each neighbourhood or at the edge of a community.

In contrast to on-street and on-plot parking, which is convenient to residents, parking barns and courts reduce the level of convenience of using a car, particularly to make shorter trips. However, their design should be carefully considered to maintain high levels of perceived and actual safety and security. There should be natural surveillance of car parking.

All parking spaces should be clearly marked out on the street or within car parks. In order to mitigate against inconvenient and footway parking on the street, stopping and waiting restrictions should be comprehensive and stringently enforced.

Car parks would likely be owned by the CGC stewardship body and managed by their appointed parking management company (e.g. South Essex Parking Partnership (SEPP)). Access to parking barns and courts can be controlled and enforced through automatic number plate recognition (ANPR) or on-foot by wardens of the parking management company.

Parking spaces should not be sold to users but instead be leased to enable flexibility in how the land they take up can be used in the future. Parking revenue, such as from permit schemes and leasing of parking spaces, generated at CGC could be recycled back into the stewardship body.

1 Introduction

Context

- 1.1 Steer has been appointed by Chelmsford City Council (CCC) to provide sustainable transport support and advice in relation to the emerging Development Framework Document (DFD), also known as the Masterplan, for the Chelmsford Garden Community (CGC).
- CGC is located to the north-east of Chelmsford city centre and forms Strategic Growth Site Policy
 (SGS6) North East Chelmsford; allocated in the Chelmsford Local Plan which was adopted
 May 2020.
- 1.3 The CGC site landowners, promoters and developers are collectively known as the North East Chelmsford Garden Village Consortium (the Consortium).
- 1.4 An initial draft of the Masterplan was produced in 2018 to support CGC's allocation for the Local Plan, which satisfied the Planning Inspectors' requirements at Examination in Public. However, the Consortium is now revisiting the Masterplan, in collaboration with CCC and Essex County Council (ECC) as highway authority, with a view to submitting the DFD to CCC Members for approval in early 2022.

Scope of Report

- 1.5 This Parking Strategy and Standards Study seeks to present the justifications and an evidence base for the parking standards at CGC. Specifically, this document encompasses provision for cycles, cars and powered two-wheelers (PTWs).
- 1.6 This document responds to the emerging update to the Essex Parking Standards, being led by Essex Planning Officers' Association (EPOA), which will encourage the local planning authority (LPA) for each Garden Community within Essex to develop its own parking standards for that Garden Community.
- 1.7 Garden Communities must be underpinned by the Garden City principles developed by the Town and Country Planning Association (TCPA) which form a framework for delivering highquality places and are discussed in more detail below.
- 1.8 This document sets out guidance for CGC on the quantum, nature and design of vehicle and cycle parking which will help to encourage high levels of travel by active modes and public transport to manage highway congestion, limit vehicle emissions, improve public health and reduce road danger.
- 1.9 The proposed standards account for the expected demand and need for car ownership particularly in the next 10-15 years before possible effects of connected and autonomous vehicles (CAVs) on lowering car ownership are felt.



Local Plan Allocation

- 1.10 Policy SGS6 sets out the development requirements, land uses and other policy requirements for CGC which will deliver:
 - Residential
 - Around 3,000 homes of a mixed size and type including affordable housing to 2036, together with the capacity for an additional 2,500 new homes post 2036;
 - Employment
 - 45,000 sqm of employment floorspace with a range of unit types and sizes;
 - Retail/community
 - Neighbourhood Centres with food retail, community and health care provision;
 - New community facilities including allotments and formal sports pitches/courts, country park

Education

- A secondary school;
- Two primary schools with early-years and childcare nurseries;
- Two additional stand-alone early-years and childcare nurseries;
- Other:
 - A comprehensive network of walking and cycling routes;
 - Expansion of on-site Chelmsford Area Bus Based Rapid Transit (ChART);
 - Part of the Chelmsford North East Bypass (CNEB); and
 - Expansion of the existing Chelmer Valley Park and Ride.
 - Travelling Showpeople site for 9 serviced plots;
- 1.11 The allocation will be subject to planning applications and construction in a phased manner over the next two to three decades and so it is critical that flexibility is embedded within the DFD and the corresponding 'Vision' document.

Emerging Vision Document

- 1.12 The DFD will establish a 'Vision' for CGC, which is underpinned by the Garden City principles and will shape its future growth and development.
- 1.13 The Vision is being developed in partnership with the Consortium and follows input from the project Delivery Board, Steering Group, CCC Members and Community Liaison Group. The emerging Vision seeks to create a distinctive zero-carbon, healthy, inclusive, prosperous, green and well-connected community.
- 1.14 The Vision will develop through stakeholder workshops and public consultation in 2021, which will provide local people with an opportunity to help shape what CGC might look like in the future. The Vision will guide development of CGC and act as a form of quality control to ensure the creation of a high-quality place with sustainable transport, ecological net gain, healthy living, zero-carbon development and community-led governance.
- 1.15 Further discussion on the emerging Vision and how it impacts vehicle parking is provided at **Chapter 3**.



TCPA Garden City Principles

- 1.16 The TCPA's Garden City principles identify the key elements that are considered to make the Garden City model of development successful in the 21st century. The TCPA states that they are an *"indivisible and interlocking framework for their delivery, and include:*
 - Land value capture for the benefit of the community.
 - Strong vision, leadership and community engagement.
 - Community ownership of land and long-term stewardship of assets.
 - Mixed-tenure homes and housing types that are genuinely affordable.
 - A wide range of local jobs in the Garden City within easy commuting distance of homes.
 - Beautifully and imaginatively designed homes with gardens, combining the best of town and country to create healthy communities, and including opportunities to grow food.
 - Development that enhances the natural environment, providing a comprehensive green infrastructure network and net biodiversity gains, and that uses zero-carbon and energy-positive technology to ensure climate resilience.
 - Strong cultural, recreational and shopping facilities in walkable, vibrant, sociable neighbourhoods.
 - Integrated and accessible transport systems, with walking, cycling and public transport designed to be the most attractive forms of local transport."
- 1.17 Not all of the principles are directly related to transport, but there is a close relationship across the principles which draw on transport themes throughout. There is emphasis on health, the environment, accessibility and integration of neighbourhoods and transport networks.
- 1.18 A specific policy analysis of parking standards and guidance in relation to the TCPA principles is located within **Chapter 2** of this report.

Report Structure

- 1.19 The remainder of this document is formatted as follows:
 - Chapter 2: Policy and Guidance Context
 - Chapter 3: Evidence Base and Benchmarking
 - Chapter 4: Suggested Cycle Parking Standards and Design
 - Chapter 5: Suggested Car and PTW Parking Standards, Design and Management
 - Chapter 6: Summary and Next Steps

2 Policy and Guidance Context

Introduction

2.1 There are a number of policy and guidance documents applicable to the scope of the Masterplan, which are relevant to the how parking standards should be determined and how parking should be designed.

Policy and Guidance – National

TCPA Guide 13 Sustainable Transport (TCPA, 2020)

- 2.2 This Sustainable Transport guidance document constitutes Guide 13 of 'Practical Guides for Creating Successful New Communities', which aims to set out Garden City standards for the 21st Century and was published by TCPA in September 2020.
- 2.3 This guide has been central in informing how the parking standards for CGC should be established, through adopting a 'vision and validate' approach and not predict and provide.
- 2.4 It reflects the principles of the National Design Code which recommends the incorporation of green infrastructure, such as street trees, to soften the impact of vehicle parking.
- 2.5 It sees the sustainable application of Garden City principles as maximising their accessibility to both public and active travel as a means of minimising vehicle-based trips. This should correspond to the anticipated parking provision.
- 2.6 According to the guidance, zero-emission, shared vehicles should be prioritised over private internal combustion engine (ICE) vehicles. Pairing zero-emission vehicles with car sharing schemes can reduce the need and impact of parking and allow for the flexible re-use of parking spaces.
- 2.7 Parking standards should be established to make public transport services essential, viable and a preferred choice. Standards should be linked explicitly to mode share targets and be part of a wider parking strategy to include innovative solutions to avoid unsightly and dominating on-street parking, such as community car parks on the edge of development and parking barns.
- 2.8 The document references TCPA Guide 3 which requires Garden Cities to enable at least 50% of trips originating in the new settlement to be made by non-car means, with a goal to increase this over time to at least 60%.
- 2.9 Cycle parking should be more conveniently located than any car parking to encourage greater use.
- 2.10 The arrangement and quantum of car parking is stated to have "a fundamental effect on the quality of a place or development".



National Planning Policy Framework (MHCLG, 2021)

- 2.11 The National Planning Policy Framework (NPPF) published by the Ministry of Housing, Communities & Local Government (MHCLG), sets out national level planning policy to guide LPAs in devising appropriate policy measures in supporting their sustainable development. The newest edition of the NPPF was published in July 2021 and includes policy on promoting sustainable transport, making efficient use of land, and achieving well-designed places, all of which are relevant to the design and implementation of vehicle parking.
- 2.12 When setting local parking standards for both residential and non-residential development, policies should consider the following characteristics:
 - Accessibility of the development
 - Type, mix and use of development
 - Availability and opportunities for public transport
 - Local car ownership levels
 - Need to ensure an adequate provision of spaces for charging plug-in and other ultra-low emission vehicles
- 2.13 It determines that for both residential and non-residential development, maximum parking standards should only be set where there is justification that they are necessary for management of the local road network, or optimising density within areas well served by public transport.
- 2.14 The move away from maximum vehicle parking standards intended to mitigate under-provision of parking within low density developments with poor public transport provision which, coupled with poor management and enforcement of parking, can result in informal, unsafe footway and inappropriate parking.
- 2.15 When considering development proposals, the design of streets and parking areas should reflect current national guidance, including the National Design Guide and National Model Design Code.

National Design Guide (MHCLG, 2019)

- 2.16 The National Design Guide, published in October 2019 by the Government, sets out its priorities and provides a common overarching framework for design.
- 2.17 The document highlights that car and cycle parking standards are set locally and vary to reflect local conditions. The arrangement of parking has a fundamental effect on the quality of a place or development.
- 2.18 The key points made in relation to car parking are as follows:
 - Parking could be off-street to avoid footway parking or congested streets.
 - Parking should meet the needs of different users including people with disabilities.
 - Well-designed parking is attractive, well landscaped and sensitively integrated into the built form so that it does not dominate the development or the street scene.
 - Parking areas should incorporate green infrastructure, including trees, to soften the visual impact of cars, help improve air quality and contribute to biodiversity.
 - The arrangement and positioning of parking relative to buildings limit its impacts, whilst ensuring it is secure and overlooked.
 - Electric vehicle spaces and charging points need to be suitably located and designed to avoid street clutter.



