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Cycling & the City

REPORT

CPA

City Property Association

DEC2024

Acknowledgments

This report has been developed with insight drawn from **City Property Association** members, including those who have submitted case studies or shared their expertise more broadly.

We would like to thank the following for their contributions to the development of this paper:

Office Buildings Surveyed

70 St Mary Axe

60 London Wall

100 Liverpool Street

22 Bishopsgate

Citypoint

100 Bishopsgate

80 Fenchurch Street

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About CPA

CPA
City Property Association

The City Property Association (CPA) is a not-for-profit membership and advocacy group representing the leading owners, investors, professional advisers and developers of real estate across the City of London.

Introduction

This report has been commissioned to provide detailed analysis of commuting patterns in the City to help inform future cycle parking requirements in office development. Alongside case studies and expert insight and analysis from CPA members, the data clearly makes the case for planning policy to revisit future provision to reflect use.

Given the carbon and financial costs associated with the excavation of large basement space – the most carbon intensive part of a tall tower – it is imperative that planning policy reflects the realities of cycle use, whilst accommodating a wider array of commuting patterns to support sustainable travel.

Currently large amounts of dedicated space is considerably underutilised. Other uses should be explored to make better use of this resource. The CPA believes tackling this issue, which is ultimately set by London Plan guidelines, will help unlock future development and safeguard the City's economic growth.

Summary

1. Foreword

The popularity of cycling in London has never been greater and there are now around 1.26m daily bike trips made in the capital. There is no doubt that improvements to roads and infrastructure over the past two decades have helped to boost cycling and played a significant part in reaching these numbers.

Developers and transport policy makers see cycling as a fantastic way of getting around the capital. It promotes a range of physical health and wellbeing benefits for individuals and, as an emission-free transport mode, it helps improve air quality and mitigates our carbon footprint, as well as reducing congestion.

This report looks at the cycle parking requirements for offices and developments in the City of London, which are set out in the London Plan. As successive London Plans have been revised over time, these requirements have become more rigorous. We wanted to see if these standards align with current and future cycle parking demand, and whether they meet the City Corporation's objectives in its Transport Strategy, in addition to the goal of economic growth and the imperative to reduce carbon emissions.

Our work analysed how commuting by bicycle has grown over time and looked at forecasts for potential further growth. We also reviewed how current office cycle spaces are really used, looked at the methods for calculating parking requirements, and investigated the environmental impact that the need to construct these spaces has.

We surveyed over 600,000 sqm of recent prime City office space, measuring occupancy and cycle storage demand at peak times. In addition, we looked at the working population of the City of London and commuting distances to see if future cycling mode share projections are achievable.

Our study has shown that vast numbers of cycle spaces are built but not used. In addition, we found the impact of constructing significant over-provision of cycle parking spaces comes with an alarmingly high carbon impact – which is hard to rationalise while developers and policymakers are striving to reduce embodied carbon to meet the responsible targets outlined in the UK's Net Zero Strategy.

It is without doubt that we must continue developing strategies and policies to encourage even greater uptake of cycling. It is imperative though that we robustly review policy standards from time-to-time to ensure an optimal balance of strategic growth, proven demand and other related targets such as decarbonisation. We passionately believe cycling is one of the best ways to move around in the capital, and we must ensure that we do as much as possible to see London remain as one of the most cyclable cities in the world.

Finally, I want to thank the extensive team of contributors for their hard work in bringing together these findings and producing this report.

Ross Sayers
CPA Chair
Head of Development Management at Landsec

2. Executive Summary

Cycle parking provision and active travel solutions are now a fundamental part of the transport strategy for office schemes, with high-quality facilities vital for attracting occupiers and employees.

Planning policies recognise cycling's importance as a healthy and zero-emissions form of travel, and the City of London Corporation's Transport Strategy aims to get more people cycling. To encourage take-up, the parking standards in successive London Plans have risen over time and new office floorspace must now provide one space per 75 sqm gross external area (GEA) with an aim of reaching a 19% cycle mode share.

The CPA has collaborated with transport specialists and developers to carry out research into cycle mode share, consider future growth and recommend adjustments to the policies governing office cycle parking standards in the City of London. This research has analysed the use of cycle parking in new and recently occupied office developments to assess whether those standards are fit for purpose. Alongside this, the CPA has analysed the City of London's working population and office commuting distances to see if a 19% cycle mode share could ever be achieved.

Evidence collected from 600,000 sqm of recently occupied City of London office buildings shows cycle parking is significantly underutilised, with around 14% being used and an average cycle mode share of just 6%. The delivery of cycle parking to London Plan standards is leading to extensive areas of unused basement space in the short and longer-term, which is constraining the City's ability to decarbonise.

To achieve a 19% cycle mode share in the City of London, 116,850 people would need to cycle to work. 2021 Census indicates that 85% of cycle commutes in London are within 10km, which means 99,420 trips would need to be made by the 221,400 city workers who live within 10km of the City of London to meet the London Plan target. This equates to an implausible 45% mode share for those workers who live within 10km of the City.

The City is one of the most cyclable places in London and the strategic cycle network provides opportunity for a large catchment of people, particularly those living in inner London boroughs, to cycle to workplaces in the City. People commuting from further afield are less likely to cycle directly and often choose to combine public transport and micro-mobility travel modes for different parts of their journey. This may for example include dockless e-bikes, which have also grown in popularity in recent years, increasing cycling but not the use of on-site cycle parking.

22 Bishopsgate, photo taken Tuesday 27 February 2024

In the past, lack of office cycle parking restricted cycle mode share and successive London Plans sought to intensify cycle parking requirements. New offices have opened over time with significantly increased volumes of cycle parking to encourage cycling to work. TfL research[1] states that a lack of cycle parking at the destination is no longer a primary barrier to cycling.

This report has explored cycling in Amsterdam as a city with high take-up but where it has taken decades to increase the cycle mode share. This critically demonstrates that the requirement in the City of London to install all policy-compliant cycle parking spaces at the outset, when usage is initially low, eliminates any opportunity for unused areas to be accommodate different health-focussed amenities that could benefit the wellbeing of employees.

We estimate that a single cycle space in a typical new City of London high-rise office basement accommodates around 1.7 sqm of space and produces approximately 1.29 tonnes of carbon (tCO2e) in construction. Using data collected from the buildings surveyed as part of this report, the CPA has been able to assess the quantity and impact of unused cycle parking spaces in the draft City Plan 2040. By current policy standards, the 1.2m sqm (12.8m sq ft) of net office space targeted will generate a need for more than 25,000 long stay cycle spaces. Even after allowing for growth from today's cycling mode share, the anticipated overprovision would occupy an area of approximately 386,000 sq ft and could generate up to 21,500tCO2e. This is broadly the same amount of carbon that seven all-electric City office towers would produce in 50 years of operation.

This report explores the current uptake of cycle parking in new City offices, projects future increases, and identifies opportunities to make better use of space that encourages more sustainable and active lifestyles. Coupled with a detailed assessment of the carbon impact of overprovision, this study is compelling in its conclusion that current London Plan cycle parking requirements are too high for the City of London.

[1] Transport for London, Cycling potential in London's diverse communities, October 2021 https://content.tfl.gov.uk/cycling-potential-in-londons-diverse-communities-2021.pdf

3. Cycle Parking Policy

There is a common goal to increase active travel and cycling, supported through transport planning policies in the National Planning Policy Framework, the London Plan, the Mayor's Transport Strategy and local plans.

The London Plan (2021) sets minimum cycle parking standards for new development across the capital, including in the City of London. As successive London Plans have been published, these standards have risen. For offices, the following changes have been made:

2011

In the 2011 London Plan the standard was one space per 250 sqm of 'gross floorspace'.

