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The conflictive discourse of density in London's planning system

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Density in planning presents a series of conflicts in its use based on how it is defined and perceived. When codified into planning policy, however, it is conflictive due to how it manages strategic and local planning needs and the subjective experiences of density. This article researches the evolution of density policy in London, from the density matrix to the current design-led approach, examining how this conflictive discourse manifests and is resolved within planning practice. Extensive research of planning applications referred to the Mayor of London, known as called-in applications, examine the strategic and local conflicts in a design-led approach. To further inquire on the findings of the extensive research, semi-structured interviews were conducted to design officers across London local authorities to collect their experiences on the practice of density policies and the design-led approach in development management. The results of the planning application research show a tension between design-led approach and a strategic dominance to deliver more housing in London. The design officer interview explains further how this emerges in negotiations and signal into potential solutions. The article presents the deficiencies in density policy and proposes design-led tools to address the limitations of the current approach.

KEYWORDS

density, design policy, density planning, design led approach, density policy, London density, perceived density, London planning

1. Introduction

Planning density in cities has strategic wide mechanisms such as regulatory zoning plans. In the UK, planning follows a discretionary system. This has its benefits and disbenefits: “what is gained in uniformity may be lost in flexibility; rules to prevent the arbitrary may encourage the legalistic; case-by-case adjudication may prevent comprehensive planning; rules that may shield the bureaucrat from pressures and allow the efficient and speedy dispatch of cases, may offend the client who desires individually tailored justice” (Jowell, 1975).

While the UK planning system is rooted in a case-by-case approach, since the first *2004 London Plan*, planning for density has resorted to achieving a degree of consensus via a density matrix. This set values for developments to be acceptable within or outside a density range. The *2021 London Plan*, however, scrapped this density matrix replacing it with a “design-led approach.” This method, rather than referring to bands of values, turns density into a site-by-site assessment which “requires consideration of design options to determine the most appropriate form of development that responds to a site's context and capacity for growth, and existing and planned supporting infrastructure capacity...” (Mayor of London, 2021). This approach has moved density into a fully discretionary domain with design at the center. The design-based negotiations, however, are vulnerable to subjective claims: how and why a given density is defined, negotiated, and implemented? This leads to a conflictive discourse. This article presents research on the efficacy of the “design-led approach.”

The research methodology has three parts: policy research, extensive research on called-in applications, and extensive structured interviews with local authority design officers.

The policy section researches the evolution of density policy and how the conflictive discourse has arisen in policy terms. This section establishes what are the conflicts in density planning policy.

Nineteen called-in applications by the Mayor of London were researched to establish the conflicts arising in the planning process. These applications, while using the density matrix, also applied the “design-led approach” the *2021 London Plan* introduced when assessing and exceeding the matrix. Called-in applications are contentious in balancing strategic and local goals as these developments would impact greatly their contexts while also delivering a high number of new homes. This section presents how conflicts in density are balanced and negotiated within a “design-led approach.”

To establish how design officers manage the objective and subjective aspects of density, semi-structured interviews were conducted with local authorities from across London, from inner and outer boroughs. These interviews delved deeper into the findings of the extensive research and evidenced the practical challenges of managing density using the “design-led approach.” This section questions the efficacy of the “design-led approach” in managing the objective and subjective qualities of density.

The “design-led approach” aims to turn density into a systemically assessed practice, departing from a fixed matrix into a process that acknowledges the nuances of densifying across a variety of changing contexts. In practice, subjective aspects are revealed that compromise this method. Can these conflicts in density planning policy be managed with the “design-led approach?”

The analysis of the extensive research reveals conflicts between strategic and local policy tiers, furthering the need for a consensus to be defined in the absence of the matrix, whether as more complex metrics or typological precedents. This would lead to an understanding of density beyond single numerical values which, due to their simplicity, exacerbate conflict in their interpretation. The article makes a case for the inclusion of the subjective experiences of density to resolve its conflictive discourse. The reform of the “design-led approach” requires an inclusive base on which subjective assessments from all stakeholders can operate, develop, and be resolved, which needs to include aspects of both physical and perceived density.