National Model Design Code (MHCLG, 2021)

- 2.19 The National Model Design Guide, published in June 2021 by the Government, expands on the ten characteristics of good design set out in the National Design Guide.
- 2.20 The document states that cycle parking must be covered and secure to ensure its use. It differentiates between public (short-stay) cycle parking and provision within apartments, lower density suburban housing and workspaces.
- 2.21 In relation to car parking, there is reference to parking arrangements and residential parking options as follows:
 - Parking in urban neighbourhoods is likely to be on-street (for visitors), within the building (townhouse), or to the rear in gardens or parking courts.
 - Parking in suburbs is likely to be in-curtilage, at the front (with suitable landscape features) or to the side of the property, so cars do not dominate the street. Visitor parking is likely to be on-street.
- 2.22 The different ways in which residential car parking could be accommodated are shown in Figure2.1, split by unallocated and allocated options.
- 2.23 Unallocated parking spaces are defined as an efficient way to provide parking. A scheme provides for the average rather than the maximum level of car ownership. Its flexibility of use enables it to accommodate residents and visitors throughout the day. It may be necessary to manage unallocated on-street parking through controlled parking zones and resident parking permits.
- 2.24 Where large areas of surface-level car parking are necessary, it may be located towards the rear of the plot or block, away from the main street frontage. Planting, including a grid of trees between bays, can reduce the visual impact. Visitor car parking may be positioned on-street or close to building frontages.
- 2.25 The document also sets out how car parking could be integrated into different street types based on the development's movement hierarchy.





Source: MHCLG's National Model Design Code Part 2 – Figure 13

Current Policy and Guidance – Regional

Development Management Policies (Essex County Council, 2011)

- 2.26 Essex's Development Management Policies (DMP), published in February 2011, seek to deal with the County's continued development pressures, which reflect the balance between new housing and employment whilst protecting the transport network for the continued safe movement of people and goods.
- 2.27 Vehicle parking standards are contained within section DM8 of the DMP.
- 2.28 This sets out that ECC's 'Parking Standards: Design and Good Practice', published September 2009 and detailed below, should be referred to in terms of vehicle parking standards.

Parking Standards: Design and Good Practice (Essex County Council, 2009)

- 2.29 ECC's parking standards and design guidance were published in September 2009 and are currently being updated. It was published in response to national guidance which aimed to implement a design-led approach to the provision of car parking within the public realm. It also determined that LPAs should develop residential parking policies which consider levels of car ownership whilst promoting good design and efficient land utilisation.
- 2.30 Section 4 of the guidance considers vehicle, cycle, PTW and blue badge car parking standards for all use classes. Vehicle parking standards for the main use classes are indicated in **Table 2.1**.

	Vehicle	PTW	Blue Badge					
Use	Maximum	Minimum	Minimum					
Residential								
C3: Dwelling houses (1- bedroom)	1 space per dwelling	N/A	N/A if parking is in curtilage of dwelling,					
C3: Dwelling houses (2+- bedroom)	2 spaces per dwelling	N/A	otherwise as Visitor/unallocated					
C3: Dwelling houses (Visitor/unallocated)	0.25 spaces per dwelling (unallocated)	1 space, + 1 per 20 car spaces (for 1st 100 car spaces), then 1 space per 30 car spaces (over 100 car spaces)	200 vehicle bays or less = 3 bays or 6% of total capacity, whichever is greater. Over 200 vehicle bays = 4 bays plus 4% of total capacity.					
Retail/community								
A1: Shops (exc. Food stores)	1 space per 20 sqm		200 vehicle bays or less =					
A1: Shops (Food stores)	1 space per 14 sqm		3 bays or 6% of total					
A3: Restaurants and Cafes	1 space per 5 sqm		capacity, whichever is greater. Over 200 vehicle					
A4: Drinking Establishments	1 space per 5 sqm		bays = 4 bays plus 4% of total capacity.					
A5: Hot Food Takeaways	1 space per 20 sqm	1 chaco 1 1 nor						
D1: Non-residential (Medical centres)	1 space per full time equivalent staff + 3 per consulting room	20 car spaces (for 1st 100 car spaces), then 1	Dependent on actual development, on individual merit.					
D1: Places of Worship, Libraries	1 space per 10 sqm	space per 30 car spaces (over 100 car spaces)	200 vehicle bays or less = 3 bays or 6% of total capacity, whichever is greater. Over 200 vehicle bays = 4 bays plus 4% of total capacity					
D1: Non-residential (Day Care Centre)	1 space per full time equivalent staff + drop off/pick up facilities		1 bay or 5% of total capacity, whichever is greater					

Table 2.1: ECC Parking Standards (2009)



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lles	Vehicle	PTW	Blue Badge				
Use	Maximum Minimum		Minimum				
Employment							
B1: Business	1 space per 30 sqm	As for retail/community	200 vehicle bays or less = 2 bays, or 5% of total capacity, whichever is greater. Over 200 vehicle bays = 6 bays + 2% of total capacity.				
Education							
D1: Non-residential (Crèche, Childcare)	1 space per full time equivalent staff + drop off/pick up facilities	As for retail/community	1 bay or 5% of total capacity, whichever is greater				
D1: Education – Primary/secondary	1 space per 15 pupils						
Other							
Hotels	1 space per bedroom	As for retail/community					

Current Policy and Guidance – Local

Chelmsford Local Plan 2013-2036 (CCC, 2020)

- 2.32 Policy DM27 of CCC's adopted Local Plan determines its approach to parking standards. It regards the standards set out within ECC's 'Parking Standards: Design and Good Practice', detailed above, to be pertinent in determining planning applications.
- 2.33 In addition, Policy DM25 determines the following electric vehicle (EV) charging point standards:
 - Residential: 1 charging point per unit (dedicated off-road parking), and/or 1 charging point per 10 parking spaces (unallocated off-road parking)
 - Non-residential: charging points equivalent to 10% of total parking provision

3 Evidence Base and Benchmarking

Introduction

- 3.1 This chapter presents the evidence base that has been used to guide and inform the suggested parking standards for CGC, as detailed in **Chapter 5**.
- 3.2 To respond to the information that is required by the NPPF and TCPA Guide 13 in setting local parking standards, analysis and consideration have been undertaken of the following:
 - Existing local car ownership and method of travel to work data for Chelmsford
 - CGC's proposed type, mix and use of development, and its accessibility and movement characteristics
 - Benchmarking of parking standards across other Garden Communities and local authorities

Chelmsford – Existing Transport Context

- 3.3 Chelmsford city centre benefits from a rail station on the Great Eastern Main Line with regular services to London Liverpool Street and across East Anglia. The central bus station provides high frequency services to all parts of the local area.
- 3.4 Steer has undertaken analysis of the 2011 Census and prepared a series of maps (see **Figure 3.2**, **Figure 3.3** and **Figure 3.4**) which clearly identify the correlation between proximity to Chelmsford city centre, mode of travel to work and car ownership.
- 3.5 As distance from Chelmsford city centre increases, so does the proportion of people driving to work and of households having access to two or more cars. There is a visible walking and cycling bubble around Chelmsford city centre and there is an inverse correlation between walking and car ownership.
- 3.6 Selecting output areas (OAs) within a 20-minute walk catchment of the rail station (based on the route calculator "OpenRouteService", assuming walking speed of 4.8km/h), shows that only one OA out of 92 has a dominant car ownership of two vehicles. This number increases to 18 OAs within a 10-minute cycle (based on OpenRouteService, assuming cycling speed of 18km/h) only 6.8% of all OAs overlapping the cycling catchment.

3.7 Although the above analysis is based on the 2011 Census data, the results are considered representative of the present-day situation, with recent city centre developments likely to have increased the trend towards lower car usage in such locations. Analysis of vehicle licencing¹ and population growth² in postcode districts overlapping CCC's local authority boundary shows that per capita vehicle ownership has either remained stable or decreased slightly since the 2011 Census data was collected, as car ownership has broadly increased in line with population. This data is presented in **Table 3.1** and the postcode districts are mapped at **Figure 3.1**.

Postcode District	2011	2015	2016	2017	2018	2019	2020	2021
CM1	0.48	0.49	0.49	0.49	0.49	0.48	0.48	0.48
CM2	0.52	0.53	0.53	0.53	0.53	0.52	0.52	0.51
СМЗ	0.60	0.62	0.62	0.62	0.62	0.62	0.61	0.60

Table 3.1: Licenced Vehicles per Capita by Postcode District

Figure 3.1: Chelmsford Postcode Districts



² Geoplan datasets.



¹ 'All vehicles (VEH01): Data on all licensed and registered vehicles', DfT and DVLA: <u>https://www.gov.uk/government/statistical-data-sets/all-vehicles-veh01</u>







Figure 3.3: 2011 Census – Chelmsford Car % Method of Travel to Work



Figure 3.4: 2011 Census – Chelmsford Walk or Cycle % Method of Travel to Work

Beaulieu and Channels Case Study

- 3.8 Unlike other garden communities, CGC's design evolution benefits from recent, local precedents – Beaulieu and Channels – which were allocated sites in CCC's previous Development Plan. Subsequent to their allocation, outline planning permission was granted for 4,350 new homes, 40,000 sqm floorspace business park and a new rail station. The Consortium commenced construction in 2014 and the phased delivery of Beaulieu and Channels will continue into the late 2020s.
- 3.9 **Appendix A** provides a case study of the Beaulieu and Channels developments in terms of the applicable planning policy and the level of residential car parking which has been approved as part of reserved matters applications.

Chelmsford Garden Community – Proposed Accessibility and Movement

Emerging Vision Metrics and Principles

- 3.10 The emerging Vision identifies a series of metrics that the Garden Community will be structured around. Primarily, these ensure CGC will deliver walkable neighbourhoods with a network of safe and pleasant routes to enable and encourage people to choose active travel modes. Consequently, the metrics have wide-ranging impacts on land use and placemaking which will, in turn, affect densities, public transport accessibility and parking provision.
- 3.11 As set out in **Chapter 2**, the TCPA Guide 13 requires that we adopt a vision and validate approach to masterplanning and forecasting. The 'vision' element is clearly defined by the metrics and principles set out below.