2013

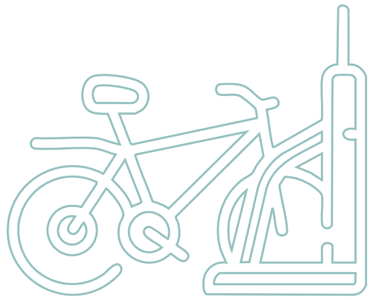
The 2013 London Plan revised the standard to one space per 150 sqm of 'gross floorspace'.

2016

The 2016 London Plan, once again, revised the standard to one per 90 sqm GEA (rather than gross floorspace) for inner London. As part of the evidence base, TfL prepared a Cycle Parking Standards Report (March 2014) that identified the one space per 90 sqm standard was designed to achieve a 16% mode share, and that there would be "practical/cost considerations" to implementing a higher standard of floorspace.

2021

The 2021 London Plan further revised the standard to the current one per 75 sqm GEA for specific areas (inner London) to have higher standards, including the City of London. For other areas the standard remains as one per 150sqm GEA.



CYCLE PARKING POLICY

Bank Junction, Spring 2024

In support of the current London Plan standard, TfL published its evidence base on cycle parking in 2017[2]. This details how the standard of one space per 75 sqm GEA equates to a cycling mode share to offices of up to 19%, assuming an employee density of one employee per 12 sqm GEA.

In 2019, the draft London Plan was taken through an Examination in Public, which raised concerns about the wider impact that introducing higher standards of cycle parking could have.

The City of London Corporation submitted a consultation response stating:

"...there should be flexibility for boroughs and the City Corporation in the application of these parking standards, in light of locally specific or building specific constraints and where a robust and evidenced case for variation in standards has been made, such as the application of the B1 standard of one space per 75 sqm within office towers in the City's Eastern Cluster."

[2] Transport for London, 'Cycle Parking – Part of the London Plan Evidence Base', December 2017 https://www.london.gov.uk/sites/default/files/london_plan_evidence_base_-_cycle_parking.pdf

CYCLE PARKING POLICY

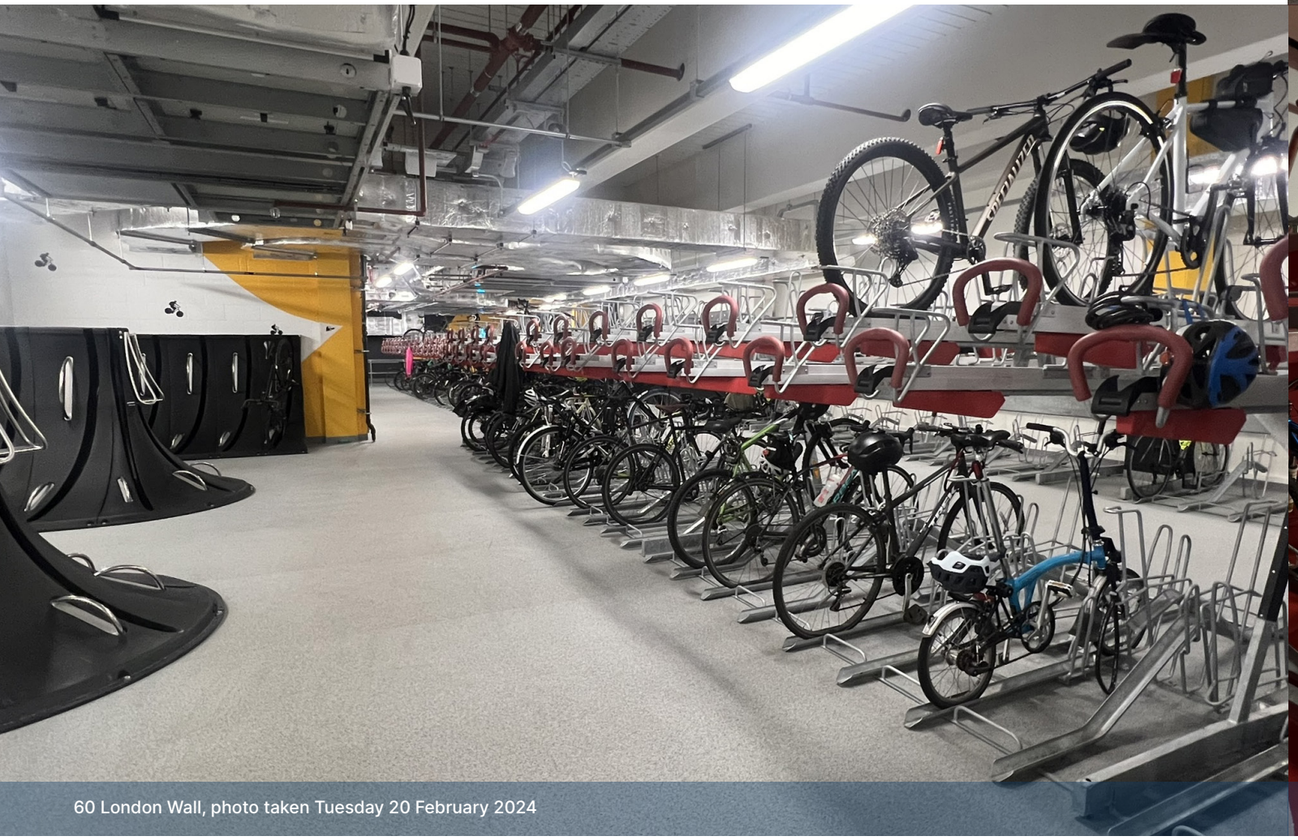
"Over the years, we have witnessed cycle parking requirements set out by local policy become stricter and stricter. The main way this has been done is by increasing the minimum requirement of cycle parking spaces within new buildings. This is because, theoretically, the more cycle parking spaces, the more people are able to actively travel. Even though an element of this is true, from our experience and real-life case studies, focusing on quantity alone will not result in the expected active travel uptake.

It is proven that designing with a focus on variety and quality will have a far more significant impact than designing with quantity as the main priority. There are far too many examples of buildings that are policy-compliant, with hundreds and even thousands of cycle parking spaces lying dormant and unused.

This is the result of continuously increasing the quantity requirements with little to no regard for variety, quality, and, ultimately, the end users. Because of this, we have recently decided to update our standards to reflect exactly that.

ActiveScore clients will be rewarded higher for variation & quality over meeting the local policy requirements (exceptions will be in place depending on each regional policy)."

James Nash
ActiveScore
Co-Founder



60 London Wall, photo taken Tuesday 20 February 2024

22 Bishopsgate, photos taken Tuesday 24 September 2024

4. The Importance of Real Building Occupancy

The current London Plan cycle parking standards for office developments are based on gross external area (GEA).

GEA includes areas that cannot be occupied by office workers, such as façade zones, toilets, corridors and mechanical and electrical plant rooms. This means that if a plant room is extended, the development must also provide additional cycle parking spaces, showers and lockers.

As explained, current policy assumes an employee density of one person per 12 sqm GEA, which equates to one person per 8 sqm Net Internal Area (NIA) on a typical City building. This is more than double the actual densities recorded during peak days in the recent City of London building surveys detailed in chapter 5 of this report.

The Building Council for Offices (BCO) guidance recommends that office buildings should be designed for occupation density of one person per 10 sqm NIA with 80% peak utilisation; this equates to one person per 12.5 sqm. Occupiers are increasingly seeking higher-quality offices with additional spaces such as break-out zones, meeting and conference rooms, and wellbeing areas, which do not translate to more desks and people.

This focus on creating workspaces to motivate and maintain staff is growing and means that typical day-to-day occupational density is often closer to one person per 15 sqm to 20 sqm NIA - less than half of the assumed density that the London Plan cycle parking standards are based on.

The City Plan 2040 Offices Topic Paper (March 2024) notes that:

> "Employers are placing greater value on high-quality sustainability credentials, quiet spaces for phone calls or working, meeting spaces and places for collaboration, good access to transport and food and beverage amenities."

