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Review Article

Planning past parks: overcoming restrictive green-space narratives in contemporary compact cities

Green-space planning has become a prominent feature in metropolitan sustainability policies, reflecting growing awareness of the multifunctional benefits of extensive typologies of urban green spaces. Yet this article will argue that the existing approach to green-space planning is rooted in traditional ways of thinking about green space's form and function that originated nearly two centuries ago. Calling on empirical research conducted in London, this article aims to demonstrate the gap between the conceptual way urban green space is presented and the practical way it is delivered. Findings suggest that, despite adoption of wider urban greening policies, many practitioners take a conventional approach that parks – as large green spaces – are the 'best' delivery mechanism for access to green space. This article will demonstrate how this is problematic, concluding that broadening green space in planning metrics would improve access to the multifaceted benefits that diverse green-space typologies – including, but not limited to, parks – can provide.

Keywords: urban green space, compact development, parks, urban environment, London

Introduction

Green space is recognised for its positive contributions to human and ecological health. This is particularly the case in cities, where green spaces can mitigate negative impacts, such as loss of biodiversity (Aronson et al., 2017) and urban heating (Aram et al., 2019), caused by continued urbanisation and associated increases in population and development densities (Haaland and Van den Bosch, 2015; Xu et al., 2018). As such, creation and conservation of green spaces have emerged as a prominent policy instrument used by municipalities worldwide to address broad ecological, economic and social issues (Douglas et al., 2017). This is accompanied by an evolving understanding of the multifaceted contributions to urban sustainability that can be delivered by a spectrum of green-space typologies, including vegetated roofs, green verges and street trees (WHO, 2017).

However, this article argues that, despite policy discourse advocating for expansive approaches to urban greening, planning practice continues to emphasise access to green-space benefits through a narrow perspective, namely equating 'green space' with conventional 'parks'. This traditional approach to green space is grounded in

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ideals established nearly 200 years ago that were based in a Victorian-era ‘obsession’ (Hulin, 1979, 17) with replicating the countryside in town (Whitten, 2020). This obsession with the countryside stemmed from an anti-urban sentiment that viewed the city as corruptive, dirty and amoral, and thus as a place that needs escaping (Malchow, 1985; Olsen, 1993). This rural idyll remains a powerful influence in contemporary British town planning, including green-space planning (Harrison and Clifford, 2016; Churchill et al., 2019).

Rooted in a well-entrenched, aesthetic-led landscape style, ‘tacit assumptions’ (Taylor and Hochuli, 2017, 26) attached to the meaning of green space remain heavily influenced by historical patterns and sociocultural proclivities that can compete with contemporary environmental concerns (Ginn and Francis, 2014). The notion that urban green spaces embody the countryside emphasises larger parks, which are more likely to be formal spaces that can mimic rural idylls (Whitten, 2018). This conceptualisation is problematic given increasing population and development densities, which inherently limit space for providing conventional parks in urban areas (Boulton et al., 2018). Thus, as cities continually grow and change, planning approaches accounting for access to green space remain reinforced by customary categorisations of ‘parks’.

This article aims to demonstrate a gap between the conceptual way green space is presented in planning-policy discourse and the practical way it is delivered. The article maintains that a rigid approach leads to misconceptions around the quantity, distribution and accessibility of green space. This inhibits the ability to fully integrate the functions and services conveyed by diverse, interconnected green features into increasingly dense cities. This includes overlooked opportunities to provide or enhance a range of smaller and less traditional green interventions that can more realistically be provided in built-up areas (Fuller and Gaston, 2009). Such green features can connect with and complement larger parks, commons, nature reserves, urban forests and so on, while strengthening a city’s overall greenness (Ahern, 2007). As such, this article challenges planning rhetoric that encourages urban green space beyond parks, yet largely fails to account for non-conventional spaces in standards and metrics, particularly related to accessibility.

The article is structured as follows. The first section discusses the evolution of perspectives on the purpose of urban green space, including how planning has sought to balance green space with increasing density. Next, the London case is presented, followed by an overview of the methodological approach. The next section presents the results from interviews, followed by a discussion of the implications for green-space planning in London and other cities facing similar challenges in delivering green space.

The legacy of the Victorian park

Integrating green spaces into urban areas is not a new idea. In the nineteenth century, urban densification and the resulting unhealthy conditions brought attention to the lack of natural areas in European and other cities (Kohout and Kopp, 2020). Motivated by Victorian liberalism, this prompted a turn in the UK towards integrating elements of the natural landscape into the urban fabric (Henneberger, 2002). In particular, this took the form of including publicly accessible parks and gardens in city design (Jordan, 1994). As such, the concept of public parks became a formal tool for addressing social and environmental concerns in rapidly industrialising British cities (Brück, 2013). The idea of ‘parks for the people’ (Reeder, 2006, 31) centred around the belief that nature – represented by the ‘idealised countryside’ – was healthy, pure and restorative (Welch, 1991, 6). Thus green-space planning was grounded in mimicking idealised rural settings as a blunt counterpoint to urban growth, rather than in adopting a flexible form of urban green space working in tandem with, not against, density.