Within 200 m of the home (2 to 3 minutes' walk)

- Local areas for play for small children
- Safe streets
- Street-scale amenity green spaces for sitting out
- Street trees

Within 400 to 800 m of the home (5 to 10 minutes' walk, or up to 4 minutes' cycle)

- Local equipped areas for play
- Community gardens and amenity green spaces
- Natural and semi-natural green spaces
- Bus stops
- Car club parking areas

Within 800 to 1,200 m of the home (10 to 15 minutes' walk, or up to 5 minutes' cycle)

- Neighbourhood-scale areas for play
- Neighbourhood-scale outdoor sports facilities
- Larger parks, community gardens and amenity green spaces
- Extensive areas of natural and semi-natural green space
- Primary school
- Community meeting space
- Convenience shops and other day-to-day services
- Sociable uses places to eat and drink
- Employment opportunities

Within 1,200 to 1,600 m of the home (15 to 20 minutes' walk, or up to 7 minutes' cycle)

• Largest outdoor sports facilities

Within 1,600 and 2,000 m of the home (20 to 25 minutes' walk, or up to 8 minutes' cycle)

- Main indoor sports and leisure facilities
- Secondary school

- 3.12 In addition to the metrics listed above, the following parking-related principles are defined:
 - Infrastructure to support EV uptake, and future-proofed with passive charging provision for parking spaces to facilitate a shift towards EV uptake.
 - Aim to control on-plot parking numbers and explore other origin parking solutions to allow less car-dominated neighbourhood streets.
 - Plan for autonomous vehicles through ensuring that surface and multi-storey car parking can be re-purposed for alternative uses.
 - Car club provision supports households to live car-free or to own and use fewer cars.
- 3.13 Furthermore, the emerging Vision sets out a mode share target which is for 60% of journeys generated from CGC to use active travel and/or public transport.
- 3.14 Ensuring that CGC accords with the metrics, principles and targets of the emerging Vision necessitates supporting low levels of car use and constraining car parking provision alongside ensuring high quality non-car alternatives.

Masterplan Accessibility and Movement Strategy – Summary

- 3.15 There will be a dense and permeable network of active travel routes throughout the Masterplan which will connect to the wider network beyond CGC.
- 3.16 Although subject to agreement with ECC at later stages of the planning process, there will be a broad network of bus routes that tie together all parts of CGC. Bus services will link externally to key destinations and within the Masterplan they will serve mobility hubs that would integrate public transport and shared transport (such as micromobility hire and car clubs). The bus network would benefit from priority infrastructure, such as bus gates, throughout the Masterplan to ensure good bus journey time reliability and enable buses to be an attractive option over the private car.
- 3.17 The Masterplan's highway network for private motorised vehicles will be designed to constrain movement to within low traffic neighbourhood cells with limited options for rat-running to support more direct and quicker journeys on foot and by cycle.

Parking Standards Benchmarking

- 3.18 Local authorities across the UK apply parking standards for new developments. These typically aim to balance viability and operational need versus sustainability objectives and modal shift.
- 3.19 Low or 'car-free' standards are primarily applied within inner cities, where people have the benefit of a wide range of local services and high public transport accessibility, and seek to enable higher densities where public transport capacity and connectivity allows. Greater levels of parking are usually appropriate in areas of lower density and poorer public transport.
- 3.20 The recent Government shift away from simple maximum parking standards aims to mitigate against issues of inconsiderate and footway parking, which creates issues for vulnerable road users and in particular those using wheelchairs and pushchairs.
- 3.21 As part of this study, Steer has analysed parking standards and associated justifications for two areas that share similar context to CGC and adopt principles to minimise vehicle use:
 - Ebbsfleet
 - Cambridge



- 3.22 Consideration has also been given to three cities: London, Birmingham and Bristol. Whilst these cities are larger than Chelmsford, the parking standards and evidence bases are relatively comprehensive and generally split parking standards between different contexts, of which some are applicable to CGC. In particular, the standards applied within the lower density, urban fringes of these cities have been considered.
- 3.23 Detailed summaries of the aforementioned policy documents and evidence bases for the above locations are provided at **Appendix B** and the standards are presented in **Table 3.2** to **Table 3.6**.
- 3.24 **Table 3.7** presents a summary of the benchmarking exercise in relation to PTW parking standards.
- 3.25 Only the main use classes which are expected to be delivered at CGC have been included: residential, office, leisure, retail and education.

ntial s)	Essex	(2009)	Ebbsflee	et (2018)	Cambrid	ge (2018)	London	(2021)	Birmingha	am (2021)	Bristol	(2014)	
Resider (Bed	Max Allocated	Visitor	Max Allocated	Visitor	Max Allocated	Visitor	Max Allocated	Visitor	Max Allocated	Visitor	Max Allocated	Visitor	
1	1		0.8-1	20% of	1				1	1 per 10	1		
2	2	0.25	1.05-1.5	total	total	T	0.25	1 5	Neve	1	dwellings	1.25	
3	2	0.25	1.2-1.8	provision (public	2	0.25	1.5	None set	2	(when 10+	4 6	None set	
4	2		1.3-2.4	realm)	2				2	dwellings)	1.5		

Table 3.2: Car Parking Benchmarking – Residential Use

Table 3.3: Car Parking Benchmarking – Office Use

Essex (2009)	Ebbsfleet (2018)	Cambridge (2018)	London (2021)	Birmingham (2021)	Bristol (2014)
1 space per 30 sqm	0-500 sqm: 1 space per 24 sqm 500-2,500 sqm: 1 space per 30 sqm	1 space per 40 sqm	Up to 1 space per 50 sqm	1 space per 40 sqm	1 space per 50 sqm

Table 3.4: Car Parking Benchmarking – Leisure Uses

Use	Essex (2009)	Ebbsfleet (2018)	Cambridge (2018)	London (2021)	Birmingham (2021)	Bristol (2014)
Multi-activity sports, leisure centres, gyms	1 space per 10 sqm of public area	1 space per 26 sqm or 1 space per 18 spectator seats	2 spaces for every 3 staff, plus 1 space for every 4 seats, including disabled car parking	Case by case basis. Refer to Sport England Guidance.	1 space per 25 sqm	1 space per 22 sqm
Team sports (outdoor sports pitches)	20 spaces per pitch plus 1 space per 10 spectator seats	-	-	-	-	-

Table 3.5: Car Parking Benchmarking – Retail Uses

Use	Essex (2009)	Ebbsfleet (2018)	Cambridge (2018)	London (2021)	Birmingham (2021)	Bristol (2014)
Non-food	1 space per 20 sqm	1 space per 30 sqm	1 space per 50 sqm	Up to 1 space per 50	1 space per 30 sqm	Within a primary shopping area, >250 sqm, 1 space per 100 sqm
Food	1 space per 14 sqm	1 space per 2.4 staff 1 space per 7 sqm for customers	1 space per 50 sqm up to 1,400 sqm and 1 per 18 sqm thereafter	sqm	1 space per 14 sqm up to 1,000 sqm 1 space per 18 sqm over 1,000 sqm	1 space per 20 sqm of drinking/dining space

Table 3.6: Car Parking Benchmarking – Education Uses

Use	Essex (2009)	Ebbsfleet (2018)	Cambridge (2018)	London (2021)	Birmingham (2021)	Bristol (2014)
Nursery, crèche, childcare	1 space per FTE staff + drop off/pick up facilities	1 space per 2.4 staff	2 spaces per 3 staff	Car free	Staff: 1 per 2 staff Visitors: 20% of staff parking	1 space per 2 FTE staff and 10% of staff parking in addition
Primary school	1 space per 15 pupils				2 spaces per 3 staff Visitors: 10% of staff parking	
Secondary school		1 space per 18 pupils				One space per 2 FTE staff and one space per 15 pupils

Table 3.7: PTW Parking Benchmarking – All Uses

Use	Birmingham (2021)	Essex (2009)	Ebbsfleet (2018)	Cambridge (2018)	London (2021)	Bristol (2014)
Residential			1 space for every	No standards.	No separate	PTW parking
Dwellings	Flats/apartments: 1 space per 20 units.	Visitor/Unallocated only: 1 space, + 1 per 20 car spaces (for 1st 100 car spaces), then 1 space per 30 car spaces (over 100 car spaces)	20 car parking spaces plus 1 additional space.		PTW standards but PTW spaces are required to count towards the maximum vehicle parking standard.	standards for all uses should equal 5% of the car parking provision.
Employment						
Offices	Min. 1 space or 2% of the total predicted staff and visitors/customers capacity, whichever is greater.					
Retail						
Food Retail	Min. 1 space up to 1,000 sqm. Over 1,000 sqm, minimum 1 space or 2% of the total predicted staff and visitors/customers capacity, whichever is greater.	1 space, + 1 per 20 car spaces (for 1st 100 car spaces), then 1 space per 30 car spaces (over 100 car spaces)				
Non-Food Retail Restaurants and Cafes	Min. 1 space or 2% of the total predicted staff and					
Education Leisure	visitors/customers capacity, whichever is greater.					

4 Suggested Cycle Parking Standards and Design

Introduction

- 4.1 This chapter presents the proposed cycle parking standards for CGC and the key principles for the design of cycle parking across different uses.
- 4.2 The most recent guidance regarding high quality cycle parking infrastructure is presented within the Department for Transport's Local Transport Note 1/20 'Cycle Infrastructure Design' (2020) (commonly referred to as LTN 1/20).
- 4.3 In addition to LTN 1/20, a number of other cycle parking guidance documents have been published over the last ten years, including the following:
 - Bicycle Association's Stands for Public Cycle Parking (2021)
 - Transport for London's London Cycling Design Standards (2014)
 - London Borough of Hackney's Transport Strategy (2014)
 - Greater Manchester Cycling Design Guidance & Standards (2014)
 - CIVITAS/City of Amsterdam Inner City Bicycle Parking Best Practices (2021)
- 4.4 The documents above have been used to inform both the standards and design principles set out below.

Cycle Parking Standards

- 4.5 Table 11-1 of LTN 1/20 outlines typical minimum cycle parking standards for different uses. These represent a recent and comprehensive set of informed standards for England and Northern Ireland which set the current benchmark for minimum cycle parking requirements.
- 4.6 The minimum standards are replicated in **Table 4.1** and should be applied to CGC.