This pattern is not expected to reverse and the City of London Corporation's Future of Office Use paper (2023) notes that most sectors will gradually shift to lower occupational densities.

THE IMPORTANCE OF REAL BUILDING OCCUPANCY

In 2022, the BCO published a report[3] on the impacts of over-densification (eight sqm per person) in UK offices on performance and wellbeing, occupant expectations post-pandemic, work patterns and setting, and the need to create offices that meet net zero carbon targets. The report's literature review of 50 studies highlighted the following:

High density, with increased proximity of co-workers and relatively few physical screens between staff, reduces levels of concentration, motivation, confidential discussions and environmental satisfaction.

The majority of office studies showed some negative effects of density on environmental satisfaction, cognitive workload, privacy, communication, concentration, comfort, noise, motivation and commitment, job satisfaction and autonomy.

In one study, the highest employee dissatisfaction with noise was recorded in the building that had the highest density.

The strongest negative relations between density and reactions, such as organisational commitment and job satisfaction, occur when job complexity and tenure (time in the organisation) were both high.

As a leading global city, London attracts the largest companies and highest skilled workers. City of London office buildings are, therefore, more likely to house headquarters, which emphasise meeting space and employee wellbeing amenities, rather than high-desk density areas.

[3] British Council for Offices, BCO Guide to Specification Key Design Criteria: Update 2022: A Position Paper, 2022
[4] Cycle occupancy surveys undertaken across multiple buildings in February, June/July and September 2024

THE IMPORTANCE OF REAL BUILDING OCCUPANCY

Occupational Density Data Average

BUILDING	TOTAL OFFICE GEA (SQM)	OCCUPIED OFFICE GEA (SQM)	OCCUPIED OFFICE NIA (SQM)	AVERGE MID-WEEK EMPLOYEE OCCUPANCY	EMPLOYEE DENSITY (1 EMPLOYEE PER SQM GEA)	EMPLOYEE DENSITY (1 EMPLOYEE PER SQM NIA)
AVERAGE TOTAL	**618,743**	**575,581**	**383,247**	**18,333**	**31**	**21**

An assessment of occupational densities in recently occupied City of London office buildings took place across multiple days in 2024[4] as part of a cycle parking occupancy survey. Occupational data for the buildings was supplied by building management, including speedgate data for mid-week days only (Tuesday, Wednesday, Thursday).

1. **70 St Mary Axe**
2. **60 London Wall**
3. **100 Liverpool Street**
4. **22 Bishopsgate**
5. **Citypoint**
6. **100 Bishopsgate**
7. **80 Fenchurch Street**
8. **1 Finsbury Avenue**

> **The average occupancy of more than 575,000sqm of occupied City of London office space was one employee per 31 sqm GEA and one employee per 21 sqm NIA.**

These actual employee occupational densities are considerably lower than the assumptions made in the London Plan, and also lower than BCO guidance. Over time this has led to significant over-provision of cycle parking in buildings, when considering occupational density alone. The situation is compounded by a long-stay cycle parking standard based on GEA rather than NIA.

THE GEA-NIA PROBLEM

The CPA previously raised the issue of using gross floor area as the basis for cycle parking requirements when responding to the current London Plan consultation in 2017. Gross area does not correspond directly to occupancy. Using GEA to calculate the cycle parking needed in an office requires inclusion of spaces that are typically unoccupied, such as servicing yards, façade zones, plant rooms, structural elements, waste stores and washrooms.

> **With GEA, even the area required for cycle parking itself generates a requirement for further cycle parking, because cycle parking space is captured within a GEA measure of a building.**

Net internal area, however, takes into account areas that are usually occupied by office workers and is a more robust indicator of the number of employees using a building. Further, there is often significant disparity between the GEA to NIA relationship across different buildings, meaning the application of the cycle parking rate is not uniformly applied relative to the number of people using different buildings.

Using GEA especially penalises tall buildings, as these generally have lower GEA to NIA ratios owing to their proportionally bigger cores and mechanical plant requirements. The GEA to NIA ratios of buildings included in the study were on average 67%.

Applying the London Plan's office density assumption of one employee per 12 sqm GEA to a typical building within the survey set, essentially means cycle parking designed for one employee per eight sqm NIA. In real terms, the buildings surveyed are on average being occupied on peak days at one employee per 21 sqm NIA, which would mean more than two and a half times over-provision of cycle parking spaces if designed to current day standards.

The current London Plan cycle parking standard is based on an extreme density assumption for City of London offices that has become progressively misaligned with occupation trends. Basing the standard on GEA, rather than NIA, exacerbates this problem particularly for tall buildings prevalent in the Square Mile, which typically face more complex challenges in reducing embodied carbon.

It is recommended that cycle parking standards should be calculated using an effective density of **one employee per 15 sqm NIA.** This represents a considered balance between the current British Council of Offices standard of one employee per 12.5 sqm and the results of our survey which demonstrated an average effective density of one employee per 21 sqm NIA.

CYCLE SURVEY & ACTUAL MODE SHARE

5. Cycle Survey & Actual Mode Share

Eight major office buildings comprising around 575,000 sqm of occupied office floorspace were surveyed to understand provision and demand for cycle parking, together with building occupational density.

This level of floorspace provides a reasonable sample size to draw meaningful findings. The surveys took place on dry days in February and March 2024 (winter surveys) and were repeated in June 2024 (summer surveys) and September (autumn surveys). All buildings surveyed were granted planning permission under previous London Plans.

End-of-trip facilities

All the surveyed buildings provide high-quality facilities including a mix of cycle parking stands, showers, lockers, towel services, maintenance facilities and good wayfinding.

Each building management team noted some use of the changing and shower facilities for those running and exercising outside the building. None of the managers raised any issues with insufficient capacity of cycle parking, lockers and showers, but some had temporarily cordoned unused cycle stores and showers, to save on electricity, cleaning and management.

The most convenient spaces located nearest to the entrances were the most popular. Sheffield stands were no more popular than the bottom rack of the two-tier stands – convenience was a bigger factor in a cyclist's choice of parking. Unresolved topics raised included provisions and insurance for electric bike charging equipment, and whether e-scooters should be allowed to park in the same areas as standard bicycles.

Cycle parking usage

The cycle survey site visits consisted of a tour of cycle parking and end-of-trip facilities, counting of cycle parking utilisation and discussions with facility managers, who have insight on employee behaviour. As the buildings were granted permission prior to the implementation of the 2021 London Plan, they provide less cycle parking than buildings designed today are required to do. Analysis therefore considers utilisation against both the 2016 and 2021 London Plans.

The table adjacent provides a summary of average survey results for the eight surveyed buildings, using the highest cycle parking occupancy across the three average survey periods to show the highest use.

Cycle Parking Occupancy Survey Results

BUILDING	TYPICAL MID-WEEK EMPLOYEE DENSITY	NUMBER OF CYCLE SPACES	OCCUPIED CYCLE SPACES	OCCUPIED OFFICE GEA (SQM) PER BIKE	CYCLE SPACES OCCUPIED (2016 LONDON PLAN)	CYCLE SPACES OCCUPIED (ADJUSTED TO 2021 LONDON PLAN)	CYCLE MODESHARE
AVERAGE TOTAL	21sqm NIA 30sqm GEA	5,318	1,132	508	21%	14%	6%