2. Literature and policy context

2.1. A conflictive definition

Density is a conflictive spatial concept. It has three definitions: measured, physical, and perceived (Alexander, 1993). It is objectively measured as a ratio, such as residential density, occupancy density, floor area ratio, site coverage, or dwellings per hectare. There is no single consensus on a standard, only measures more widely used than others (Cheng, 2009). It is physical in the relationship between building type and density (Dovey, 2016). It is perceived as it is subjectively measured with symbolic and physical aspects of the environment, temporal aspects of activities, and

socio-cultural aspects of actors and settings (Rapoport, 1975). This “perceived density” is informed by physical and social cues, such as space and interaction (Churchman, 1999). These are subjective experiences.

In planning, density manages objective variables, such as building heights and subjective variables like perceived loss of privacy, among others (Boyko and Cooper, 2011). Density thus encompasses both subjective and objective definitions, revolving around sociocultural notions and individual assessments, which themselves are subjective.

2.2. Density in planning practice

Toward the end of the 19th century, the transformation of towns into industrial cities led to an increase in deprivation, with slums in cities sprawling onto the countryside. The history of 20th-century planning represents a reaction to the evils of the 19th century (Hall, 2014). Post-1945, however, with cities very much established as part of an urban/rural tapestry, “problems arose from the 20th-century origin, planning motives became more diverse, more specific and less visionary” (Breheny, 1996 in Burton et al., 1996, p. 14).

This urban dominance led to the emergence of density policies and a discourse that considers the merits of densification in cities. This required the managing of political, economic, environmental, or social externalities. In this context, density in planning is a debate between “de-centrists,” favoring urban decentralization largely as a reaction to the problems of the industrial cities, and “centrists,” those believing in the virtues of high-density cities and decry urban sprawl (Breheny, 1996). As externalities influence density policy change, new points of conflict emerge on the validity of evidence supporting either extreme, polarizing this debate further.

Arguments supporting “centrism” include the benefits of agglomeration for economic growth (Glaeser, 2012), reduction in car use and pollution as transport favors more sustainable way of travel (Newman and Kenworthy, 1989), and supporting sustainable communities in a dense mixed-use setting (Jacobs, 1961). “Centrism” aims to deliver the triple bottom line: economic, social, and environmental sustainability (Holman, 2015). “Centrism” was the basis of the Urban Task Force’s “compact city,” “where people live, work and enjoy leisure time at close quarter” (Rogers, 1999). This approach followed the government’s *1999 Strategy for Sustainable Development*, which itself was a response to the 1978 *UN Brundtland Report*. This hierarchy of strategic policy mandate toward “centrism” has been the main driver for densification in planning.

Outside of official policy, “de-centrists” question the premises of the “centrists” such as the actual evidence base supporting the reduction in transport (Downs, 1994), the effect in the lowering of land value and property prices (Gordon and Richardson, 1997) or whether the population would at all support high-density living (Allen and Blandy, 2004). “De-centrists” advocate for the market to determine densification (Cheshire, 2013) or to have the choice not to live at high density (Senior et al., 2004). Finally, for “de-centrists,” the “compact city” falls prey to an ecological fallacy, environmental determinism, and spatial fetishism (Gleeson, 2012).

In practice, the balance of achieving higher density without losing the quality of life precludes the unbridled advocacy of either of the extremes (Breheny, 1996 in Ibid.). While this “compromising” position is alluring, the bipartisan density debate does not consider sufficiently the influence of subjective experiences and the negative and positive influences on perceived density. Churchman states that “the same density can be perceived and evaluated in very different ways, by different people, under different circumstances, in different cultures and countries” (Churchman, 1999, p.390). Subjective experiences, therefore, underpin the conflictive debate of “centrism” or “de-centrism” as it influences the basis of ideological rejection from either position.

2.3. Subjective experience of density

Human interaction is fraught with psychological and social meaning (Saegert in Baum and Epstein, 1978). Density is “read” or decoded from a set of cues (perceptual, temporal, symbolic, and sociocultural) (Rapoport, 1975). Each cue has a personal point in which “too” high of a given stimulus triggers a psychological stress reaction to a spatial condition (Evans and Cohen, 1987 in Churchman, 1999).

Perceptual and temporal cues respond to “social constraint,” the ability to interact with others; and “spatial restraint,” the ability of a space to restrict movement and threaten physical contact (Taylor, 1981). This triggers a response to either adjust and cope with a spatial and social context or have a negative response. For example, living in high-density conditions people to manage the sense of crowding, which triggers negative stress reactions like withdrawal (Saegert in Taylor, 1981). Symbolic and sociocultural cues can counter an actual perceptual or temporal response. For example, a symbolic space like Grand Central Station, New York City, evokes a sense of crowding, based on sociocultural stereotypes (e.g., “busy as Grand Central Station”), even when not in peak time (Mackintosh et al., 1975).