Green spaces were introduced into crowded, dense conditions to improve the physical health and behaviour of the poor and working class throughout British cities, such as Derby, Liverpool, Glasgow and London (Brown, 2013). This reflected a changing attitude towards planning in which urban parks became thought of as “essential breathing spaces” in an increasingly pathological city’ (Clark and Jauhiainen, 2006, 17). For example, the positive impact on health underpinned the creation of suburban Liverpool’s Birkenhead Park, where local residents could recreate (Henneberger, 2002). Similarly, publicly accessible parks in Glasgow were meant to counteract the ‘smoky, congested and fever-ridden’ city (Maver, 1998, 328). By the end of the nineteenth century, parks were ‘as much a municipal service as the supply of water, sewerage, and education’ (Olsen, 1993, 491).

The burgeoning practice of green-space planning continued to evolve in tandem with concerns about the impact of increasing density on health and quality of life. In the UK, Ebenezer Howard’s garden cities were a reaction to overcrowding and pollution (March, 2004; Hügel, 2017). To address conflict between urbanisation and access to nature, Howard planned cities with defined populations limited to 30,000, with delineated, formal green spaces throughout and around them (Richert and Lapping, 1998). Similarly, visionary planner Patrick Abercrombie sought to address overcrowding, congestion, sprawl, pollution and poor housing conditions in post-war London through controlled population density and fixed proportions of green space (Van Roosmalen, 1997; Lemes de Oliveira, 2014). The introduction of formal green space into industrialising cities became prevalent in Europe and North America as well. Urban parks were established to address broad social concerns, such as reducing class conflict, socialising immigrants and stopping the spread of disease (Cranz and Boland, 2004). Concern for public health in the US prompted parks designed for

active reaction, including those by innovative and prolific American landscape architect Frederick Law Olmsted (Schuyler, 2015).

Although such approaches advanced concepts of a city-nature nexus and elevated the role of landscape in town planning, they continued to treat density and green space as antagonistic. Approaches such as Howard's garden cities were based on lower densities than in contemporary cities. They also lacked the verticality that underpins modern high-density urban planning (Lin, 2018). Designated parks used nature as a tool to control urbanisation (Ward, 1990), in effect extending the prevalent nineteenth-century anti-urban sentiment (Dempsey, 2009).

Green space as a core ingredient in urban sustainability

Over time, the expected functions of urban green space have changed. From their earliest days, public parks have been valued for their contribution to human health and well-being and for providing green oases in congested urban agglomerations (Malchow, 1985; Whitten, 2020). In the late twentieth century, however, rising environmental awareness spurred a focus on protecting natural systems, including green open spaces, for planetary health, going beyond anthropocentric amenity (Baycan-Levent et al., 2009). In particular, concerns around mitigation of and adaptation to climate change became integrated into spatial planning (Hurlimann and March, 2012). The ecological, economic and societal consequences of climate change contributed to enthusiastic adoption of the concept of sustainability as a core tenet in planning policy (Gunder, 2006). This led to increased interest in urban nature in general and green-space planning in particular (Sandström, 2002; Baycan-Levent et al., 2009). Thus urban green space is increasingly expected to contribute to ecological health and environmental resiliency, giving these spaces a more complex purpose beyond amenity and leisure.

Indeed, green space features pivotally in modern planning and design approaches, such as new urbanism, smart growth, compact city and vertical urbanism, that seek to preserve and enhance natural features while intensifying density (Artmann et al., 2019). Whereas density was once considered the root of many urban ills, contemporary practices encourage compact development as a more sustainable urban form (Jenks and Dempsey, 2005). Compact-city principles intertwine urban green space within sustainability goals, promoting density and nature as working together rather than being contradictory (Tappert et al., 2018). Cities experiencing growing population and development intensification more readily embrace sustainable development (Demazière, 2020), with a shift towards infill development and verticality (Bibri et al., 2020). Concepts that have emerged from this include a focus on accessibility, such as the 15-minute city, in which daily necessities, including green space, are located within a 15-minute walk or bike ride (Pozoukidou and Chatziyiannaki, 2021). Such concepts

fit with access-to-green-space standards, such as Natural England's Accessible Natural Greenspace Standard (ANGSt), which specifies that a person should live 300 metres or less from a green space of at least two hectares (Natural England, 2010). Meanwhile, Fields in Trust's Guidance for Outdoor Sport and Play calls for parks and gardens to be no more than 710 metres from a person's home, while also specifying green-space quantity of 0.8 hectare per 1,000 population (FIT, 2020).