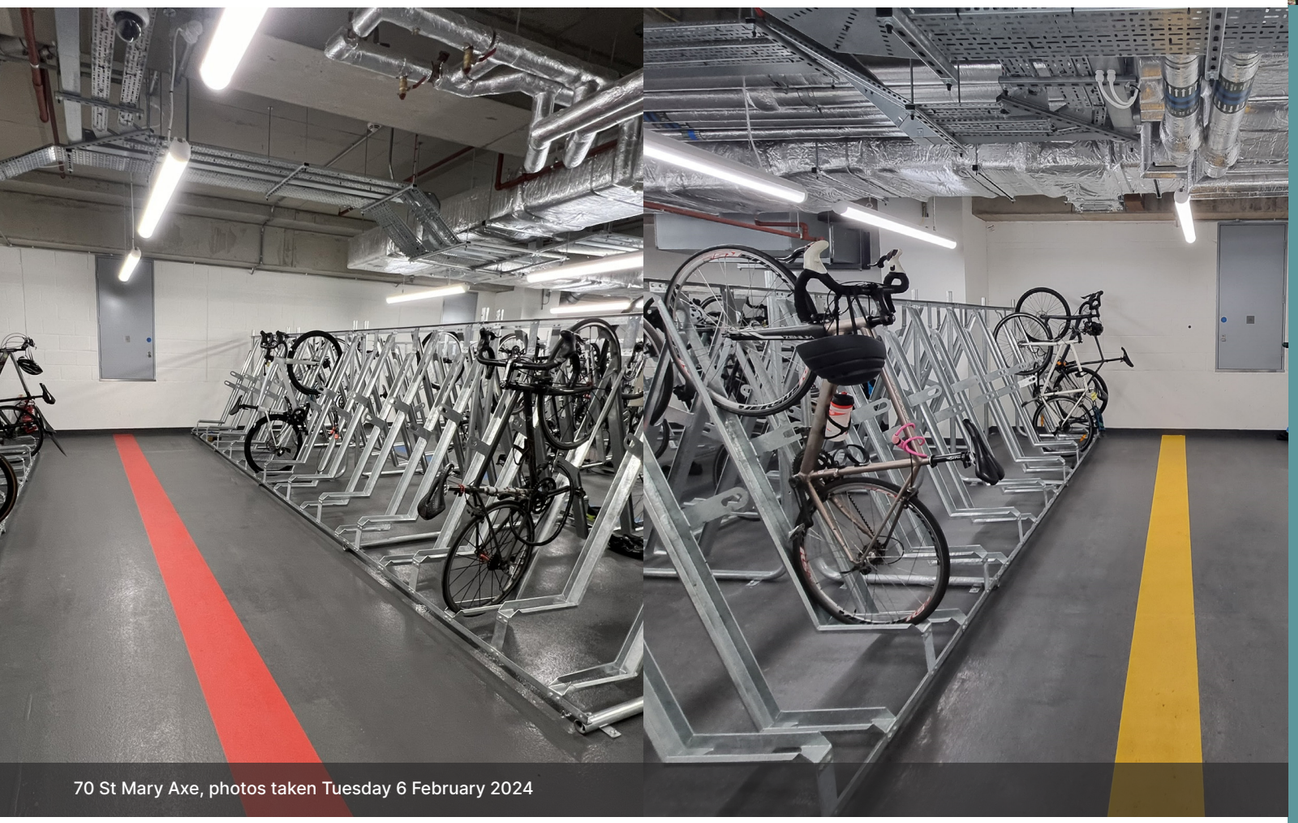
SUMMER 2024 (JUNE)

The calculations in the table above have been adjusted to discount any unoccupied floorspace within the buildings. Occupancy figures for each building were retrieved from the building management systems using access card data (excluding visitors). The survey data includes all bicycles on show, some of which could have been parked for an extended period rather than used daily.

This matter of bicycles parked for extended periods of time was subsequently surveyed in more detail at 22 Bishopsgate during the week commencing 23 September 2024 where 32 bicycles were parked all week. This suggests that the mode share of bicycles being used on a daily basis is actually less than 6%.

! 86% of cycle spaces would be vacant relative to the current London Plan standard

Cycle parking is occupied at one bicycle per 508 sqm GEA (policy requirement one space per 75 sqm GEA) !



70 St Mary Axe, photos taken Tuesday 6 February 2024

Cycle parking occupancy was surveyed on several occasions, with all instances showing high levels of vacancy. Only 21% of spaces were occupied during peak use and if the offices surveyed had provided cycle parking to the current London Plan standard (one per 75 sqm GEA), only 14% of the spaces would have been occupied. On average, using the peak occupancy observed in each building, there was one bicycle per 508 sqm GEA.

In terms of the impact of seasonality on cycle parking, there was a small increase in the level of cycling in summer compared with winter and autumn counts. Based on the full counts, 88% of bikes were standard, 6% were foldable, 5% were electric, and the remaining <1% were larger cycles.

Through use of the survey data, the potential cycle mode share for the surveyed buildings can be estimated. Mode share refers to the percentage of total trips or transportation activity that is carried out by different types of transportation. As referenced in chapter 3, TfL's aim is for 19% of inner London office employees to cycle to work by 2041 (i.e., a 19% cycle mode share).

Based on actual cycle counts and occupancy data for each building, the potential cycle mode share for the peak periods counts is approximately 6%. As the survey data includes all bicycles on show, some of which could have been parked for an extended period rather than used daily, the actual mode share will be lower.

For buildings where the data is available, only 50%-60% of bikes counted in the surveys are used on a daily basis, while 40%-50% are left overnight. On a weekly basis, 10% of bikes stored in the building cycle stores are not used at all. Therefore, the 6% mode share based on cycle parking occupancy is likely to be an over-estimate, though it is noted there has been a growing trend for people to use dockless cycle hire bikes that are not parked in bike stores and would not be included in the mode share figures identified above.

WHY IS THE MODE SHARE SO MUCH LOWER AND WHAT IS THE FUTURE DEMAND?

6. Why is the mode share so much lower and what is the future demand?

This part of the study assesses the feasibility of achieving a 19% cycling mode share for City of London workers, which is used as a basis for setting the London Plan office long-stay cycle parking standard. The study analyses where City of London workers generally reside, their commuter patterns, and the extent to which cycling is a plausible commuting option. An extensive data set retrieved from the Office for National Statistics is used to inform the study, using 2011 and 2021 census data.

City of London Catchment

A cycling catchment map for the City of London is shown adjacent. It displays the commuting distance in 5km increments of workers in the City up to and beyond 20km. The map shows both the number of workers residing in each catchment bracket and the percentage they represent of the total number of City of London workers, using census data averages from 2011 and 2021.