Saegert links a negative response to density, such as crowding, to an overload of stimulation, information, and decision (Saegert in Mackintosh et al., 1975). This overstimulation can be managed by architectural features (Baum et al., 1975), by building typologies (Dovey, 2016), or by planning areas of varying density to have the choice to experience high-density and low-density environments (Saegert in Dovey, 2016). Socio-culturally, Hong Kong’s high density has been conditioned by planning practice. The city varies its distribution of density (ranging from 780 people per square kilometer in the outlands to 52,000 in the center), increases living space per occupant (from 3.2 to 5 square meters per person), and maintains open land (24% of the land is built) (Cheng, 2009). Design and planning can modulate the variability of coping mechanisms to manage adverse reactions to density.

“Centrists” support a degree of crowding to yield positive economic and social benefits while “de-centrists” sustain that crowding has an impact on health and social cohesion. Stokols makes a distinction between density being a necessary antecedent to crowding and not being a sufficient condition to cause the experience (Stokols, 1972). This is due to the cues that lead to a sense of crowding, which can be reverted by other cues. These are

deeply personal and subjective and not solely causally linked to a high density objective measured metric.

2.4. The conflictive discourse

Density, aside from being objectively measured as people per hectare, also derives from a person’s reaction, influenced by “individual cognitive attributes and socio-cultural norms” (Alexander, 1993, p. 183), which themselves are subjective. This deeply problematizes an application of density without conflicts. The literature divides density into two opposing ideologies, however, in breaking down its definition, a more complex conflictive discourse emerges, which is deeply subjective: density is a conflictive discourse of subjective and objective responses, brought by stimulation and socio-cultural norms, crystallised in bipartisan ideology.

Planning should address managing the subjective and objective cues of density, detaching itself from the bipartisan debate. However, “real-world complexity includes a subjective element that is always present in people’s behaviors, expectations, and attitudes (including those of decisionmakers, planning professionals, and researchers)” (Churchman, 1999, p. 407). Within this subjective framework, planners determine applications, applying density principles set in policy, which are informed by a subjective and objective evidence base. Determinations are also influenced by strategic regional policy, which themselves have an ideological “centrist” or “de-centrist” perspective. The conflictive discourse in planning practice thus operates within conflictive spheres, which affect the final determination of development and how policy is ultimately interpreted.

3. Research method

The methodology has three parts:

1. Density policy research.
2. Research of current planning practice via an extensive study of the 19 called-in applications between 2010 and 2019. This was desk-based.
3. Interviews with four local authority design officers. These were semi-structured interviews.

3.1. Policy research

Density policies from 2004, 2011, 2019, and 2021 London Plan, density reviews, and the Examination in Public (EiP) density debate were researched. The research objective is to identify the conflicts of density in London’s planning policy.

3.2. Extensive research: called-in applications

The research was a document review of the Greater London Authority (GLA) called-in applications. There is a three-stage

process for applications to be called-in: Stage 1 starts when applications are reviewed if they meet the requirement to be called-in; Stage 2 is deciding whether the local planning authority (LPA) makes the decision or whether the GLA calls it in; and Stage 3 is when the Mayor determines the application. The criteria to call-in are met if the development is:

1. over 150 dwellings.
2. taller than 30 m outside the City of London.
3. of strategic importance to meeting the *London Plan*.
4. impacts more than one borough.

These applications were for residential-led schemes across London. Researching them as a group allowed us to map out similarities and differences between the density conflicts arising in their determinations. The desk-based research reviewed the application's Stage 3 reports and LPA Committee reports. The reports' common structure aided in identifying patterns. Each report listed the material considerations (MCs) and its justifications in determination, including GLA reasons for support and LPA grounds for refusal. From this data, tables were drawn to analyse patterns of conflicts. The research objective is to establish how conflicts are negotiated in the current "design-led approach."

3.3. Semi-structured interviews to design officers

Four design officers from four London local authorities were contacted to participate in semi-structured interviews. They all share the same level of seniority and experience working with major applications. The definition of major applications is consistent across these boroughs, as these are set by the Town and Country Planning (Development Management Procedure) (England) Order 2015, being schemes of over 10 dwellinghouses and site is 0.5 hectares or more.