Table 4.1: CGC Minimum Cycle Parking Standards

Land use type	Sub-category	Short-stay spaces required	Long-stay spaces required
All	Parking for adapted cycles for disabled people	5% of total capacity co- located with disabled car parking	5% of total capacity co- located with disabled car parking
Retail	Small (<200 sqm)	1 per 100 sqm	1 per 100 sqm
	Medium (200-1,000 sqm)	1 per 200 sqm	1 per 200 sqm
	>1,000 sqm	1 per 250 sqm	1 per 500 sqm
Employment	Office/Finance (A2/B1)	1 per 1,000 sqm	1 per 200 sqm
	Industrial/Warehousing (B2/B8)	1 per 1,000 sqm	1 per 500 sqm
Leisure and institutions	Leisure centres, assembly halls, hospitals and healthcare	Greatest of: 1 per 50 sqm or 1 per 30 seats/capacity	1 per 5 employees



Land use type	Sub-category	Short-stay spaces required	Long-stay spaces required
	Educational Institutions	_	Separate provision for staff and students. Based on Travel Plan mode share targets, minimum: 1 per 20 staff and 1 per 10 students
Residential	All except sheltered/elderly housing or nursing homes	-	1 per bedroom

Source: Table 11-1, LTN 1/20

Cycle Parking Design Principles

4.7

We consider that there are six key principles for delivering 'best practice' cycle parking. These principles have also been informed by Steer's previous experience in delivering cycle parking strategies across the UK. The six principles are as follows:

- **Safe** Cycle parking should be secure for the cycle and users should feel safe from the risk of personal crime.
- Inclusive and accessible to all Cycle parking should be easy to use and accessible to all users and types of cycles. Often, the best options are those which are simple and flexible enough to meet a broad range of users.
- Attractive Cycle parking should be of good quality design and well-maintained, so that users perceive the storage as safe and that it is of value.
- **Standardised quality** Cycle parking should be standardised to a high level, where all major destinations have strong provision for cycle storage that meets the needs of all.
- **Coherent** Cycle parking should be well-connected to cycle routes and key destinations, easy to find, and well-signposted.
- **Catering for demand** Cycle parking should be freely available, with sufficient quantum to cater for all existing demand and expected future growth.
- 4.8 Short-stay spaces should be obvious, easily accessed and close to the destination. Short-stay cycle parking's primary function is to cater for swift, 'in-and-out' trips. It should be included at virtually all destinations.
- 4.9 Long-stay spaces should be secure and covered. Spaces should be more conveniently located than car parking and be provided in dedicated facilities at ground level of each property. In houses without garages, this could be in the form of a specially constructed cycle shed with appropriate design in terms of its setting and urban design. Access to cycle parking should not be through a dwelling.
- 4.10 Residential long-stay cycle parking within garages or cycle sheds should be designed to accommodate larger and adapted cycles which can be heavy and measure up to 2.5m in length and 870mm in width. A standard cycle is typically 1.8m in length and 650mm wide.
- 4.11 In communal long-stay cycle stores (such as within offices, schools or flatted residential development), a minimum of 5% of spaces should be designed to accommodate larger and adapted cycles. This typically means provision of Sheffield stands (rather than two-tier racks) with minimum 1.8m spacings and wide aisles.
- 4.12 Long-stay cycle parking for nurseries and primary schools should allow for an appropriate amount of scooter parking in place of cycle provision.



Supporting Facilities

- 4.13 Long-stay cycle parking for employment uses should be provided alongside changing rooms, showers (one per 10 long-stay spaces), lockers (two per three long-stay spaces), an area to dry clothing and basic cycle maintenance facilities. Accessible facilities for disabled cyclists should also be provided.
- 4.14 Such facilities also benefit other users such as those travelling on foot (e.g. running to work) or using a PTW.

Charging Provision for E-Bikes and E-Scooters

- 4.15 E-bikes are becoming increasingly popular for both leisure and utility cyclists, as well as commercial applications such as food delivery and first/last mile logistics. There are two types of e-bikes with regards to batteries:
 - Batteries which can be removed to be charged (this applies to a high proportion of e-bikes)
 - Batteries which cannot be removed and are charged on the bike (e.g Vanmoof)
- 4.16 For e-bikes with removable batteries, most users will take the battery to their home or workplace and charge it there. This removes the issues of theft and means that no additional infrastructure is required in the cycle storage location.
- 4.17 For e-bikes without removable batteries, a regular three-pin socket is sufficient for charging and would need to be located in a location close to the parked e-bike.
- 4.18 Although e-scooters are currently illegal outside of share trials in the UK, this may change in the coming years. E-scooters have similar requirements for charging as e-bikes and, currently, people often charge e-scooters in their homes/offices, but this is not likely to be practical if take up increases.
- 4.19 At this moment in time, it is recommended that one three-pin socket is provided per 20 spaces within long-stay cycle stores. This requirement should be kept under regular review to ensure it remains fit for purpose.

Cycle Hire

- 4.20 There is an expectation that cycle hire facilities would be incorporated within mobility hubs across CGC, though the nature of this provision is yet to be defined. Ideally the cycle hire provision at CGC would be integrated within a city-wide scheme to enable longer journeys to local amenities outside of CGC.
- 4.21 Availability of cycles for hire at CGC could potentially reduce the amount of residential cycle parking required, though it should be noted that, typically, cycle hire caters for a different market of cyclist and should not be accepted in lieu of short- or long-stay cycle parking.
- 4.22 Regardless of the nature of the cycle hire scheme (dockless or docked), it should ensure that pedestrian capacity and safety, and public realm attractiveness are not adversely affected.



5 Suggested Car and PTW Parking Standards, Design and Management

Introduction

- 5.1 This chapter presents the proposed parking standards for CGC. The methodology for determining them is based on several factors, including:
 - Methodologies developed by other local authorities for similar development contexts
 - CGC development context and emerging Vision
 - TCPA Garden City principles and objectives
- 5.2 In considering the information, evidence and benchmarking set out in the previous chapters, alongside Steer's professional judgement based upon experience gained from similar studies, this chapter seeks to assign standards to the different use classes proposed within CGC.
- 5.3 The proposed parking standards are deliberately aspirational and forward thinking in that they seek to minimise ownership and use of the private car by people living, working, and studying in CGC. The parking standards are derived in the context of the range of transport services and travel planning initiatives to be provided at CGC which will ensure that active travel and public transport are attractive, essential, viable and a preferred choice.

Future-Proofing for Emerging Technologies

- 5.4 The emergence and rise in use of connected and autonomous vehicles (CAVs) over the next 10-15 years is anticipated to cause widespread changes to private car ownership and storage. CAVs do not presently feature explicitly within UK planning policy but given the timescales for delivery of CGC, they are vital to acknowledge.
- 5.5 Autonomous technologies create flexibility for rethinking the current inefficient model of car ownership and use; partly through parking/storing vehicles in other locations but also reducing the need for multiple vehicles per household. There are many different scenarios for how autonomation will shape car use in future, varying from a relatively unchanged situation (privately owned autonomous cars) to a change in use and ownership (e.g. shared vehicle fleets not privately owned where users can summon a vehicle that suits their needs for each journey).
- 5.6 When planning new developments, there are a range of potential benefits combining the use of people-focused design and autonomous technologies and new business models which may reduce car ownership. Through this combination of design, technology and change in ownership patterns the behaviour of vehicles on streets can be more actively managed and spaces for people to interact and move more sustainably can be prioritised.
- 5.7 Where vehicles are shared by groups of people, rather than privately owned by individuals, fewer vehicles are required, reducing the amount of space that needs to be allocated to parking.



- 5.8 Where vehicles are autonomous, parking does not need to be close to the home or destination, as vehicles are able to drop-off the user and park elsewhere.
- 5.9 In the early phases of CGC, there will be privately owned non-CAVs with the vehicle fleet having increasing connectivity but demand for parking is likely to be similar to present day.
- 5.10 As later phases are built out, it is reasonable to assume that CAVs will be more widespread and a shared fleet capable of being summoned from peripheral parking locations away from homes may become a reality. This will reduce overall car parking demand, particularly the need to have vehicles parked outside homes.
- 5.11 The uncertainty requires a flexible approach to be adopted; one which incorporates flexible residential and employment car parking, moving towards consolidated parking areas capable of being converted to other uses in the future.
- 5.12 On-plot parking, for instance driveways and garages, would be one of the least adaptable forms of car parking should CAVs reduce the need to park within or outside one's home. Therefore, there will be very limited on-plot car parking at CGC in the early phases, limited only to 3-bed+ dwellings, and all other parking would be off-plot and effectively unallocated.
- 5.13 Over time within later phases of CGC, it is anticipated that no on-plot parking would be provided for any dwelling at CGC.
- 5.14 Resident and visitor car parking should be provided on-street or off-street within parking barns or courts. Further information on this is provided later in this chapter.

Residential Car Parking Standards

- 5.15 For any given location, dwelling size is an important factor in determining levels of car ownership, which increases with the number of habitable rooms. Therefore, parking standards per-bedroom are the most suitable type of standard to use as they reflect likely number of residents and they are simple to interpret.
- 5.16 Given the distance between CGC and the proposed Beaulieu rail station, it is not reasonable to align the residential parking standards to the station's catchment (which is an approach adopted by some policy discussed in **Chapter 3**). Furthermore, the emerging Vision requires all homes to be within 400m of a bus stop. Therefore, the standards are not differentiated by public transport accessibility as this is expected to be relatively uniform across CGC. This can be re-considered when there are firmer public transport proposals as part of the Masterplan.
- 5.17 The proposed residential car parking standards set out at **Table 5.1** are lower than those applied at Beaulieu and Channels (see **Appendix A**) and are comparable with the average of the benchmarking exercise summarised in **Chapter 3**.
- 5.18 As described above, on-plot parking would only be provided for houses with 3 or more bedrooms. A maximum of one on-plot space is permitted per 3-bed+ dwelling with the additional parking (up to the maximum standard) provided within off-plot locations. If appropriate, 3-bed+ dwellings could have no on-plot spaces.
- 5.19 Any parking provided for 1- and 2-bed dwellings will be off-plot.
- 5.20 The standards apply regardless of unit type (house or flat) and tenure, although provision below the standards (even car-free development) would be supported for flats in higher density locations.



- 5.21 Where car-free development is justified through a Transport Assessment, appropriate covenants and Section 106 obligations would be agreed to ensure that those dwellings are marketed as car-free and to prevent residents from being eligible to apply for any resident parking permit scheme. Appropriate levels of blue badge parking would still need to be provided in car-free schemes.
- 5.22 Parking for specialist residential accommodation and travelling showpeople should be justified on a case-by-case basis.

Size	Standard spaces per dwelling	Visitor spaces per dwelling	
1 Bedroom	1.00 (off plat aply)		
2 Bedrooms	1.00 (011-piot only)	0.25	
3 Bedrooms +	1.50 (max. 1 space on-plot, remainder off-plot)		

Table 5.1: CGC Maximum Residential Car Parking Standards

Roadmap to Lower Residential Parking Standards

- 5.23 As CGC is built out it and new amenities are introduced, it will be possible for residents to make a greater number of trips within the development rather than having to travel elsewhere to access amenities. In turn, this makes active modes and public transport more feasible, reduces the need to own a car, in particular a household's second car, and means that residential parking standards could be reduced over time by 20% or more.
- 5.24 Future standards would be established through surveys of parking demand (e.g. counts of parked vehicles) across CGC as it is built out, appreciating that emerging technologies will also influence the approach to design and quantum of car parking.