However, in densifying cities, such standards often go unmet (Boulton et al., 2018). Inherent tension remains inevitable, as development and density can occur 'at the expense of parks and other green spaces that are already in limited supply' (Sandström, 2002, 373). For example, in London, dwelling density has been identified as an inverse indicator of green space (GLA Economics, 2003).

Small and non-traditional green spaces

Planning policies stipulate green-space standards and targets to ensure residents have access to nature and open space (Ekkel and de Vries, 2017). Such metrics often can be either based on historical provision or arbitrarily set. For example, Fields in Trust first published its influential 'Six-Acre Standard' guidance (e.g. six acres of public open space per 1,000 people) in the 1930s (FIT, 2020). Attention focuses on formal spaces of particular typologies, including parks and gardens, which may be well protected and managed, but are not readily replicated in high-density environments (Jim, 2004). However, small green spaces 'on the doorstep' are often more valued by urban dwellers (Van Herzele and Wiedemann, 2003, 113). Small neighbourhood green spaces in dense cities 'cater to the daily needs for contact with nature' (Jim and Chen, 2003, 103) and are 'an important asset' for mental restoration and social interaction (Peschardt et al., 2012). Pocket parks and natural features such as trees and flowers in small landscaped areas can provide opportunities for frequent interactions with nature that positively affect health and well-being (Kaplan, 1984). Local green spaces featured prominently during the COVID-19 pandemic and lockdowns, when people were restricted to their neighbourhoods (Whitten and Massini, 2021). Yet such 'liminal' spaces are vulnerable to development, as they are less likely to be mapped by local authorities and less likely to factor into planning metrics (Rupprecht and Byrne, 2014, 597).

In recent years, a more integrated approach to green-space planning has been proposed to enhance interconnectivity and multifunctionality of urban greening (Mell, 2009; 2016). Although a contested concept with multiple definitions (Matsler et al., 2021), green infrastructure has gained traction for addressing urban sustainability through planning (Hansen and Pauleit, 2014). Green infrastructure can be defined as 'a strategically planned network of natural and semi-natural areas with other environmental features designed and managed to deliver a wide range of ecosystem services' (EC, 2013, 3). Green infrastructure varies in type, scale and benefits (Mell and Whitten,

2021). Notably, typologies beyond parks are seen as critical – not only for providing spatial access to nature, but also for broad environmental services that contribute vital health benefits (Fuller and Gaston, 2009; Coutts and Hahn, 2015). These typologies include street trees, housing amenity spaces, woodlands, private gardens, river corridors and canals, allotments, city farms, and cemeteries and churchyards (Mell and Whitten, 2021).

Further, whereas Howardian and Abercrombian planning styles relied on formally demarcated green spaces, green infrastructure allows for small-scale and incidental green features (Dennis et al., 2020). This diverges from delivering urban nature in a controlled and managed way. With green infrastructure, planning for access to a wide array of green elements and their associated benefits occurs alongside development, rather than as an ornamental afterthought (Eisenman, 2013). As such, when positioned as a component in a network of green infrastructure, green space increasingly is included in a diverse range of local policies and strategies, such as health, housing, highways, education and planning. Yet, as this article will demonstrate, despite the adoption of green infrastructure in planning discourse, practitioners tend to depend on long-standing conceptualisations of green space, with characteristics of the traditional urban park influencing decisions around accessibility.

The London case

London provides an illustrative case of a gap between policy discourse about urban green spaces' role in healthy, sustainable cities, and practical approaches to accommodating access to green space in continually changing cities (Dempsey, 2020). In 2020, London's population stood at an estimated 9,002,488, the largest in its history (ONS, 2021). By 2041, population is projected to reach 10.8 million (GLA, 2021a). Unsustainable growth and the impacts of climate change have been called the greatest threats to the British capital's prosperity (LAEC, 2016). As such, London, like many other cities, has pursued policies to address the economic, ecological and social impacts of its growing footprint. This includes improving the quality, quantity and accessibility of urban green space (GLA, 2018b). The Greater London Authority (GLA) and London's local authorities have established broader urban greening policies, such as green infrastructure and the Urban Greening Factor, that seek to introduce a wider range of green features through development (GLA, 2021a).

At the same time, London needs to add 66,000 new homes annually for twenty years to address its critical housing shortage and keep pace with demand (GLA, 2021a). To mitigate the impact of growth, reduce sprawl and improve sustainability, planning policies call for high-density and infill development (GLA, 2021a). With a population density of 5,727 people per square kilometre, London is the densest UK city (ONS, 2021). This increases to 11,064 people per square kilometre for inner

London, which comprises the 12 central boroughs plus the City of London (ONS, 2021). Resultant land-use pressures exacerbate a ‘trade-off between protecting and enhancing London’s green spaces while addressing the need for affordable housing’ (GLA Economics, 2003, 2).