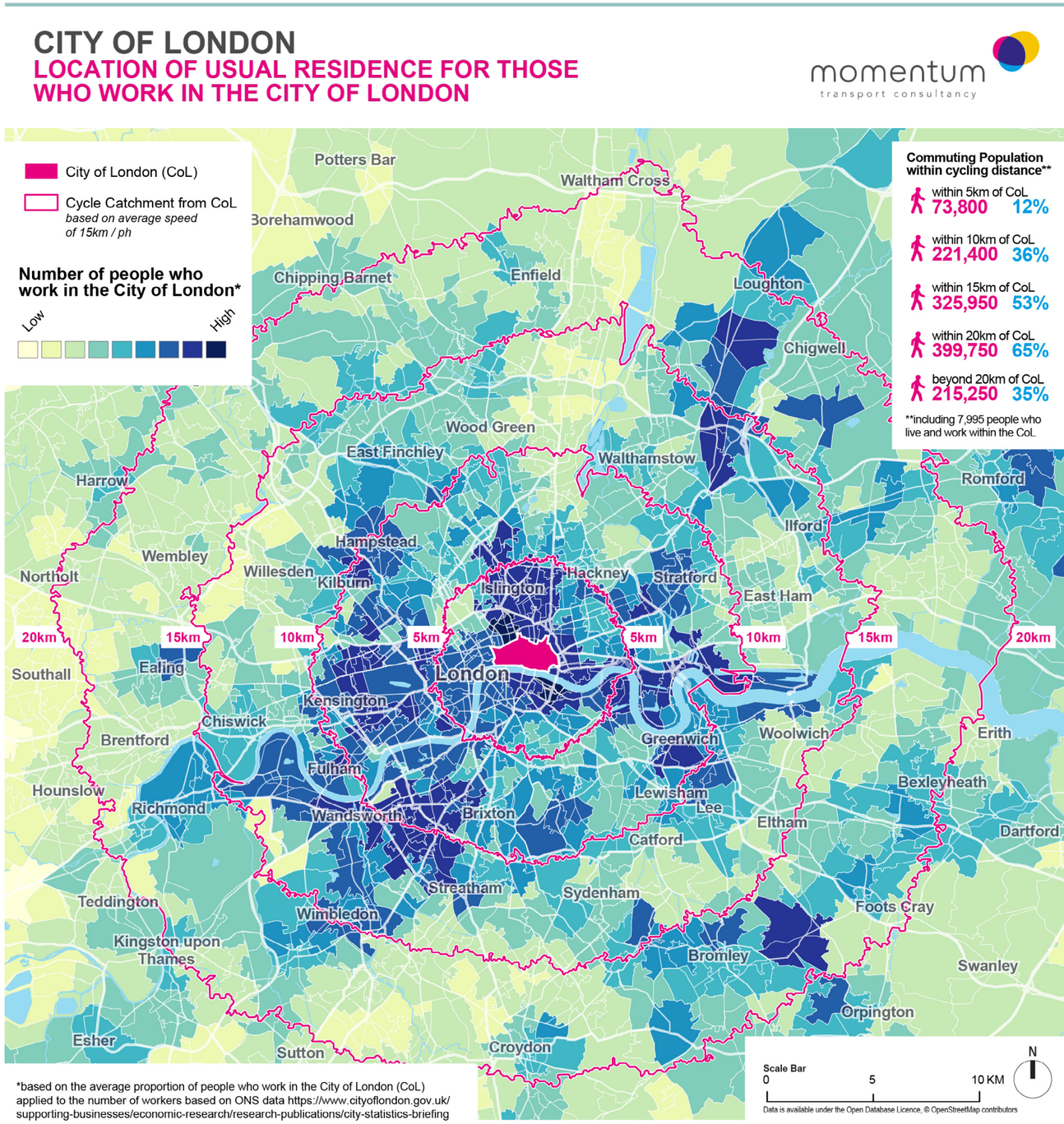
According to TfL, people are more likely to cycle for longer distances to commute than for other purposes[5].

> **When examining potentially cyclable trips, TfL sets a limit of 10km for commuting trips for those aged 64 and under, compared with 8km for other trip purposes.**

This is based on London Travel Demand Survey data from 2012-2015. Census data on cycle-to-work trips supports this conclusion, with an average of 85% of cycled commutes conducted within London being under 10km (using 2011 and 2021 Census data).

Examining census data requires some further consideration owing to the phrasing of the questions, which asks for the “usual” mode people take to travel to work. Those cycling longer journeys (more than 10km) are likely to do so less frequently than individuals with a shorter cycle commute. As a result, if a person only commutes by bike one to two days a week, cycling would not be classified as their “usual” travel mode and would not be represented in the findings.

Despite this, based on the adjacent plan, a conclusion can be drawn that most cycle commuting trips would be made by City of London workers who live within a recognised cyclable commuting catchment of 10km. In 2011, 31% of workers lived within 10km, whilst in 2021 this rose to 37%. Using an average of the two data sets indicates that 36% of workers live within 10km. Applying this figure to the overall working population of 615,000[6], the number of City workers residing within 10km is around 221,400.



Cycle Catchment Map for City of London

[5] Analysis of Cycling Potential 2016, TfL Policy Analysis Report March 2017

[6] https://www.cityoflondon.gov.uk/supporting-businesses/economic-research/research-publications/city-statistics-briefing

London Plan Basis

TfL targets a 19% mode share in its 2021 London cycle standards for inner London. This means that based on the working population of the City of London (615,000 at time of writing), 116,850 would cycle to work. Given 85% of cycling commuting trips in London are within 10km, 99,420 trips would need to be made by the 221,400 people who live within 10km of the City of London to meet the London Plan target. This equates to a 45% mode share for those workers who live within 10km of the City.

TfL objective
19% → City workers would cycle to work **116,850**

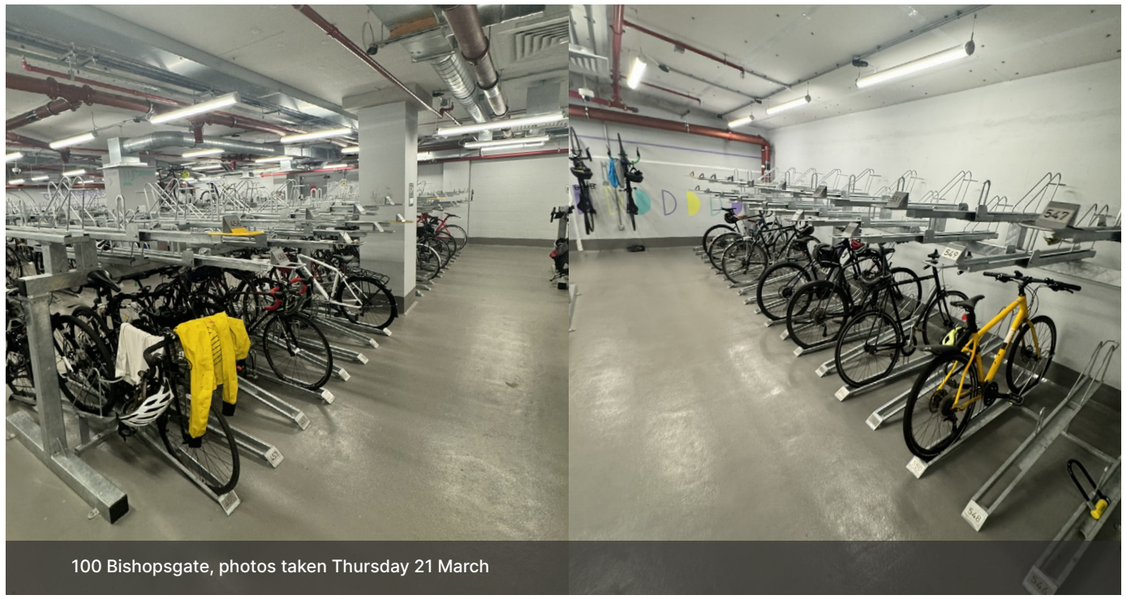
Trips <10km radius
85% → City workers **45%**

> **This means that to meet the London Plan's 19% cycle mode share in the City of London, 45% of City workers residing within 10km of the City would need to commute by private bicycle.**

This target is implausible, and it is useful to explore cycling behaviour in one of the world's most cyclable cities to help explain why.

CYCLE MODE SHARE	CURRENT CYCLE MODE SHARE	LONDON PLAN CYCLE MODE SHARE TARGET
Within 10km	14.2%	44.9%
Beyond 10km	1.4%	4.5%
Total	**6.0%**	**19.0%**

The London Plan cycle mode share target would require an unrealistic number of cycling journeys from within 10km