The criteria for selecting these officers were their seniority, geographical location, whether the borough is undertaking substantial regeneration work, and the scale of these developments to match the called-in applications criteria. The boroughs are in north, west, and east London. These ties with the concentration of Opportunity Areas being north of the river.

All the design officers are architects or have had architectural training, allowing them to have a critical understanding of design matters relating to objective and subjective matters of density. The location of the boroughs and the officer's name was anonymised for confidentiality (e.g., Officer A in borough A, etc.).

3.4. Methodology statement

The methodology is mainly extensive. Extensive research focuses on uncovering empirical regularities (Al-Hindi, 2009). The limitation of extensive research is the risk of generalization. While the call-in applications belong to a designated group, it does not give immediate causality, and there is a risk of over-extension, that is, findings of a particular conjuncture applied to the rest of

the system, when in fact it may be unrepresentative (Sayer, 1992). Identified patterns may only be representative of their set but not applicable to broader cases. To counter this limitation, interviews were conducted to enquire further about identified patterns and determine if these can be considered as representative.

An extensive collection of data sets was drawn from determination reports which have the same structure and thought process. This offers a range of data to reveal patterns of decision-making. Their rationale, while discussed, remains limited. To expand on specific findings of tensions in called-in applications, interviews were conducted to design officers, responsible for advising local authorities on large-scale applications and their design considerations. The interviews delve further into the qualitative aspects of decision-making of objective and subjective aspects of density.

This methodology allowed for qualitative data to be analyzed under multiple criteria: examining broad patterns in a wide data set and enquiring further on the practical side of these patterns. For researching density in planning, it is key to assess broad application determinations as well as specific assessments on the ground from the perspective of the design officer.

4. Policy research

4.1. Sustainable residential quality

The first *London Plan* was "centrist"; it promoted the "compact city" to deliver sustainable development (Mayor of London, 2004). The Llewelyn Davies reports devised a strategy for densification that accommodated development while maintaining urban quality and fostering sustainable development (Llewelyn-Davies, 1997). This led to the Sustainable Residential Quality (SRQ) density matrix.

Nine generic London-wide housing typologies were chosen: detached houses, terraced housing, flats, and mixed developments. These "tiles" were used on capacity studies for 24 typical sites. The studies were categorized into "settings", informed by planning and site characteristics: level of affordable housing, social infrastructure, built form, urban grain, and accessibility. Three "settings" were defined (central, urban, and suburban) and ranked according to location. The setting is "the established urban grain and character of the place" (Llewelyn-Davies, 2000, p. 42) and location refers to accessibility to "ped-sheds," notionally located 800 m away from a town center. PTAL was used as the accessibility index. These "settings" were assigned a density range and car parking capacity (informed from the tile studies) and tabled according to location. The result was the density matrix.

The matrix did not preclude further analysis on a case-by-case basis. The report stated: "the more analysis which is given to an individual site in terms of its character, the requirements for non-residential uses and the appropriate form of development, the more accurate the estimate is likely to be" (Llewelyn-Davies, 2000, p.113). Thus, the "tile-based" "design-led approach" was both strategic and site-specific: the matrix abstracts typical typologies applied on typical sites via design tests for reference and equally encourages contextual analysis to validate the matrix estimates.

4.2. Density matrix reviews

The 2006 URS-Patel Taylor report reviewed how LPAs implemented the matrix. The notion of settings was questioned due to their site-specific prescription being perceived as exceeding strategic planning powers (Mayor of London and Greater London Authority, 2006). PTAL was questioned as a reliable metric as sites with low PTAL had connectivity to employment areas, particularly in East London: a lower density was prescribed when a higher one was possible (Mayor of London and Greater London Authority, 2006). Development was exceeding the matrix ranges as it was planned for future PTAL ratings. Finally, habitable rooms per hectare were recommended to provide a direct link between housing requirements and the appropriate density and disassociate linking housing typology with densities (Mayor of London and Greater London Authority, 2006). The matrix was simplified, removing parking and location and adding habitable rooms per hectare in the density range. The review focused on setting and PTAL as driving factors, departing partially from the “tile-based” “design-led approach.”