Non-Residential Car Parking Standards

- 5.25 The standards for non-residential uses align with the average of the benchmarking exercise and are intended to constrain destination parking. This restricted provision, alongside the promotion of other measures such as travel plans, will help reduce and minimise parking requirements.
- 5.26 **Table 5.2** illustrates the proposed unallocated vehicle parking standards by type by various uses. Floor area is gross internal floor area as measured in the RICS Code of Measuring Practice.
- 5.27 Parking provision for other non-residential uses not specified below should be justified on a case-by-case basis.
- 5.28 Parking below the maximum standards would be supported, subject to demonstrating that suitable controls and management measures are in place to prevent inappropriate parking.
- 5.29 Where there are a number of non-residential uses in close proximity to one another, for instance within a neighbourhood centre, parking can be shared across multiple uses and the total number of spaces should be reduced.

Table 5.2: CGC Maximum Non-Residential Car Parking Standards

Use	Vehicle Parking Standard
Employment	
Office	1 space per 30 sqm
Retail/community	
Non-food retail	1 space per 30 sqm
Food retail	1 space per 20 sqm
Restaurants and cafes	1 space per 20 sqm
Education	
Education (primary and secondary schools)	2 spaces per 3 FTE staff Only blue badge parking for students Limited visitor parking subject to justification
Medical centres/surgeries	1 space per 2.4 FTE staff 2.5 spaces per consulting rooms
Nursery, crèche, childcare	1 space per 3 FTE staff Limited drop-off and pick-up provision
Leisure	
Leisure centres, gyms	1 space per 25 sqm
Sports pitches	10 spaces per pitch Appropriate provision for coaches

Blue Badge Car Parking

- 5.30 Residential blue badge parking should account for the proportion of wheelchair-accessible dwellings provided.
- 5.31 A disabled person's parking space, whether for a passenger or driver who's a blue badge holder, should be sited within 50m of their front door. 1- and 2-bed wheelchair-accessible dwellings should be permitted on-plot parking where is it not feasible to provide an off-plot space within 50m.
- 5.32 All non-residential developments should include a suitable level of blue badge parking provision in accordance with BS8300-1:2018 which is set out in **Table 5.3**.
- 5.33 At least one blue badge on- or off-street car parking space designated for blue badge holders should be provided for each non-residential use. Where there are a number of non-residential uses in close proximity to one another, for instance within a neighbourhood centre, blue badge parking can be shared across multiple uses.
- 5.34 The size and dimensions of blue badge parking for blue badge holders should accord with BS8300-1:2018, Essex Design Guide and Manual for Streets.



Table 5.3: CGC Blue Badge Car Parking Provision

Use	One space for each employee with a blue badge who requires a space	Blue badge spaces (% of total parking spaces)
Workplace	Yes	5
Educational buildings		5
Shopping, recreation and leisure		6
Medical and health facilities		6
Religious buildings and crematoria		Min. two spaces or 6%, whichever is the greater
Sports facilities	Refer to Sports England guidance	

Powered Two-Wheeler (PTW) Parking

- 5.35 Based on Steer's professional judgement, experience and the benchmarking exercise summarised in **Chapter 3**, PTW parking standards for all uses should equal a maximum of 3% of the car parking provision.
- 5.36 PTW parking should be secure, well-lit and in a prominent location. Security measures, such as anchor points, should be considered.

Electric Vehicle (EV) Charging

- 5.37 EV charging provision by use is set out in **Table 5.4**. The same proportions should be applied to standard and blue badge parking.
- 5.38 Although subject to the release of further information, the Government announced³ in November 2021 that there would be a requirement for EV charging points to be installed at new homes and buildings. EVs and charging requirements/specifications are constantly evolving, and so proposed standards for CGC should be reviewed regularly to ensure alignment with Government legislation, the EV market and expected future trends.
- 5.39 Currently, 'slow' chargers are suitable for residential and employment uses, whilst 'rapid' chargers should be provided in a retail setting for visitors and customers.
- 5.40 Passive provision means that the network of cables and power supply necessary are in place so that at a future date a socket can be added easily to make the space active. The cost of activating the space should be borne by the developer.
- 5.41 Careful consideration will need to be given to integrating EV charging infrastructure within car parks and on-street to ensure that pedestrian movement and safety are not hindered.

Table 5.4: CGC EV Charging Provision by Use

Use	Active	Passive
Residential	Min. 20%	80%
Employment (for staff of non-residential uses)	Min. 20%	20%
Retail (for visitors and customers)	20% (rapid only)	20%

³ 'PM to announce electric vehicle revolution': <u>https://www.gov.uk/government/news/pm-to-announce-electric-vehicle-revolution</u>



Car Clubs

- 5.42 The emerging Vision requires each dwelling to be situated within an 800m walk of a car club vehicle.
- 5.43 Car clubs provide a safe, secure and convenient way to use vehicles 24/7, where booking and vehicle unlocking is completed via a smartphone application. Car club vehicles offer a greater efficiency of vehicle storage as they are used much more frequently than their privately-owned counterparts. Car clubs help to support lower car parking provision and car-lite lifestyles by enabling multiple households to make infrequent trips by car.
- 5.44 It is likely that the car club model may change significantly over the next decades due to CAVs and emerging technologies, therefore the guidance and requirements set out below should be regularly reviewed.
- 5.45 **Table 5.5** illustrates the proposed car club provision by development size to ensure that sitewide provision is appropriate and well-considered.
- 5.46 All car club spaces should provide active EV charging infrastructure from the outset.
- 5.47 Developers should work with car club operators to incorporate car club vehicles within the development. A package of measures to support use of the car club should be funded by the developer, such as free membership for at least three years to each new household and business.
- 5.48 Any planning permission should include a Section 106 financial contribution per car club vehicle to set up the car club bays and markings (including traffic regulation orders if on public highway), and the cost of the vehicle(s) for a time-limited period.

Development Size (units)	Recommended Car Club Provision
1 - 199	1 vehicle (subject to approved car club provision in adjacent phases and subject to walk distance metric being achieved)
200 - 399	2 vehicles
400+	3 vehicles

Table 5.5: CGC Car Club Provision

Car Parking Design Principles

- 5.49 As set out earlier in this chapter, it is proposed that limited on-plot car parking within driveways would be permitted at CGC. This minimises the amount of land locked into private parking, provide ease of future-proofing for emerging technologies and achieves significant benefits through removing extensive vehicle crossovers of footways which inhibit pedestrian movement and safety, in particular those using wheelchairs and pushchairs.
- 5.50 Where on-plot parking is provided for 3-bed+ dwellings, these spaces should be limited to one per dwelling and provided within a driveway rather than a garage. The driveway could be to the side or the front of the dwelling and must be designed to ensure that footways are not blocked by overhanging parked vehicles.
- 5.51 Design of driveways must ensure that pedestrian safety and convenience are not compromised, that appropriate footway crossfalls are provided and that there is a good visibility for drivers and pedestrians.



- 5.52 As set out in **Chapter 2**, the National Model Design Code identifies a number of types of unallocated/off-plot parking:
 - **"On-street**: On-street parking can be in defined bays with limited runs interspersed with pavement build-outs, planting and street trees. It may include chevron parking depending on the width of the street.
 - **Car barns (parking barns)**: Decked parking structures. These may be free-standing multilevel parking structures or could include ground-level parking with a decked communal amenity space above.
 - **Parking courts**: Parking courts within development blocks. These may be open or gated."
- 5.53 Further detail on each of these options is set out below and it is likely that a mix of each would be suitable at CGC.

On-Street Parking

- 5.54 Of the three unallocated/off-plot parking solutions set out above, on-street parking is the least preferable.
- 5.55 On-street parking should be considered as part of the design of the streets to ensure that parking is controlled and robustly enforced and that access is retained for servicing, emergency and public transport vehicles. Allowances should be made for soft landscaping (recognising that para. 131 of the NPPF requires new streets to be tree-lined), and the movement of bins between dwellings and the carriageway.
- 5.56 Footway parking must not be permitted and footways should be designed to minimise the potential for parking on the footway.
- 5.57 Vehicles parked on-street must not obstruct or degrade the space given to pedestrians and cyclists, or deter people making shorter, regular trips on foot or by cycle.
- 5.58 Design of on-street parking must minimise severance and perceptions of car dominance. Streets must be safe, green and healthy places where people want to dwell, play and move by active modes.
- 5.59 Parking-related road markings and signage should be kept to an absolute minimum and incorporated into the streetscape sympathetically.
- 5.60 Compared with streets with no on-street parking, relatively high levels of on-street parking would require wider streets. As parking demand reduces over time, the extra space given over to parking could be re-purposed to deliver open space or active travel infrastructure.

Parking Barns and Courts

- 5.61 The majority of resident parking should be provided with parking barns and courts. In principle, these approaches are very similar; but the former provides more efficient use of the land through decking above to deliver extra parking or, for example, leisure or community uses.
- 5.62 For the earlier phases at CGC, smaller off-plot car parks would be preferred rather than larger areas given over to car parking.
- 5.63 Off-plot, remote parking barns and courts should become more widespread at CGC as technology advances and CAVs enable remote parking of vehicles.



- 5.64 Parking courts have been delivered across the UK for a number of decades, whilst parking barns with active uses on a deck above parking are a relatively new concept that have no known precedents in the residential context in the UK.
- 5.65 In both applications, the parking should be provided in off-street locations within discreet, regularly shaped parcels of land within each neighbourhood or at the edge of a community. Both applications provide flexibility to either:
 - Deliver additional parking provision in the longer term through decking, subject to urban design and other considerations. However, such parking should not undermine the constrained parking standards.
 - Replacing the car parking, as parking demand reduces, with additional open space, or a development plot.
- 5.66 Vehicle owners often prefer to have direct sight and surveillance over their vehicles from their residential property; however, in order to align with the Garden City principles, vehicle parking should be less convenient than other modes which should encourage more people to travel by cycle or on foot. As a result, it will not always be possible to guarantee owners direct sight of their vehicles. That said, the design of parking barns and courts should be carefully considered to maintain high levels of perceived and actual safety and security, ideally through natural surveillance.
- 5.67 Parking barns are more common in western and northern Europe and are typically utilised to consolidate car parking in one location, enabling 'car-free' development across a larger area. One such example, which is now complete and occupied, is a residential scheme in Freiburg, south-west Germany as illustrated in **Figure 5.1.** This scheme provides two peripheral multi-storey parking barns. It should be noted that the residential density of the Freiburg example is higher than that which would be achieved at CGC, but the principle would still be appropriate and applicable.
- 5.68 The opportunity to incorporate parking barns or courts should be considered in the design of the layout and size of development blocks. Typically, within the UK parking courts have been delivered at a relatively small scale (e.g. 5 to 20 parking spaces) within a block see layout at **Figure 5.2** which would not preclude conversion of a parking court to mews-style dwellings in the future.
- 5.69 At CGC, in order achieve appropriate levels of car parking and density, it could be necessary to apply the parking court or barn approach at a larger scale, similar to Vauban. This would allow entire development plots, rather than small infill locations, to be re-purposed from car parking to new properties/amenities in the future should parking demand reduce.