Determining the precise amount of green space in London is elusive. Data typically are reported by local authorities, which vary in the definitions and data collection methods they use, limiting comparability. Organisations such as Fields in Trust, Friends of the Earth and Greenspace Information for Greater London also use varying methodologies to ascertain the amount of existing green space. Despite this data fuzziness, London generally is considered 47 per cent green (GiGL, 2019). Private, domestic gardens make up an estimated 14 per cent of this. Yet such private green spaces are not distributed equitably across the city, and one in five London households lacks access to a private garden, the lowest rate by far in Britain (ONS, 2020).

Most conventional public green spaces (e.g. parks) are owned and managed by London’s 33 local authorities. Through planning, local authorities mediate development’s impact on existing spaces and negotiate the creation of new green spaces. Planning also drives efforts to expand green cover beyond customary parks, with other green infrastructure, such as vegetated roofs, increasingly required as a condition of development. As such, local planning services have a pre-eminent influence on delivering more green features to more people. Yet, despite their using non-traditional green features to increase overall greening, this article will show that these same features usually do not contribute to green-space access targets and metrics. Administratively, green space as ‘parks’ and green space as ‘green infrastructure’ are siloed. This article returns to this disconnectedness in the discussion section.

Methodology

The primary method of data collection in this research is in-depth, semi-structured interviews. Overall, fifty participants whose work involved green space were interviewed between 2014 and 2018. Participants included public-sector (PS) staff, including council planning, green-space, housing and strategy officers; representatives from charities and community organisations (COs); and developers, architects, registered social landlords and planning consultants (DPs). Initially, participants were selected based on their organisation and job responsibilities, identified through an online search. Subsequently, additional participants were recruited based on referrals. Questions were open-ended and designed to elicit participants’ perceptions and experiences with delivering or managing green space. Examples of interview questions include ‘What pressures or constraints affect the borough’s green spaces?’, ‘Does the borough meet demand for green space?’ and ‘What do you think is the borough’s

goal regarding green space?’ The interviewer used the term ‘green space’, rather than ‘parks’, because the research was exploring a range of green features, and this was communicated to participants. Thematic analysis applied to interview transcriptions identified patterns in participants’ responses, leading to the findings presented here.

Table 1 Residential units added (2005–2014) and population density (2014), Inner London

Inner London borough	Net residential units/ha	Rank	Population density (pop/ha)	Rank
Tower Hamlets	21,975	1	143.9	2
Islington	13,034	2	149	1
Southwark	12,274	3	105	9
Hackney	11,939	4	138.4	3
Wandsworth	10,977	5	91.3	10
Lambeth	10,234	6	118.8	5
Greenwich	9,515	7	56.8	17
Lewisham	8,749	8	83.2	13
Westminster	7,355	9	108.6	7
Hammersmith & Fulham	5,764	10	109	6
Camden	4,812	11	107.8	8
Kensington & Chelsea	1,584	12	129.2	4
City of London	875	13	23.7	31

Source: GLA (2021b; 2018a)



Figure 1 Map of Greater London with Inner and Outer London boroughs, created by author
Source: GLA (2018c). Contains Ordnance Survey data © Crown copyright and database rights

This research is grounded in three Inner London boroughs: Islington, Tower Hamlets and Wandsworth (Figure 1). The study area was limited to Inner London because these central boroughs are more densely populated and planning policies call for increasing densities (GLA, 2021a). All three boroughs were experiencing intensification of use of existing green spaces alongside demand to create new green spaces due to pressure from growing populations. At the same time, as higher-density Inner London boroughs, they were experiencing constraints on their ability to increase the quantity and accessibility of green spaces (Whitten, 2018).

Using data from the Planning London Datahub (GLA, 2021b), Inner London boroughs were ranked according to net gain in residential housing units from FY2005 to FY2014 (Table 1). The year 2005 was the first full year that the London Plan with density requirements was in effect, and 2014 was the most complete year for which data were available when this research began. This was then analysed alongside population density. Islington, Tower Hamlets and Wandsworth were among the densest boroughs with the largest net gain in residential units. In other words, these boroughs were dense and growing denser, in line with planning policies in the London Plan. This affects their ability to create additional conventional green spaces to keep pace with growth and demand. The three boroughs also represent different geographic areas and traditionally have different political cultures.

Results

The way in which participants discussed ‘green space’ was instructive, revealing ‘tacit assumptions’ inherent in the term. Analysis of the influence on planning processes and metrics is useful for examining how policy aims to improve urban sustainability are addressed in practice through increasing green-space access within an increasingly dense milieu.