The 2012 *Housing Density Study* questioned the use of crude metrics in density policy, describing density as being about “everything and nothing” (Maccreanor Lavington Architects, Emily Greeves Architects, Graham Harrington Planning Advice, 2012, p. 8). Density was deemed unclear for “focusing on both the managing of activity and demand and the managing of scale and massing,” recommending instead that it “should focus on activity and demand exclusively” (Maccreanor Lavington Architects, Emily Greeves Architects, Graham Harrington Planning Advice, 2012, p.173). This focus on the capacity side, activity, and demand marked a departure from density focusing in the perceptual. This aligned density with the 2011 *London Plan* discourse of optimizing land use. This alignment started the turn of density policy to focus on capacity and away from a number-based matrix and the subjective experiences of density.

4.3. Current density policy

The 2016 *London Plan* Policy 3.4 “Optimizing housing potential” defined density with the 2008 SRQ density matrix, the *Strategic Housing Land Availability Assessment* (SHLAA), and the negotiations of material considerations (MC) between the applicant and LPA. These were impacting on local context, design, character, connectivity, land-use, housing mix, amenity, planning contribution, and viability (Mayor of London, 2019a).

The matrix’s “settings” were given a density range set in habitable rooms per hectare (hr/he) and units per hectare (u/he) and PTAL ratings (0 to 6) referred to connectivity. The *Housing SPG*, which guided the implementation of density policies, considered the matrix as a starting point “rather than an absolute rule so as to take proper account of other objectives, especially for dwelling mix, environmental and social infrastructure, local character and context, together with other local circumstances, such as improvement to transport and accessibility” (Mayor of London, 2016, p. 44). This maintained the essence of the Llewelyn Davies “design-led approach.” The addition is the SHLAA, which represented both PTAL ratings and setting location spatially.

4.4. Current density reform

In 2016, the GLA commissioned consultancies to prepare density reports to provide evidence and inform the drafting of the NLP.

LSE concluded that the matrix is not enforced and questioned if an equivalent could provide a basis for estimating capacity to meet projected housing demand (Gordon et al., 2016). Schemes have gone above range in 60% of the cases from 2006 to 2014 (Gordon et al., 2016). This trend was first observed in the 2006 review. Three Dragons covered living in higher density development, reviewing issues such as loss of light, privacy, and amenity, and service management. The report maintains that there were no systemic problems with high-density schemes, provided they were well-planned from the outset (Three Dragons, 2016). This reinforced that design and building management can manage the subjective experience of density. The Historic England Report called for a nuanced understanding of local character to reflect London’s current development landscape, moving beyond the oversimplification of three “settings” (Allies and Morrison, 2015). This criticized the oversimplification of the “tile-based” Llewelyn Davies design exercise, which produced the matrix.

Arup proposed abstracting the “settings” and referring to them in neutral terms (A, B, and C). This gave a stronger focus on the built-form characteristics and not on location (Arup, 2016, p. 28). It also recommended, “removing density as a characteristic of setting” but retaining “built form characteristics, land-use, typology, building footprint and height, as they are clear, well understood and less susceptible to varying individual interpretations” (Allies and Morrison, 2015, p. 27–28). This continued the departure from a number-based matrix. However, it is recommended as an alternative to incorporate urban design criteria, such as typology, to inform a contextual assessment. The report underplayed the role of the matrix and supported an updated and more specific “tile-based” approach.

The reports found that LPAs laxly implemented the matrix and over-simplified a changing London context; however, density could be defined via contextual assessment and managed by design. The matrix was seen as “appropriate at the time it was first introduced—which was in a lower density/lower rise era but hides as much as it helps in the current environment” (Gordon et al., 2016; p.48).

4.5. 2021 London plan’s “design-led approach”

The 2018 *Draft New London Plan* scrapped the matrix and proposed the “design-led approach” on a site-by-site basis as its replacement: Policy D6 “Optimizing Housing Density” (Mayor of London, 2019a). The proposals were debated by the GLA’s Planning Committee and during the EIP.

At the Planning Committee, LPAs considered the matrix being used to set a starting point for density discussions, especially as it provided support when decisions were challenged at appeal (LBs Westminster and Ealing) (London Assembly, 2018). The concerns were that the matrix is not reflecting the density requirements of new town centers in outer London (LB Hounslow) or emerging sites, such as Old Oak (OPDC) (London Assembly,

2018). Exceeding the matrix was seen as encouraging developers to maximize units and not deliver housing that meets local needs (Duncan Bowie) (London Assembly, 2018). A reformed matrix was preferred by the Assembly, which warned of the need for a robust replacement if it was discarded (David Levitt) (London Assembly, 2018).