Figure 5.1: Vauban, Freiburg Residential Masterplan

Figure 5.2: Example of Small Parking Court Suitable for Retrofitting



Source: Ben Pentreath, The Steadings Phase 1A in Cirencester

Undercroft and Podium Parking

- 5.70 Undercroft, podium and under-deck car parks are well-suited to apartment buildings with parking at ground level and upper storeys at various heights. They could be a good option where topography allows; however, careful consideration must be given to ensuring that active frontages are provided to avoid sterilising the adjacent street.
- 5.71 Although not specified within the National Model Design Code it is possible that, in higher density locations within CGC, podium or undercroft car parking may be appropriate. Whilst this type of parking presents more of a challenge to retrofit when parking demand declines, it could be appropriate in certain locations where there is a strong case as to how it could be repurposed.

Vehicle Parking Management and Enforcement

- 5.72 All parking spaces should be clearly marked out on the street or within car parks. In order to mitigate against inconvenient and footway parking on the street, stopping and waiting restrictions should be comprehensive and stringently enforced.
- 5.73 Off-street car parks would likely be owned by the CGC stewardship body and managed by an appointed parking management company or the parking authority, South Essex Parking Partnership (SEPP).
- 5.74 Access to parking barns and courts can be controlled and enforced through automatic number plate recognition (ANPR) or on-foot by wardens of the parking management company.
- 5.75 Off-plot car parking spaces should not be sold to users (residents or businesses) but instead be leased to enable flexibility in how the land they take up can be used in the future. This approach ensures flexibility in the allocation of EV charging infrastructure, allows for allocated standard spaces to be converted to blue badge provision if required and eases the process of reducing car parking over time.
- 5.76 Ideally, residents or businesses wishing to lease a parking space within a car park will be provided with a permit for a 'right to park', although the location of the space may vary during the period of the lease to provide the flexibility needs outlined above.
- 5.77 It would be preferable for on-street parking to be provided within the public highway rather than private land due to difficulties in enforcing inappropriate and illegal parking on private land.
- 5.78 On-street parking permits could be issued to residents and their visitors by SEPP, as per the current arrangement at Beaulieu. However, SEPP's current policy allows for up to two permits to be allocated to each property which would need to be amended to accord with the proposed parking standards which limit parking below two spaces per property. The need to amend SEPP's policy would depend on how much resident parking were provided on-street within the public highway or whether the on-street parking was for visitors only, which could be managed through SEPP current visitor permit and tickets policy.
- 5.79 Parking revenue, such as from permit schemes and leasing of parking spaces, generated at CGC could be recycled back into the stewardship body.



6 Summary and Next Steps

Summary

- 6.1 This Parking Strategy and Standards Study presents the justifications and an evidence base for the proposed parking standards at CGC. This is a requirement of ECC's forthcoming parking policy update which will allow CCC to develop its own parking standards for CGC.
- 6.2 Current policy and guidance have been closely reviewed to inform the setting of the standards and mould the proposed approach to limit on-plot car parking at CGC in favour of on-street and off-plot provision.
- 6.3 The car parking standards for different uses and forms of parking (blue badge, EV, car club, PTW) reflect the TCPA's recommended vision and validate approach. The standards are aspirational and forward thinking in that they seek to minimise use of the private car. They support the emerging Vision for CGC and are derived to ensure that sustainable travel modes at CGC are prioritised in line with TCPA Guide 13.
- 6.4 Careful consideration has been given to the expected impact of CAVs in reducing car parking demand. On-plot parking would be one of the least adaptable forms of car parking should CAVs reduce the need to park within or outside one's home.
- 6.5 Therefore, as per the TCPA's recommendation; an innovative solution of car parking on the edge of development and within parking courts and barns is proposed. Limited on-street parking should be carefully provided to ensure that streets remain safe, green and healthy places where people want to dwell, play and move by active modes.
- 6.6 Car parking spaces should not be sold to users but instead be leased to enable flexibility in how the land they take up can be used in the future.
- 6.7 It is recommended that cycle parking is provided to the minimum standards according to national guidance (as set out in LTN 1/20) and appropriate provision is made for charging of ebikes at one three-pin socket per 20 long-stay cycle spaces within long-stay cycle stores.
- 6.8 This document should be regularly reviewed to ensure it remains relevant and fit-for-purpose, particularly in the context of emerging technologies, such as EVs and CAVs, and changing Government legislation.

Next Steps

6.9 It is envisaged that this document would form the evidence base to a forthcoming Supplementary Planning Document to be adopted by CCC in due course. The SPD would be a material consideration in determining future planning applications within CGC.

Appendices

A Beaulieu and Channels Case Study

Introduction

A.1 This appendix presents a case study of car parking provision at Beaulieu and Channels. Beaulieu and Channels have been built out in recent years and were consented under the previous Development Plan which is now revoked. Therefore, it is vital to gain an understanding of how the previous Development Plan policies were applied at Beaulieu and Channels and to use this information to understand how they are influencing actual car parking provision and ownership at Beaulieu and Channels.

Revoked Development Plan

Core Strategy and Development Control Policies DPD (CCC, 2008) [revoked]

- A.2 CCC's former Core Strategy and Development Control Policies DPD document was adopted in February 2008 and has since been superseded by the Chelmsford Local Plan 2013-2036, which was adopted in May 2020.
- A.3 The document set out CCC's development control policies including vehicle parking standards at Appendix C of the document.
- A.4 The document determined that minimal parking provision should be provided in locations such as town centres. Parking provision below the maximum standards was only supported where measures were proposed to reduce car traffic resulting from the development, such as through a Travel Plan. Increased parking provision could be justified in rural/isolated areas where the car was deemed the only realistic means of travel.
- A.5 Minimum standards were set for the provision of cycle and powered two-wheeler parking.
- A.6 The maximum vehicle parking standards that informed the non-residential elements of the Beaulieu and Channels developments were:
 - Shops: 1 space per 20 sqm, 1 space per 20 sqm for food retail developments
 - Schools: 1 space per 2 daytime teaching staff
- A.7 Parking standards for residential developments were set out by CCC's 'Interim Residential Parking Guidance' published in 2015.
- A.8 The document determines that the rigid application of maximum parking standards could result in informal/poor on-street parking, raising issues for pedestrian safety and the obstruction of emergency service vehicles.



North Chelmsford Area Action Plan (CCC, 2011) [revoked]

- A.9 This policy document set out policy guidance for development on land north of Chelmsford, including the areas covered by Beaulieu and Channels.
- A.10 This document determined that the overall acceptable amount of car parking would be assessed according to the development's transport assessment, space requirements, walking distances from the proposed railway station, visibility, appearance, and visual impact.
- A.11 The document also outlined applicable parking design principles for the sites, which included an encouragement to provide on-plot parking. If from the front of the property, this should be hidden behind foliage and if from the rear then this could be via a dual-sided mews street.

Interim Residential Parking Guidance (CCC, 2015) [revoked May 2020]

- A.12 This document was revoked in May 2020 but set out vehicle parking standards across new residential developments in Chelmsford. These included minimum standards as follows:
 - 1-bedroom: 1 space
 - 2-bedrooms: 2 spaces
 - 3-bedroom: 2 spaces
 - 4-bedrooms or more: 3 spaces
- A.13 Visitor parking was required to be incorporated into the layout of off-plot residential developments, and generally managed informally.

Residential Parking Standards for Beaulieu and Channels (CCC, 2016) [revoked]

- A.14 CCC prepared a guidance document which recommended design guidance and residential parking standards for Beaulieu and Channels. The main design points to note are as follows:
 - Hard and soft landscaping should be used to control on-street parking.
 - Large parking courts and long stretches of on-street parking are to be avoided.
 - Parking courts are the least preferred option; if they are necessary, they should have direct access to the surrounding dwellings, not be surrounded by high walls and not serve more than 6 dwellings.
 - Streets should not be dominated by parking to the front of houses or large expanses of garage doors.

A.15 The recommended residential car parking standards are replicated in **Table A.1**.

Table A.1: CCC's Residential Parking Standards for Beaulieu and Channels
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Use	Recommended Standards
Flats/Apartments	Minimum 1 dedicated space/bedroom in shared area up to a maximum of 2 spaces per dwelling (if high proportion of 3 or more bedroom units, to be determined on merits).
2 Bed Terrace or Semi- Detached Houses:	 Minimum 2 spaces to be provided either as 2 spaces in tandem to the side of the house, 1 on-plot space and one off-plot, but dedicated in a shared parking area, 2 off-plot dedicated spaces in shared parking area.
3 Bed Terrace, Semi- Detached or Detached Houses	Minimum 2 spaces to be provided on-plot with front access to the property.
4 and 5 bed Terrace, Semi- Detached or Detached Houses	Minimum 3 spaces to be provided on-plot with front access to the property.
Visitor Parking	Allowance to be made in sensible places e.g. by making the road width wide enough for cars.

A.16 The recommended parking space and garage dimensions are as follows:

•	Minimum perpendicular bay size:	5.0m x 2.5m
•	Minimum parallel bay size:	6.0m x 2.5m
•	Minimum garage size for cars:	7.0m x 3.0m
•	Minimum double garages size:	7.0m x 6.0m (equates to two spaces)
•	Minimum car port/lodge size:	5.5m x 2.5m
•	Garage set back from footway:	Not between 0.75m and 6.0m

- A.17 Car club provision is recommended in convenient locations and firstly within the neighbourhood centre. The number of car club vehicles is not specified.
- A.18 Dedicated blue badge and powered two-wheeler parking is not required.

Beaulieu and Channels Parking Provision

- A.19 Across Beaulieu and Channels there is mix of on-plot and on-street parking. On-plot spaces are primarily within garages, carports or driveways to the fronts and sides of dwellings. Allocated parking with parking courts is manged by private management companies.
- A.20 On-street parking within Channels is currently unrestricted; however, on-street parking controls are in place across Beaulieu within three different controlled parking zones (Z15, Z17 and Z18). Restrictions are in force 08:00 to 10:00 and 14:00 to 16:00 Monday to Friday during which only vehicles with parking permits are able to park on-street.
- A.21 Resident permits, visitor permit and visitor tickets are available for purchase subject to various conditions and restrictions. These are managed, enforced and maintained by the parking authority, South Essex Parking Partnership.
- A.22 **Table A.2** illustrates the residential parking provision by zone that has been approved across Beaulieu whilst **Table A.3** presents the same information for Channels (sourced from CCC and correct at October 2021).