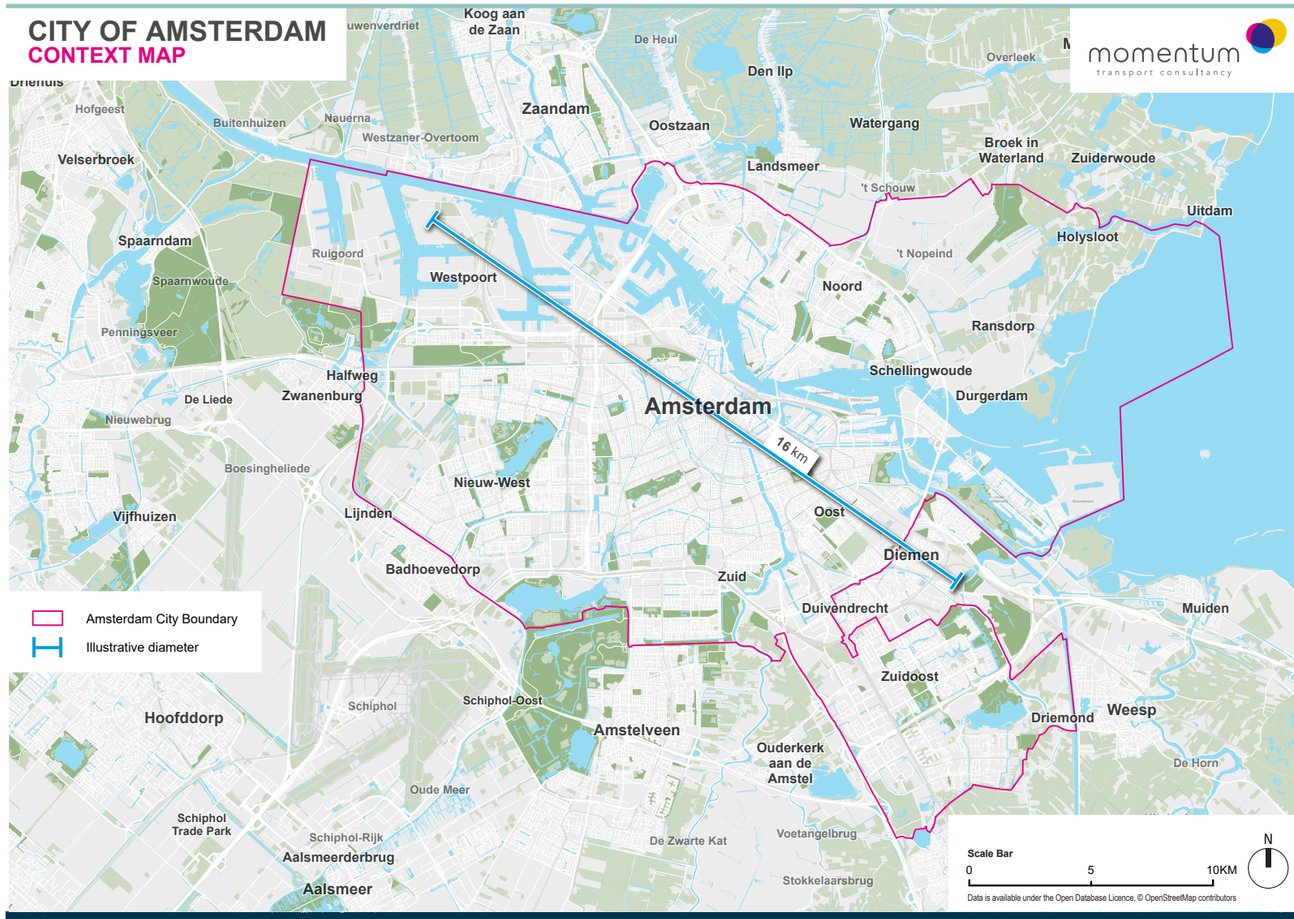
100 Bishopsgate, photos taken Thursday 21 March

WHY IS THE MODE SHARE SO MUCH LOWER AND WHAT IS THE FUTURE DEMAND?

Amsterdam is widely acclaimed as an exemplar cycling city where the cycling mode share has matured. The city is equipped with a vast network of cycle routes, so safe and comfortable that cycling is a preferred transport option for all ages. Residential and commercial areas overlap making connections between home and the workplace direct, with cycle journeys often shorter and more pleasant than London.

> **The cycling mode share in Amsterdam has settled at around 36%[7].**

Looking at the geography of the metropolitan area of Amsterdam, the city covers a slightly smaller area than the 10km (cycling catchment) radius from the City of London. It is roughly 16km in diameter, as shown on the plan below. This comparison means that City of London workers living within 10km of their workplace would need to reach a 9% higher cycle mode share than Amsterdam in order to achieve compliance with current London Plan policy.



Amsterdam City Diameter

[7] Amsterdam | CIVITAS Handshake (handshakecycling.eu)

7. Cycle Mode Share Growth Forecast

Predicted Mode Share

To calculate what may be a more achievable future commuter cycle mode share for the City of London than the current 19% target (which would require 45% of people living within 10km of the City to cycle) we have applied the 19% target specifically to the catchment of City workers who reside within 10km of the City of London. This equates to 42,066 people travelling by private bicycle.

Taking the 42,066 people as being the 85% of cycle commutes within 10km (assumption from the 2011 and 2021 Censuses) and factoring up to account for the additional 15% of total cycle commuting trips beyond 10km, would amount to a grand total of 49,442 cycle commutes out of the total 615,000 City of London workers. This would represent an overall 8.0% cycle mode share.

A realistic but still ambitious mode share target for cyclable journeys would be 10.6%

Applying the same method but using a notional maximum future growth mode share of 25% for cycling to work in the City would result in 55,350 people cycle commuting within 10km and 65,055 people overall. This would represent a total overall City of London cycle commuting mode share of 10.6%.

CYCLE MODE SHARE	TARGET CYCLE MODE SHARE (BASED ON LONDON PLAN <10KM JOURNEYS)	ASPIRATIONAL CYCLE MODE SHARE
Within 10km	19.0%	25.0%
Beyond 10km	1.9%	2.5%
Total	**8.0%**	**10.6%**

CYCLE MODE SHARE GROWTH FORECAST

Growth of Cycling in London

2011 Census data showed 3.8% of people working in the City of London cycled. By 2024 this had grown to 6% (the 2011 Census data does include cycle hire trips (at the time, just TfL Cycle Hire use) whereas the 2024 data does not include cycle hire trips, which do not generate demand for cycle parking). This is a 58.6% increase in mode share over 13 years, but a threefold rise is still needed to achieve the TfL target mode share of 19% from the current 6% (as observed in the surveys described in Chapter 5).

The predicted possible City of London cycling mode shares of 8.0% or 10.6% are based on a 19% or 25% cycling mode share within 10km of the City. Applying the same methodology used previously, if 85% of current trips come from within 10km then the City of London mode share for cycling would be 14.2% within 10km and 1.4% beyond 10km. In 2011, using the same method, there would be a 8.9% mode share within 10km and 0.9% mode share beyond 10km. There is a significant gap to achieving a 19% or 25% mode share within 10km from a current 14.2% share.

Between 2011 and 2024 there was a total increase of 5.3% percentage points in the cycle mode share within 10km of the City of London. This corresponds to a yearly average rise of 0.4% percentage points. This means that it would take 12 years to achieve a 19% cycling mode share, and 27 years to reach a 25% mode share within 10km of the City. This is assuming that cycling continues to grow in a linear pattern across these timeframes.

Influence of e-bikes extending the commuting distance

E-bikes have risen in popularity over the past decade. There are several e-bike rental companies in the capital and a growing number of people who own an e-bike. In 2023, almost one in 10 bikes sold in the UK were electric - a tenfold increase in less than 10 years. Whilst e-bike rentals do not generate demand for cycle parking, the demand for parking from e-bike owners warrants further consideration.

E-bikes allow the user to ride faster and with less effort. This means it is likely people will undertake longer distance trips on an e-bike compared with a regular bike. As highlighted earlier, a day-to-day commuting trip on a regular bike maximises at around 10km. There is a lack of readily available data providing the equivalent distance for e-bikes, but as a notional indicator, it is reasonable that a person on an e-bike would be willing to extend this cycle distance up to 15km. Surveys conducted on office developments within the City of London showed that the proportion of e-bikes occupying cycle parking is 5%.

In the previous analysis, 85% of trips were considered to come from within 10km, and 15% from further afield - in line with 2011 and 2021 travel to work Census data. Although this data will include a proportion of people using e-bikes, for both long and short trips, the data does not separate this information from e-bike trips by distance. Therefore, for robustness, 5% of e-bike trips have been added to these figures, assuming trips are generated only by people living beyond a 10km radius of the City. A revised forecast of trip origins would be 80% (down from 85%) of cycle trips within 10km and 20% (up from 15%) from beyond 10km.