The name game

For interview participants, the definition of ‘urban green space’ was implicit and readily interchanged with a range of terms, most frequently ‘park’. Others included ‘garden’, ‘greening’, ‘nature’, ‘public space’, ‘outdoor space’ and ‘green infrastructure.’ Some participants interchanged multiple terms in one sentence or answer, even when referring to the same particular site.

Participants frequently substituted ‘open space’ for ‘green space’ and other terms describing natural elements, although ‘open space’ also was used to include non-natural spaces (e.g. plazas) and blue space (e.g. rivers and canals). PS4 (council planner) observed that planners do not differentiate between ‘open space’ and ‘green space’ when considering planning applications. Several participants said that the terms

are conflated because opportunities to increase accessible green space are limited, and non-green open spaces can provide overlapping benefits with green space, such as facilitating social interaction:

It [‘open space’] makes it look like we’ve got more and, from my opinion, because we live in a really dense, built-up borough, anything that gives you that little bit of space away from the density and the buildings is a good thing. That’s probably why we lumped the two together. (PS21, council green space officer)

PS11 (council strategy officer) said that because open space usually includes waterways, the term masks a deficiency in accessible green space: ‘Unless you can walk on water, the fact that we have great big docks, yes, they create open areas and create breathing space in the city, but actually you can’t make very much use of them.’

Green space on the doorstep

Most participants did not recognise housing amenity space as green space. Amenity spaces are located within housing developments, particularly estates owned and managed by local authorities, registered social landlords or housing associations. Amenity space also can include publicly accessible spaces within private development, which may be required as a condition of planning permission. Despite housing amenity spaces often being green or containing green features, participants rarely used terms such as ‘green space’, ‘nature’ or ‘park’ to describe these spaces. Instead, they distinguished these as separate from other green-space typologies: ‘If you’ve got a big developer who has done a huge housing estate and there’s lots of land within it ... that’s going to be housing land rather than public open space’ (PS23, council green space officer). Housing amenity space typically is funded from money provided by central and local government and earmarked for housing, or supported by a fee paid by an estate’s residents. This is not the same funding source for parks and other green spaces. The source of funding influenced whether some participants considered these natural areas as green space: ‘Our [green-space] standard doesn’t necessarily include things like what’s called housing amenity land because, technically, the way it’s funded is out of service charges out of the rents’ (PS11, council strategy officer).

Build, build, build

Almost all participants tied constraints in delivering conventional green spaces to the demand for more housing, which they identified as a planning priority. Planning policies that call for compact, infill development compounded this difficulty: ‘The obvious challenge [to providing green space] is the one of density and the pressure to build as densely as possible’ (CO17, planning charity manager); ‘The issue that we’re

really grappling with is, how do you provide high-quality residential environments at really high densities? When you're building at high densities, you have a lot of flats with no gardens' (PS9, council planner).

Some respondents discussed how the built-up nature of their borough meant that new housing development often occurs via small-scale developments, providing few opportunities to create publicly accessible conventional green spaces: 'A lot of our housing delivery tends to be smaller sites below ten units, so it's going to be very difficult to secure any kind of on-site open-space provision' (PS15, council planner).

Prioritising dense residential development inevitably would lead to loss of green-space functionality or quality, some participants said, contradicting policies intended to protect and improve green space: 'Given how dreadful our housing shortage is, I think we're going to have to accept that some so-called community assets [including green spaces] are going to have to go and we're going to have to have more high-density housing to meet demand' (PS6, regional planner).

'Staggering' population growth

Most participants discussed increasing development in tandem with growing population: 'We're not building over it [open space]. We're protecting it. But, if you look at the census data, the increase in population is quite staggering' (PS9, council planner).

While residential and other development reduces the supply of land available for new parks and contributes to loss of green space, population growth intensifies demand for and use of existing spaces. Subsequently, intensification of use affects the quality of these sites and their ability to deliver the multifunctional benefits for which they are provided: 'In certain spaces, you can't see the grass for the bodies ... The pressure on our parks is ridiculous' (PS23, council green space officer).

One participant observed that supply of conventional green space cannot keep pace with demand for even one specific recreational use: 'We're never going to be able to provide enough football pitches for everyone to be in a league and do what they want to do ... every park in the borough would have to be plastered with football pitches, and you couldn't do anything else' (PS11, council strategy officer).