A.23 The zone/phase locations are presented at **Figure A.1** and **Figure A.2** overleaf.

A.24 This demonstrates that across the majority of residential zones in Beaulieu provide over 2 spaces per dwelling whilst all zones in Channels provide at least 2 spaces per dwelling.

Residential Zone	No. of Dwellings	Allocated Parking Spaces	Approved Allocated Parking Ratio	Visitor Parking Spaces	Total Parking Spaces
А	184	433	2.35	40	473
В	77	171	2.22	2	173
С	321	747	2.32	35	782
D	49	134	2.73	2	136
E & G	267	439	1.64	25	464
F & I	254	572	2.25	9	581
J	82	0	N/A	58*	58
K & L	300	517	1.72	27	544
M, N & Q	272	486	1.78	33	519
O & P	111	229	2.06	18	247
V	145	321	2.21	15	336
Neighbourhood Centre	19	34	N/A	0	34
Total	2,081	4,083	2.13	206	4,289

Table A.2: Beaulieu Approved Residential Parking Provision

*All spaces in Zone J are unallocated as this is an independent assisted living scheme.

Table A.3: Channels Approved Residential Parking Provision

Residential Phase	No. of Dwellings	Allocated Parking Spaces	Approved Parking Ratio	Visitor Parking Spaces	Total Parking Spaces
1	181	449	2.48	6	455
2	95	190	2.00	14	204
3a & 3b	74	185	2.50	6	191
3c, 3d & 5	240	511	2.12	10	521
4	27	65	2.40	6	71
6	128	269	2.10	7	276
Total	745	1,669	2.16	49	1,718

Figure A.1: Beaulieu Phasing



Figure A.2: Channels Phasing



Fig 26: Phase 6



Beaulieu and Channels Modal Split Information

- A.25 As part of the travel plan monitoring for Beaulieu, count surveys are completed annually to understand the number of trips made by vehicle, on foot, by cycle and by bus. Within the Travel Plan Monitoring Reports prepared to date, it is not explicitly specified what the modal split and it could not be reliably inferred from the data collected.
- A.26 Therefore, at this time there is no observed modal split information available for Beaulieu or Channels.
- A.27 2021 Census data, which is to be released in a phased manner from late spring 2022, would provide an indication of the method of travel to work mode share and should inform subsequent reviews of the parking standards for CGC.

B Benchmarking and Evidence Base Review

Introduction

B.1 This appendix presents the detail of the benchmarking and evidence base review that has been completed and summarised in **Chapter 3**.

Garden Cities and Urban Extension Benchmarking

Ebbsfleet Garden City

B.2 Ebbsfleet Development Corporation (EDC) was set up by the Government to enable the delivery of up to 15,000 homes within a 21st century Garden City in North Kent. EDC operates as planning authority, managing all development, which is predominantly formed of several masterplans and developed in a plot-based manner by a variety of different housebuilders. A few of the individual masterplans are of a similar size to CGC. **Figure B.1** illustrates the coverage of EDC's planning determination powers.

Figure B.1: EDC Planning Determination Coverage



- B.3 EDC has a strong vision for sustainable travel which includes the provision of Fasttrack bus routes alongside a variety of new walking and cycling routes, connecting both to rail stations and town centres. This aims to reduce the vehicular mode share and, as such, the need for vehicle parking.
- B.4 However, prior to adopting their parking standards, concerns were raised by EDC's planning committee about the existing/likely future levels of car ownership, perceived average age of the households that were purchasing the new homes, the impact of setting lower maximum standards and the subsequent impact of inappropriate on-street and footway parking.
- B.5 Members of the planning committee posited that households in the new dwellings were typically younger and therefore did not have established families with younger adults who may also own additional cars in the same household.
- B.6 However, EDC utilised several data sources (including information from the housebuilders) to illustrate to the planning committee that the existing settlements exhibited low levels of car ownership and parking demand, alongside a varied range of ages across those purchasing new homes within the masterplans.
- B.7 The result was a set of informed parking standards and design guidance for residential units, across two defined levels of accessibility as follows:
 - Highly accessible: Within 400m of a Fastrack bus stop or within 800m of a rail station
 - Well-connected: Within 800m of a Fastrack bus stop or within 1,600m of a rail station
- B.8 Fastrack is a bus rapid transit system operating across Kent Thameside, enabling local journeys across both existing and new developments around Dartford, Bluewater (shopping centre), Ebbsfleet and Gravesend. It connects to the main Southeastern rail network at Dartford, Greenhithe, Gravesend and Ebbsfleet International.
- B.9 EDC's vehicle parking standards are expressed as a range rather than a minimum or a maximum.
 Table B.1 illustrates residential parking standards within the highly accessible areas.

Residential Unit Size	Vehicle Parking Standard (spaces per dwelling)
1-2 Bed Apartments	0-0.8
2 Bed House	0-1.05
3 Bed House	0-1.2
4 Bed + House	0-1.3

Table B.1: EDC Vehicle Parking Standards (Residential - Highly Accessible Areas)

B.10 **Table B.2** illustrates residential parking standards within the well-connected areas.

Table B.2: EDC Vehicle Parking Standards (Residential - Well-Connected Areas)

Residential Unit Size	Vehicle Parking Standard (spaces per dwelling)
1-2 Bed Apartments	0.8-1
2 Bed House	1.05-1.5
3 Bed House	1.2-1.8
4 Bed + House	1.3-2.4

B.11 Within the total parking provision, 20% of spaces should be unallocated to provide reasonable levels of visitor parking.



- B.12 Non-residential and educational parking standards were developed via a 'Decide and Provide' approach, rather than a forecast-led 'Predict and Provide' methodology. Decide and provide looks to make a decision on the preferred future modal share and then implement strategies to reach that, rather than forecasting based on past trends. As such, parking standards for the non-residential uses are based upon a target 40% non-car mode share.
- B.13 **Table B.3** illustrates the vehicle parking standards across non-residential and educational uses. For PTWs, the standard is 1 space for every 20 car parking spaces plus 1 additional space.

Non-Residential Use	Vehicle Parking Standard				
Employment					
Office	0-500 sqm: 1 space per 24 sqm 500-2,500 sqm: 1 space per 30 sqm				
Retail/community					
Non-food retail	1 space per 30 sqm				
Food retail	1 space per 2.4 staff 1 space per 7 sqm for customers				
Medical centres/surgeries	1 space per 2.4 staff 2.5 spaces per consulting rooms				
Day care centres	1 space per 2.4 staff 1 space per 4.8 attendees				
Education					
Nursery	1 space per 2.4 staff 1 space per 4.8 children				
Primary school	1 space per 18 pupils				
Secondary school	1 space per 2.4 classes				
Leisure					
Multi-activity sports, leisure centres, gyms	1 space per 26 sqm 1 space per 18 seats where appropriate				

Table B.3: Ebbsfleet Vehicle Parking Standards (Non-Residential)

Cambridge City Council

- B.14 Cambridge City Council has been facilitating growth sites along the southern fringe and northwest of Cambridge city centre. Some of these sites have been constructed and are occupied, with approximately 4,000 new homes located on the city's southern fringe.
- B.15 The parking standards remained unchanged between the 2006 and 2018 Cambridge Local Plans. Table B.4 illustrates the parking standards in the Local Plan. The standards determine a split between sites within and outside of controlled parking zones, which are understood to be in relation to the proximity to land uses exhibiting high levels of parking demand, namely Addenbrooke's Hospital and ancillary medical facilities.

Table B.4: City of Cambridge Residential Parking	g Standards (2006/2018)
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Residential Unit Size	Vehicle Parking Standard (spaces per dwelling)		
	Inside CPZ	Outside CPZ	
Up to 2-bedrooms	1	1	
3 or more bedrooms	1	2	

- B.16 Visitor parking should be provided at a rate of one space for every four dwellings, provided that the number of off-street parking spaces does not exceed 1.5 spaces per dwelling.
- B.17 The residential parking standards demonstrate a comparatively low car parking provision in comparison to the other case studies and reflect Cambridge's very high cycling mode share (reaching 28-33% in the city centre), alongside high-quality public transport provision (such as the guided busway), and distances to the city centre.
- B.18 It is noted that this parking provision is facilitated through the application of housing and street typologies limiting on-street parking. New dwellings generally do not include front gardens (which could be converted to driveways), with limited driveways and garages. This develops an element of self-enforcement where drivers would be unable to park outside homes at the risk of blocking garages and driveways. Limited sections of streets are designated at visitor spaces.
- B.19 **Table B.5** indicates the City of Cambridge parking standards for non-residential uses.

Non-Residential Use	Vehicle Parking Standard				
	Inside CPZ	Outside CPZ			
Employment					
Office 1 space for every 100 sqm plus disabled car parking		1 space for every 40 sqm, including disabled car parking.			
Retail/community					
Food Retail	Disabled car parking only	1 space for every 50 sqm up to 1,400 sqm and 1 per 18 sqm thereafter, including disabled car parking.			
Non-food Retail	Disabled car parking only	1 space for every 50 sqm GFA, including disabled car parking.			
Clinics and surgeries 1 space for every 2 professional members of staff plus 1 space per consulting room		1 space for every professional member of staff plus 2 spaces per consulting room			
Education					
Non-resi schools	1 space per every 3 staff				
Non-resi higher and further education	1 space per every 4 staff	2 spaces for every 3 staff			
Crèches	1 space per every 3 staff				
Leisure					
Sports and recreational facilities, swimming baths	1 space for every 3 staff plus disabled car parking	2 spaces for every 3 staff, plus 1 space for every 4 seats, including disabled car parking			

Table B.5: City of Cambridge Non-Residential Parking Standards (2006/2018)



Cities Benchmarking

London

- B.20 The London Plan was formally adopted in March 2021 and encompasses the approach of the Greater London Authority towards regional planning policy, directly applicable to larger developments whilst guiding individual boroughs in the management of local policy for smaller developments.
- B.21 Chapter 10 'Transport' contains parking standards for private vehicles, Blue Badge holders and PTWs. Different parking standards are applied according to the context of each development, depending on its location within inner or outer London and its 'Public Transport Accessibility Level' (PTAL).
- B.22 London applies maximum car parking standards across all new developments, rather than minimums. There are no specific vehicle parking standards for schools and hotel/leisure parking is to be justified on a case-by-case basis.
- B.23 To draw comparisons with CGC, **Table B.6** illustrates vehicle parking maximums for outer London areas that exhibit the lowest PTALs (0 to 1).
- B.24 Outer London is generally defined as the outer boroughs bordering non-London counties which typically have lower PTALs, direct access to the strategic road network and lower residential densities.
- B.25 There are no separate PTW standards but PTW spaces count towards the maximum vehicle parking standard.