> With the previously used 19% cycling mode share within 10km, which would make up about 80% of cycle commuting trips, this would equate to an overall mode share of 8.5% - 0.5% higher than a scenario that does not account for e-bikes. For a 25% cycle mode share within 10km, this would generate an overall mode share of **11.2%** - 0.6% higher than the previous mode share suggested.

CYCLE MODE SHARE	TARGET CYCLE MODE SHARE WITH E-BIKE GROWTH	ASPIRATIONAL CYCLE MODE SHARE WITH E-BIKE GROWTH
Within 10km	19.0%	25.0%
Beyond 10km	2.7%	3.5%
Total	**8.5%**	**11.2%**

A cycle mode share target that factors in e-bike growth for longer journeys would be 11.2%

These numbers remain significantly lower than the 19% mode share target for the City of London. The 19% mode share target drives the current long-stay cycle parking standards, but the analysis here indicates that this is likely to be far in excess of what is realistically achievable, even with e-bikes increasing the distance people are prepared to commute by bike.

Additionally, the impact of shared bike schemes on the need for long-stay cycle stores must also be considered. Offering greater flexibility for the rider and avoiding the expenses associated with e-bike ownership, these schemes are becoming more popular. Although data on the proportion of cycle commutes using shared hire bikes, such as Lime and Santander is not available, within London 39% of Lime bike trips are linked to commuting[8] and a monthly average rise in trips of 10% each month has been observed, indicating rapid expansion in the sector. Growth of Santander bikes is more stagnant[9], likely owing to more competitor dockless companies, for instance Forest Bike and Dott, but usership is still high. Year-on-year, Forest Bike is seeing over a 100% increase in total rides in the City of London (October 2023 - September 2024).

The study has not accounted for the use of shared bikes in the forecast cycling mode share, nor does the London Plan standard. Therefore, even if the 19% mode share were theoretically achieved (or the alternative forecast mode share) a significant portion of these cyclists would not need a cycle parking space within their office building. However, spaces would still be provided under the current standard.

The implication of this is that significant construction activity, cost, basement excavation works and – most significantly – carbon emissions are being needlessly generated to provide for cycle parking that evidence suggests will never be occupied.

[8] Lime in London: Assessing the benefits of shared e-bike services and recommendations for future regulation July 2023
[9] Cycle hire performance - Transport for London (tfl.gov.uk)

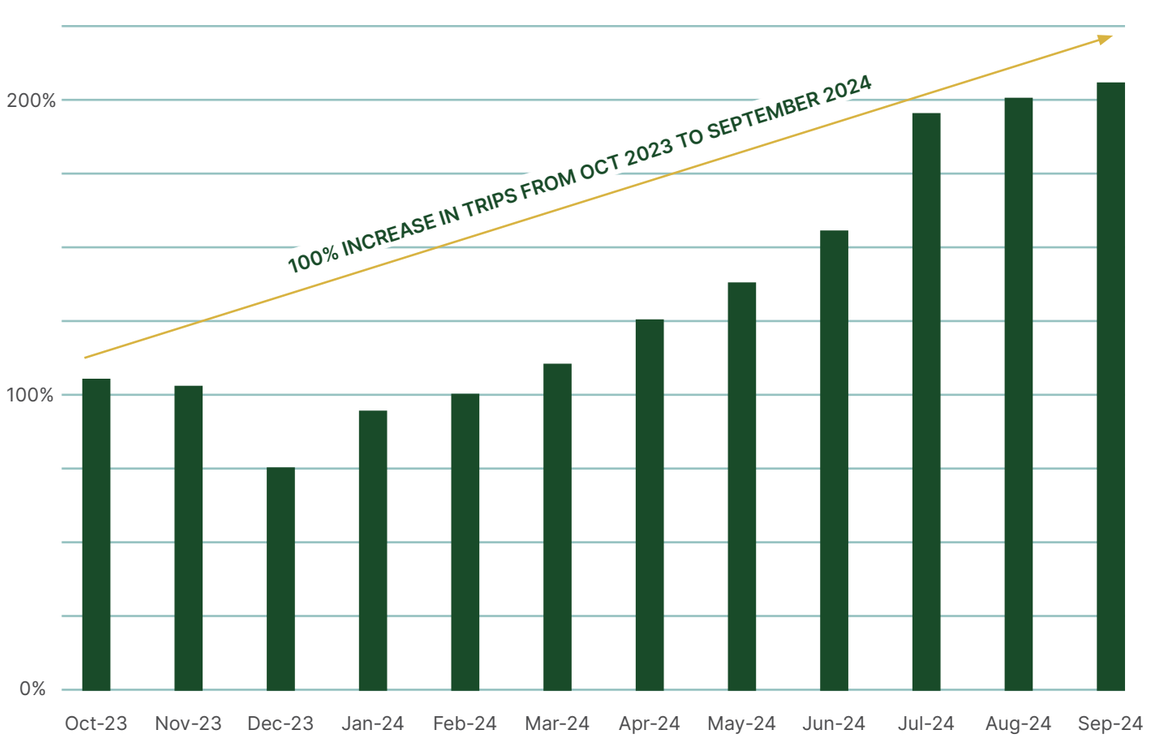
The further away people live from their work, the less likely they are able to commute by bike as their primary travel mode, with a particularly significant drop for distances beyond 10km. Since 64% of City workers live beyond 10km and are, therefore, unlikely to cycle (apart from a hardy 15% of longer distance cycle commuters), a 45% cycling mode share from people who live within 10km of the City would be required to reach TfL's overall 19% mode share. As this is 9% higher than the mode share achieved in the mature cycling city of Amsterdam it is an unrealistic figure. Two alternative mode shares have been set out by applying 19% and 25% modes shares to the City of London working population within 10km specifically, before back-calculating across the entire population.

This results in 8.0% and 10.6% overall mode shares respectively. Even accounting for e-bikes extending the commutable distance beyond 10km has little impact on the ability to reach a 19% overall mode share, and the further impact from the growth of shared bike schemes in London will reduce the need for office bike storage.

Overall, a clear recognition of how distance affects cycling habits and the specific workforce catchment of buildings within the City of London is needed to set a more realistic mode share target; one that does not generate unnecessary cycle storage that often needs substantial additional basement excavation, thereby producing significant associated carbon emissions.

The recommendation is for a 11% cycle mode share target to be adopted.

Growth of Forest Trips in City of London 2023-2024



CYCLE MODE SHARE GROWTH FORECAST

1 Finsbury Avenue, photos taken Wednesday 9th October 2024

8. Embodied Carbon in Cycle Spaces

SUSTAINABILITY AND CARBON POLICIES

According to the UK Green Building Council, embodied carbon from construction is directly responsible for around 20% of built environment carbon emissions in the UK. Based on current figures, this is likely to form more than half of built environment emissions by 2035. For the UK to meet its 2050 net zero emissions target, policymakers must continue to implement and measure appropriate legislation to ensure policies are maximising all opportunities to reduce carbon.

Carbon reduction is a central focus for planning policy and new development. The City of London Corporation has adopted a Climate Action Strategy and is developing a Planning for Sustainability SPD alongside its draft City Plan 2040 to set exemplary standards for sustainability.

It has also developed its Carbon Options Guidance planning advice note to allow an accurate comparison of development types ranging from refurbishments to more substantial redevelopments, as part of the pre-application process.

Developers and designers have made significant advances in reducing embodied carbon in City of London real estate. Some of these developments are amongst the most decarbonised in the world.

Two City of London buildings currently under construction which are achieving exemplary carbon reductions are 2 Finsbury Avenue and 50 Fenchurch Street. These high-rise buildings are both exceeding decarbonisation policy by around 25% but could go considerably further if cycle parking provision were more appropriately matched to demand. The cycle parking provision and associated accommodation at these two developments extend to multiple levels of basement. These subterranean, concrete floors are structurally complex and carbon intensive to construct.