Emphasising sports-related features in green spaces fits with the influence of recreation-based standards, which some participants said can privilege certain uses, such as playing fields, in green-space planning. This further highlights the difficulty in delivering multifunctional spaces:

I'll say, 'you need to do some provision for wildlife,' and they'll say, 'we can't because we've got a plan to make this amenity space.' ... Their whole argument is around the fact that ... somewhere in the planning process, someone had probably said to them, 'you need to provide X metre-squared of amenity space'. (PS14, council green space officer)

Size matters

Participants often focused on flagship or destination parks, with several saying large parks constitute a more legitimate form of green space. Yet this reinforced the inability to increase the amount of new green space: ‘We’ve run out of land. We haven’t got any land holdings sufficiently big enough to provide new parks’ (PS16, council green-space officer); ‘We aren’t expecting to be getting any new large parks ... it’s quite hard in practice’ (PS5, council planner).

Several participants in Wandsworth discussed a proposed 12-hectare linear green space in Nine Elms. Despite being slightly bigger than Islington’s largest green space, Highbury Fields (11.75 hectares), the space was not considered big enough to constitute a park, they said: ‘There’s a lot of small sites rather than one big site, so you’re not really going to provide a proper green space there’ (PS4, council planner). However, some participants associated with Islington, London’s long-time densest borough, advocated for smaller green spaces:

There are things we call parks that other people would ... think of as just a patch of grass. We have a highway verge, which residents now call Petherton Green [Figure 2]. It’s basically a strip of land in the middle of a wide road. From a resident’s perspective, that’s their park. In any other borough, that’s a highway verge that you mow periodically. (PS16, council green space officer)



Figure 2 Petherton Green, Islington

Barriers to access

Participants discussed accessibility standards used by planners that delineate the walking distance each resident should be from a range of sizes of public open space, although not specifically green space. Less frequently mentioned was a standard for access to nature, defined as a one-kilometre walk from formally designated sites of importance for nature conservation (SINCs) (GLA, 2018b). Some participants conflated the two targets. Each borough has areas deficient in access to both open space and nature. Participants described an inability to meet targets aimed at addressing deficiencies due to the characteristics of built-up areas. They said that opportunities to create new green spaces, even at the local park size of two hectares, within designated distances from homes, are almost nonexistent: ‘The GLA could set these targets, but they’re just impossible for us to meet’ (PS21, council green space officer).

What participants perceived to be green space affected how they discussed accessibility. Most participants associated access standards with formally designated and conventional, ground-level green spaces. Other green-space typologies required by a local authority, such as amenity space, did not factor into their calculations, even though such spaces can be sizeable, located in areas deemed deficient and within designated proximity to residents’ homes:

You could have a ... housing estate that has got loads and loads of green space, but it’s not actually recognised in planning terms as a park. You could have a slightly perverse situation where ... people [at the estate] are more than five minutes from a park, therefore they’re deprived of access to open space. Actually, they aren’t, but it’s all down to what metric you use. (PS7, regional policy officer)

A few participants said green elements beyond parks could address wider purposes for providing green spaces:

One of the problems we have is changing perceptions because people don’t look at that and go, ‘that’s a park,’ they look at that and go, ‘oh, it’s a tree.’ (PS14, council green space officer)

I don’t think that [open] space has to just be at ground level. There’s all sorts of opportunities now. I think we can be very creative if we get away from the construct that the landscape is trees and shrubs and grass. (DC6, landscape architect)

You can’t play a game on a grass verge. Is it providing anything? In terms of leisure, it’s not, but in terms of ecosystem benefits, it’s providing something. (CO17, planning charity manager)

No net loss and open space per capita

Two additional planning standards mentioned by participants focus on green-space quantity: preventing net loss of open space and maintaining a specific amount of open space per capita. Most participants described these as unrealistic or ‘simply unattainable’ (CO1, green-space charity executive) given the intensity and pace of population growth and development. In drawing this conclusion, though, they called on ideas of traditional green spaces, i.e. conceptualising one large green space rather than a network of smaller connected ones:

To maintain green space per capita as it is, we’d have to create effectively 16 hectares of open space. There’s just no sites for that. In an ideal world, you’d have a certain minimum amount of open space per person. But, to keep that level of open-space provision per person in line with population growth, you need some substantial amounts of land and it just doesn’t exist. (PS15, council planner)

Even if no net loss of open space is achieved, population growth causes per capita space to decline. This pushes boroughs further from their planning targets, a constraint that frustrated participants. However, this did not cause them to challenge their definitions of green space: ‘We’ve got some new open space, but the population increase has been staggering, so we’re down to about a hectare of open space per 1,000 population (PS9, council planner).

As with access-related standards, participants did not associate quantity standards with non-conventional green spaces, such as vegetated roofs or amenity spaces, even though the intention of providing these spaces includes improving green-space provision and increasing green cover.