Use	Vehicle Maximum	Blue Badge	
Residential			
Residential (1-2 bedrooms)	Up to 1.5 spaces per dwelling	10 or more units, for 3% of units, at least 1 space per dwelling. Additional	
Residential (3+ bedrooms)	Up to 1.5 spaces per dwelling ⁴	7% of units could be provided with 1 space if demand increases above 3%.	
Employment			
Offices	Up to 1 space per 50 sqm ⁵	5% of total provision	
Retail/community			
Retail	Up to 1 space per 50 sqm	6% of total provision	
Other (e.g. health)	No standards. Case-by-case basis.		
Leisure			
All	No standards. Case-by-case basis. Refer to Sport England Guidance	6% of total provision	

Table B.6: Outer London Vehicle Parking Standards

⁵ Locations identified through a Development Plan Document where more generous standards apply.



⁴ Boroughs should consider standards that allow for higher levels of provision where there is clear evidence that this would support additional family housing.

- B.26 All residential car parking spaces must include provision of infrastructure for EV/Ultra-Low Emission vehicles. At least 20% should have active EV charging points (EVCPs), with passive provision for all remaining spaces.
- B.27 The London Plan strongly supports the provision of car clubs and their ability to support car-lite lifestyles and enable the shared economy. However, it states that car clubs should count towards maximum parking provision due to their negative impacts in relation to continued car dominance (albeit lower than private car ownership), congestion, air quality and inactivity.

London Plan Evidence Base – Residential Car Parking (2017)

- B.28 The London Plan evidence base was developed for the preparation of the London Plan, discussed above. The residential car parking evidence base was produced by TfL in December 2017 and details the evidence, rationale and methodology for the parking standards for new residential developments.
- B.29 The evidence indicates that the argument for lower maximum parking standards is clear, in that those with car parking, especially off-street, are more likely to own a car. This was evidenced through vehicle ownership levels surveyed across developments exhibiting varying levels of parking provision per unit.
- B.30 Of particular interest is that the maximum parking standards proposed as part of the evidence base and London Plan were on the most part higher than average levels of vehicle ownership within most of outer London and less well-connected areas of inner London. For CGC this means that a lower PTAL and lower densities do not always result in high levels of car ownership.
- B.31 In areas of poor to low PTALs within outer London, vehicle ownership ranges between 1.05-1.35 vehicles per unit, compared to a maximum car parking standard of 1.5 spaces per unit. Variations do occur where provision is up to 1 space per unit, which decreases with higher PTALs. Where developments exhibit average parking provision of above 1 space per unit, higher PTALs makes little difference to vehicle ownership which rises with increased parking provision.
- B.32 However, the ability to park and own a car can be a major influence for individuals and families in where they want to live, with the availability of parking attracting existing car owners. Others may see car ownership as a more marginal choice and prioritise other factors like public transport connectivity or proximity of amenities.
- B.33 The London Plan parking standards recognise several constraints and opportunities in relation to areas exhibiting both a low-density urban form and low public transport connectivity:
 - Availability of local amenities which reduce the need for car ravel
 - Longer trip distances, reducing opportunities for walking and cycling

Birmingham

- B.34 Birmingham City Council's (BCC's) 'Birmingham Parking SPD' was adopted in November 2021 and encompasses guidance on parking standards and design across the city.
- B.35 Parking standards are set across three different contexts, defined as:
 - Zone A: Birmingham city centre (400m of New Street, Moor Street, Snow Hill stations)
 - Zone B: 'Outer' parts of the city centre, extending to the Ring Road, alongside areas 500m radius of suburban rail and metro stations, larger local centres with good public transport provision
 - Zone C: remainder of the city



- B.36 Given the context of the three areas, standards for Zone C are deemed most comparable to CGC.
- B.37 Every new residential building with an associated car parking space must have at least one EVCP. This applies to buildings undergoing material change of use to create a new dwelling. Every residential building undergoing major renovation with more than 10 parking spaces must also have one charge point and cable routes for an EVCP for one in five spaces.
- B.38 New buildings other than dwellings, or major renovations for buildings, which have a minimum of 11 parking spaces, must provide a minimum of one EVCP. In addition, a minimum of one in every 5 spaces should have either an EVCP or enabling infrastructure for future EVCP installation. A general principle applies that a minimum of one charge point, or 5% of the charge points, whichever is greater, should be accessible to drivers with disabilities.
- B.39 All residential developments over a threshold size will be required to provide a car club parking bay available to the public, or commuted sums to enable provision on the highway. Outside the city centre, it is recognised that there may be less demand for car clubs, and thus requirements are lower.
- B.40 Car free or low car developments should still aim to provide PTW parking to accommodate at least 2% of the total predicted staff and visitors/customers for the site. It is unlikely to be necessary for overall levels to exceed 10 spaces per development.
- B.41 As shown in **Table B.7**, the allocated maximum and unallocated minimum parking standards for varying sizes of residential unit.

Posidontial	Vehicle		PTW	Blue Badge
Unit Size	Allocated Maximum	Unallocated Minimum		
1-Bedroom	1	1 unallocated	Flats/apartments: 1 space per 20 units.	1 space per wheelchair accessible unit. Wherever parking is non-curtilage: 1 space or 5% of total units, whichever is greater.
2-Bedrooms	1	space per 10 dwellings (on developments of 10+ dwellings)		
3+ Bedrooms	2			

Table B.7: Outer Birmingham Zone C Residential Standards (2021)

- B.42 In Zone C, the car parking standards define 'typical levels of parking'. The 'typical car parking' levels are not a minimum or maximum requirement. This guidance allows for flexibility to reduce or increase parking provision depending on factors such as location, car ownership, public transport accessibility, walking and cycling provision catchment, and typical end user.
- B.43 In Zones B and C, residential developments of 10 or more dwellings will be expected to provide 1 space per 10 dwellings as unallocated parking. This can be in addition to the allocated parking standards set out in the standards but does not have to be.

B.44 **Table B.8** indicates non-residential parking standards for non-residential land uses.

Non-Residential Use	Vehicle Maximum	PTW Minimum	Blue Badge				
Employment							
Offices	1 space per 40 sqm	Minimum 1 space or 2% of the total predicted staff and visitors/customers capacity, whichever is greater.	6% of total car parking capacity or 1 space, whichever is greater. Over 200 bays: 4% of total car parking capacity or 12 spaces, whichever is greater.				
Retail and communit	ÿ						
Food Retail	1 space per 14 sqm up to 1,000 sqm 1 space per 18 sqm over 1,000 sqm	Min. 1 space up to 1,000 sqm. Over 1,000 sqm, minimum 1 space or 2% of the total predicted staff and visitors/customers capacity, whichever is greater.	6% of total car parking capacity or 1 space, whichever is greater. Over 200 bays: 4% of total car				
Non-Food Retail	1 space per 30 sqm	Minimum 1 space or 2% of the total	parking capacity or 12 spaces, whichever is greater.				
Restaurants and Cafes	1 space per 10 sqm of public floor space	predicted staff and visitors/customers capacity, whichever is greater.					
Education							
Crèches, Day Nurseries, Day Centres	Staff: 1 per 2 staff Visitors: 20% of staff parking	Minimum 1 space or 2% of the total	6% of total car parking capacity or 1 space, whichever is greater. Over 200 bays: 4% of total car				
Primary, Infant and Junior Schools	Staff: 2 spaces per 3 staff Visitors: 10% of staff parking	visitor capacity, whichever is greater.	parking capacity or 12 spaces, whichever is greater.				
Leisure							
Swimming Pools, Leisure Centres, Gyms and Sports Centres	1 space per 25 sqm	Minimum 1 space or 2% of the total predicted staff and visitors/customers capacity, whichever is greater.	1 space per disabled employee, where known. Plus 3 spaces or 6% of total capacity, whichever is greater. Over 200 bays: 12 bays plus 4% of total capacity.				

Table B.8: Outer Birmingham Zone C Non-Residential Standards (2021)

Birmingham Parking Standards SPD Consultation Draft Evidence Base (2019)

B.45 BCC published its evidence base for the adopted standards discussed above. Birmingham's metropolitan district exhibits similar car ownership levels to several smaller cities, including Leicester, Brighton and Hove and Sheffield. It has lower levels than Coventry and Leeds, but higher than London and Manchester. However, car ownership per household increased between the 2001 and 2011 Census from 0.86 to 0.93.



B.46 Several metrics were used to inform the standards, including vehicle ownership, public transport accessibility, proximity to local and major centres, evidence from other cities and information from BCC's development management team.

Bristol

- B.47 Bristol's 'Site Allocations and Development Management Policies' document was adopted in July 2014 and includes information on parking standards and design applicable across the city, except central Bristol which is covered by Bristol Central Area Plan.
- B.48 Bristol applies maximum car parking standards across all new developments and all uses.
- B.49 PTW parking standards for all developments should equal 5% of the car parking standard.
- B.50 For residential and office developments, one EV charging point should be provided for every five spaces.

Use	Vehicle Maximum	Blue Badge
Residential		
Residential (1 bedroom)	1 space per dwelling	From a threshold of 10 dwellings (where parking is communal) – 5% of the parking standard to be provided in addition – minimum of one space
Residential (2 bedrooms)	1.25 spaces per dwelling	
Residential (3+ bedrooms)	1.5 spaces per dwelling	
Employment		
Offices	1 space per 50 sqm ⁶	<500 sqm, 5% of total parking – minimum of one space
Retail and community		
Retail (Non-food)	Within a primary shopping area, >250 sqm, 1 space per 100 sqm	Staff: <500 sqm, 5% of total parking – minimum of one space Customer: 5% of capacity – minimum of one space
Retail (Food)	1 space per 20 sqm of drinking/dining space	
Medical/health Centre	Staff: 1 space per duty doctor/nurse/other medical and 1 space per 2 admin/clerical staff Visitor: three spaces per consulting room	Staff: <500 sqm, 3% of total parking – minimum of one space Visitor: 5% of capacity – minimum of one space
Education		
Schools	Staff: 1 space per 2 FTE staff Visitor: 10% of the staff parking standard, in addition	Staff: <500 sqm, 3% of total parking – minimum of one space Visitor: 5% of capacity – minimum of one space
Leisure		
Sports Hall/Swimming Pool/Gymnasium	1 space per 22 sqm	5% of total spaces (minimum one space)

Table B.9: City of Bristol Vehicle Parking Standards

⁶ Locations identified through a DPD where more generous standards apply



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