The extensive surveys conducted as part of this report show that up to 86% of the cycle spaces within these two buildings are unlikely to be used when complete and occupied based on current day cycle parking demand.

> **This means a total of 2,284 unused spaces across both buildings equivalent to almost 2,900 tonnes of embodied carbon – this is broadly the same amount of carbon that 50 Fenchurch Street will produce in a decade of operation[10].**

ARUP RAMBOLL

[10] Figures calculated by Arup in 2024, derived from data collected from Government Department for Energy Security on UK electrical grid decarbonisation

EMBODIED CARBON IN CYCLE SPACES

CARBON IN BASEMENT CONSTRUCTION

International engineering firms Arup and Ramboll are leading the structural designs of 50 Fenchurch Street and 2 Finsbury Avenue respectively. They have teamed up for this report to explore the volume of embodied carbon in typical basement construction for London office developments. Their study uses the 2022 Greater London Authority (GLA) Whole Life Carbon Aspirational Benchmark of less than 600 kgCO2e per square metre, of which 19% is allocated to substructure and circa 11% accounts for basement construction.

At 50 Fenchurch Street and 2 Finsbury Avenue, each cycle space with its share of associated showers, lockers and circulation takes up 1.67 sqm of basement space as an average across the two buildings. Arup and Ramboll have used this proven metric and the GLA carbon benchmark data to conclude that a single cycle space in a typical new City of London high-rise office basement produces approximately 1.29tCO2e in construction.

EMBODIED CARBON IN CYCLE SPACES

CASE STUDIES

50 Fenchurch Street

50 Fenchurch Street is a 35-storey office tower with four levels of basement. The building will provide 1,248 cycle spaces, 125 showers and 1,248 lockers when complete. Including circulation routes, these areas occupy almost 2,000 sqm (GIA) of basement space or 1.6 sqm of basement per cycle space.

This report recommends a cycle modal share of 11% which allows for current day cycle usage plus robust future growth as set out in chapter 7, based on an occupancy of one person per 15 sqm of net internal area. This equates to a requirement of 421 spaces, and highlights an anticipated overprovision of 813 cycle spaces, generating an unnecessary 1,052tCO2e.

This overprovision occupies 1,355 sqm (GIA) of area, equivalent to more than five tennis courts of unused, carbon intensive basement space.

2 Finsbury Avenue

2 Finsbury Avenue is a 36-storey office tower with three levels of basement. The building will provide 1,422 cycle spaces, 112 showers and 1,422 lockers when complete. Including circulation routes, these areas occupy almost 2,470 sqm (GIA) of basement space or 1.74 sqm of basement per cycle space.

Using the recommended cycle modal share of 11% and an occupancy of one person per 15 sqm of net internal area, this equates to a requirement of 483 spaces and highlights an overprovision of 939 cycle spaces generating 1,216tCO2e.

This overprovision occupies 1,566 sqm (GIA) of area, equivalent to more than six tennis courts of unused, carbon intensive basement space.

EMBODIED CARBON IN CYCLE SPACES

THE DRAFT CITY PLAN 2040

The draft City Plan 2040 is a plan for the development of the Square Mile, setting the City of London Corporation's priorities for development up to 2040, together with policies that will guide future decisions on planning applications. Once adopted, the new plan will replace the Local Plan 2015.

The Plan sets an ambitious but realistic target for sustainable economic growth in the Square Mile, by creating a minimum of 1.2m sqm of net additional office space by 2040.

By current City Corporation and London Plan policy standards, this new office space will generate approximately 24,600 long stay cycle spaces.

Using the recommended cycle modal share of 11% and an occupancy of one person per 15 sqm of net internal area, **this equates to a requirement of 8,800 spaces, and highlights an anticipated overprovision of over 15,800 cycle spaces generating almost 20,500tCO2e.** This is broadly the same amount of carbon that seven all-electric City office towers would produce in 50 years of operation.

This overprovision would occupy circa 33,000 sqm GIA of area (355,000 sq ft), equivalent to a large City office building.

24,600
cycle spaces required by → **today's standard**

8,800
cycle spaces required **will truly be needed**

vs.

+15,800
cycle spaces over provision **over provision**

this excess will generate almost
20,500tCO2e

355,000 sq ft
This overprovision would occupy the equivalent of a large office building in the city.

SUMMARY & RECOMMENDATIONS

9. Summary & Recommendations

This report has set out the issues pertaining to the current cycle parking standards for office developments in the City of London as set out in the London Plan. Lower occupancy densities found in office space than policy assumes, combined with lower NIA to GEA efficiency in taller buildings has led to a significant overprovision of office based cycling facilities in the City of London. This is compounded by the increased use of shared hire bikes that do not need office based parking, plus prolonged slow growth in cycle commuter mode share.

To avoid or mitigate, where possible, the severe embodied carbon impacts associated with basement excavation and dedication of large areas to empty cycle parking (86% in line with winter and summer surveys), it is recommended the City of London Corporation reassesses its approach to the cycle parking standards and considers alternative solutions.

Based on the results of these studies and analyses, the CPA proposes the following recommended changes to the approach to cycle parking for offices in the City of London:

Ambitious but Achievable Mode Share

There is a reasoned limit to how many people are able and willing to commute to their City of London office, largely because 64% of workers live further than 10km away; 35% of whom live more than 20km away. It must be acknowledged that there is a distance threshold where commuting by bicycle becomes unfeasible and unlikely. Following detailed review, survey and analysis it is recommended that policy makers update cycle parking policy for City of London offices to reflect a target cycle mode share of circa 11%.

NIA not GEA

To resolve calculation inaccuracy, it is recommended that City of London cycle parking standards for offices are revised to derive from Net Internal Area (NIA) rather than Gross External Area (GEA). It is also recommend that cycle parking standards should be calculated using an effective density of one employee per 15 sqm NIA. This represents a considered balance between the current British Council of Offices standard of one employee per 12.5 sqm (one employee per 10 sqm with 80% peak utilisation) and the results of our survey which demonstrated an average effective density of one employee per 21 sqm NIA on peak days across all buildings surveyed.

Facility Specification

It is recommended that rather than setting policy that focusses purely on the quantum of cycle parking which places significant pressure on space take, more emphasis should be given to size and functional operation of facilities. Greater flexibility on cycle parking types such as proportions of Sheffield stands, hanging racks and other types of storage should be encouraged. Furthermore, consideration for evolving requirements such as e-bike storage and charging, enhanced arrival experience and cycle promotion plans are also recommended.

Cycle Promotion Plans

It could take many years to achieve the current cycle mode share targets for office buildings already built, but in fact they may never achieve full cycle storage occupation. In the meantime, the space taken by vacant cycle spaces could accommodate complementary amenities to encourage active lifestyles, such as gyms or health and fitness studios. We recommend that monitoring regimes are put in place, secured through cycle promotion plans, which would enable cycle parking usage to be reviewed annually. If cycle storage demand was to increase, this would be reported through the cycle promotion plan and the building owner would be obliged to provide additional storage with associated facilities. It is recommended that developers and applicants should be able to apply retrospectively for such complementary facilities where cycle parking studies demonstrate a low usage of long stay cycle parking in existing office buildings.

Taking one of our surveyed buildings as an example - with our recommended density occupation of one employee per 15 sqm and a revised cycle mode share target of 11%, the building would need to provide 880 cycle parking spaces for its office employees. Our surveys have shown that typically only 270 of those spaces would currently be occupied, leaving 610 vacant cycle spaces. If 450 of these spaces instead could accommodate active amenity uses this would allow for further 60% growth in cycling while providing additional employee amenity that promotes wellness and active lifestyles.

It is also recommended therefore, that office cycle parking policy is updated to allow cycle parking volumes to be phased in with demand, governed by annual monitoring and secured through cycle promotion plans.

CPA

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