Discussion: overcoming limitations of conventional green-space standards to expand urban greening

Although concepts such as ‘green space’ and ‘urban greening’ increasingly are adopted in planning discourse, participants focused on ‘parks’, a term that is weighted with cultural meaning (Gabriel, 2011). The emphasis on conventional parks underscores conceptualisations of landscape as countryside that pervade British planning discourse (Harrison and Clifford, 2016). A narrower concept of ‘parks’ also signals planning’s tendency to homogenise green-space types (Douglas et al., 2017). This diverts attention from integrating a wider range of green features into approaches to green-space accessibility, even though such green elements can more readily be introduced into growing and changing urban areas.

At the same time, participants also conflated ‘parks’ with ‘open space’, with many referring to ‘parks and open spaces’, despite increasing policy emphasis on terms

such as ‘green infrastructure’ and ‘nature-based solutions’. Yet ‘open space’ obfuscates quantity of green space and the constraints in providing it. Conflating open space and green space also reflects imprecise terminology used in planning policies (Taylor and Hochuli, 2017). While open space and green space have overlapping benefits, the terms are not interchangeable and can conflict. Open space includes impermeable, built surfaces, such as concrete, paving and tarmac found in plazas and hard-surfaced sports facilities (James et al., 2009). Green space, meanwhile, consists largely of permeable, natural surfaces, such as soil, grass, shrubs and trees (James et al., 2009). A concrete public plaza may provide breathing space and a site for social interaction. Yet it would contribute little to environmental sustainability, as paved spaces facilitate the heat-island effect (Norton et al., 2015) and increase surface water runoff and flood vulnerability (Zhang et al., 2012). An urban green space consisting of grass, flowers, plants or trees, however, can enable urban cooling, water filtration and biodiversity (Gill et al., 2007). Given that improving sustainability and mitigating climate change are key policy justifications for urban green space, the distinction between open space and green space matters. Mixing the terms also can impede data accuracy, such as in establishing an inventory of existing vegetated spaces. This can hinder the ability to strategically address issues of unequal access to nature (Feltynowski et al., 2018).

In their daily experiences, residents are more likely to access local green spaces than travel to more distant flagship parks (Wang et al., 2015). Housing amenity spaces often fit this type of local space and can provide health and ecological services, including stormwater drainage, air and water filtration, and opportunities for stress reduction. Yet most participants did not identify housing amenity space as green space. Amenity spaces are not considered green spaces in planning terms, and thus are less likely to be incorporated into planning targets. This neglects a valuable stock of existing green space, compounding pressure to create other – typically conventional – green-space typologies within constrained built-up areas. Further, such green spaces ‘on the doorstep’ can support planning policies aimed at improving public health by increasing overall urban greening through interconnected green infrastructure (Mell, 2016).

This omission can lead to superfluous planning decisions. For example, although a resident may have amenity green space on their doorstep, planning metrics would deem the resident deficient in access if no formally designated open space, such as a park, is nearby. This matters because housing amenity space can constitute a sizeable amount of a city’s greenness, with some London boroughs having more green space on housing estates than in public parks. Indeed, while 5.8 per cent of London consists of parks and gardens, 4.1 per cent is housing amenity space (GiGL, 2019).

Further, a housing amenity space can be larger than a formally designated park. For instance, at least eight amenity spaces in Wandsworth, including the Ashburton Chartfield estate (Figure 3), meet the two-hectare specification for a local park. Yet,



Figure 3 Ashburton Estate amenity space, Wandsworth

because perceptions of green-space accessibility remain focused on parks, the contributions that amenity spaces could make to urban sustainability are minimised.

Similarly, non-traditional spaces, including vertical spaces such as roof gardens, can provide ecological and health benefits (Lee, 2019). Planners increasingly require such green features as a condition of development. Islington's local plan, for example, requires developments to provide vertical greening and green roofs, which are prioritised over other roof uses (Islington Council, 2019). Yet such spaces do not then typically factor into planning metrics, which largely are concerned with conventional green spaces. For example, green-space-per-capita metrics do not account for increasing tree canopy, despite urban greening policies that have led to successful tree-planting initiatives across London and other cities. Although the overall level of greenness in the local environment increases, this is not captured by existing standards and metrics. Thus, as planning processes seek to increase a city's greenness by expanding a range of green elements, planning metrics only account for access to a narrow range of green spaces, skewing data on how green the urban experience is.

This also ignores the reality that, with compact urban development, urban dwellers increasingly spend their days moving through a mix of public and private spaces both on the ground and vertically. Thus private and non-conventional green elements can contribute to how they access and experience a range of green spaces. Focusing on access to conventional spaces also can distort data used by planners and divert resources available to improve areas truly deficient in access to any type of green space. Although non-traditional spaces do not offer all the same uses and benefits as a public park, they can contribute to mitigating the impacts of climate change, fostering biodiversity and other ecosystem services, promoting social interaction and tolerance, and addressing public-health concerns – all of which supports the rationale for greening cities.

Further, favouring large, flagship spaces discounts the reality of increasingly limited opportunities to create accessible green space in densely developed and populated cities. Even if an urban area experiences no net loss of open space, growing population density still leads to declining green space per capita. For example, in 2005, Tower Hamlets adopted its 1.2-hectare-per-1,000-population standard based on the existing amount of open space in the borough (Tower Hamlets Council, 2017). Despite the addition of new open spaces in the borough, by 2016, this had dropped to 0.89 hectare per 1,000 population. To meet its 1.2-hectare standard with projected population increase, Tower Hamlets needs an additional 199 hectares of open space by 2025, more than twice the size of Victoria Park, the borough's largest green space (Tower Hamlets Council, 2017).

Participants expressed frustration with an inability to meet targets given increasing densities. Yet they did not adapt their definitions of green space – or their green-space targets – to fit this changing urban reality, such as by recognising benefits from access to other green elements, like green fences and street trees (Figure 4). Creating large green spaces remains a goal worth pursuing, but is problematic in built-up areas (Haaland and Van den Bosch, 2015). A preoccupation with sizeable and customary green space should not overshadow opportunities to deliver small-scale and non-conventional green spaces that, collectively, can add up to and contribute to a greener experience within the constraints of the compact city.

One pattern that emerged from this research indicates a shift in how green-space accessibility is operationalised in practice. Driven by limitations imposed by long-term density, several participants in Islington – England's densest borough (GLA, 2018a) – addressed a need for accessible green elements other than parks for urban sustainability. As PS23 (council green-space officer) noted, 'there's an element of Islington being the canary in the coal mine.' Indeed, local authorities increasingly have emphasised integration of a broader range of greenery into planning and development, signalling the potential to shift how access to green space is conceptualised.

While providing more vegetated walls, green roofs and street trees is unlikely to dramatically increase quantities of green space, such green features can enhance



Figure 4 Vegetated fences and street trees as interconnected green infrastructure

opportunities for biodiversity, quiet reflection, shading, cooling and more that are beneficial to human and ecological health. Moreover, these elements can increase a city's greenness, including in areas deficient in access to green space and where adding new sizeable parks is unrealistic without removing buildings, which runs counter to densification policies (Norton et al., 2015). They also can serve as green links between existing traditional spaces, thus providing a greener overall experience. Planners should continue to aggressively pursue opportunities for larger parks wherever possible. London's Queen Elizabeth Olympic Park is testament to how – with political will, funding and a significant catalyst in the Olympic Games – creation of a large park is achievable. However, planners also should more readily incorporate better understanding of small-scale green interventions into decisions regarding access to green space, thus alleviating pressure on conventional parks to serve as 'sole providers of greenspace benefits' (Rupprecht et al., 2015, 216–17) in dynamic, growing contemporary cities.

Conclusion

This article has presented lessons for cities that are facing increasing challenges in delivering access to green-space benefits. Embracing a range of types, sizes and uses of vegetated spaces can expand opportunities to increase urban greening and contribute to urban sustainability. This is critical in dense areas, where options for creating new green spaces – even small local parks – can be rare. The benefits of small green spaces in high-density settings, considered to be no more than grass verges in less-dense settings, need to be scrutinised and better understood. Planning practice could better align with policy rhetoric about urban greening by expanding beyond a focus on access to ‘parks’. Instead, incorporating green features in high-density settings, particularly when integrated into an interconnected system of green space, could deliver benefits of green spaces, while challenging traditional notions of ground-level access to green spaces. Indeed, with high-density development, urban life is not lived solely at ground level, and urban greening could be further integrated into vertical urbanisation.

Non-traditional green spaces would not replace the existing network of parks, but could work in tandem with conventional spaces to develop a strategic system of urban greening that is managed to provide multifunctional services. With stretched budgets and limited resources – likely to worsen as a result of the COVID-19 pandemic – local authorities are reluctant to take on management and maintenance of additional green spaces. As many non-conventional green elements already are delivered through private development, often as a condition of planning permission, planning practice should account for such efforts to increase access to urban greening.

Incorporating green, natural elements such as vegetated roofs, street trees and green verges into planning standards and metrics will not eliminate distributional and accessibility deficiencies and inequities. However, by complementing new and existing conventional green spaces, these additional green features could contribute to establishing a greener urban environment that benefits growing cities and the people who live in them. As understanding of the benefits that urban green spaces can deliver continues to evolve, statutes and policies – such as those requiring net biodiversity gain in development or climate-focused tree-planting programmes – are strengthening, as well. Further research is needed to examine the impact such changes have on shifting planning approaches regarding access to the comprehensive benefits that may result.

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