At the EiP, the London Forum described the risk of black-boxing density negotiations in pre-application discussions. In a “design-led approach,” this excluded communities (Greater London Authority, 2019a). Just Space, a grassroots campaign group, called for the normalization of community engagement (Greater London Authority, 2019a). CPRE highlighted the absence of a role for neighborhood planning to resolve tensions (Greater London Authority, 2019b). Just Space criticized how negotiating density and viability results in lower planning contributions, becoming a commonplace practice in schemes that exceeded the matrix (Greater London Authority, 2019b). Duncan Bowie, the architect of the original density matrix, was critical that the non-application of the matrix should not mean its dissolution, but rather its enforcement (Greater London Authority, 2019a).

Following the EiP, the consolidated 2019 Draft New London Plan dropped the matrix and updated the density policies: D1 “London’s form, character and capacity for growth,” and D2 “Delivering good design” (Mayor of London, 2019b). The final publication of the 2021 London Plan further revised these policies into a three-step policy approach: D1, London’s form, character, and capacity for growth; D2, infrastructure requirements for sustainable densities; and D3, Optimizing site capacity through the design-led approach (Mayor of London, 2021). This trio of policies set the criteria of having setting, infrastructure, and design as the optimisation calibers for growth. The optimisation discourse continued to be the starting point in density, as stated in policy GG2 BA “Making the best use of land.” A housing LPG draft has been published advising how the “design-led approach” is to be implemented.

The GLA remained critical of a density matrix and the limitations of the number-based format: “The number is just the output and if you start with it as the input you won’t end up with the right development as all sites are unique and require other variables to consider” (Greater London Authority, 2019a). The GLA supported the “design-led approach” as it developed sites suitable for different capacities as numbers do not reflect height, scale, or response to setting (Greater London Authority, 2019a). This expanded the Llewelyn-Davies “tile-based” approach, from a typical set to create a consensual strategic guide into individual negotiations.

4.6. Conflictive discourse within the “design-led approach”

The density policy review reveals the conflicting viewpoints from stakeholders and practitioners. On the one hand, density policy should meet housing targets, and on the other, density policy does not adequately address housing needs and the impact of densification on communities. This is the conflictive discourse manifesting in planning practice. This reflects Churchman’s view

on the real-world complexity of applying density in planning. Both viewpoints are necessary for managing London’s sustainable growth and housing demand.

The “design-led approach” allows inclusive practice among professionals, community, and developers; however, the strategic void is filled by an undercurrent supporting densification, embedded in the London Plan “centrist” ideology. There is a strategic dominance for densification influencing decision-making on the ground. This dominance is embedded in the decision-making of acceptable densities within a “design-led approach.” This is the main conflict in London’s density policy.

The current “design-led approach” leaves the field open to conflicts of subjective interpretation, as the density debates around the 2021 London Plan examination have shown. The effective management of socio-cultural cues to the community’s subjective experience, developer’s expectation for development, and strategic goals of housing delivery to meet future growth rely on a policy that encourages persuasiveness, where LPA teams debate against well-resourced private consultants. On the ground, it would lead to conflicts between “centrist’s and “de-centrist’s negotiating housing delivery, potentially having sites not meet their potential, compounding development pressure onto other boroughs. Without the matrix, a framework is absent that guarantees the management of delivering strategic goals and local needs. Finally, the London Plan’s examination revealed a risk of black-boxing brought about by discussions to define density which excludes community participation, reducing their agency and concerns about their subjective experiences to inform an ever-denser context.

The revealed conflicts are the strategic dominance, subjective assessments of density, and officers’ abilities to manage the subjective experience of density with objective requirements.

5. Extensive research: archives

5.1. Called-in applications

This section explores how the conflicts of density policy are negotiated in the “design-led approach” using the density matrix. The applications were not determined with the adopted 2021 London Plan. The sample of applications was called-in residential-led schemes across London (Figure 1). Table 1 shows the MCs which the GLA Stage 3 Committee Reports used to determine applications. The type of evidence used to decide each MC is listed as either objective or subjective type. This reveals the conflict of the following:

1. Subjective assessments of MCs.

Table 2 shows the discrepancy between the target and proposed density. The reasons for refusal from the LPA and approval from the GLA are also presented, showing further divergences between refusal and approval. Table 3 shows LPA and GLA decisions on amenity MCs, showing a complete reversal of the decision from the LPA and the GLA. The tables reveal conflicts of the following:

2. Varying interpretation of MCs between LPA and GLA.

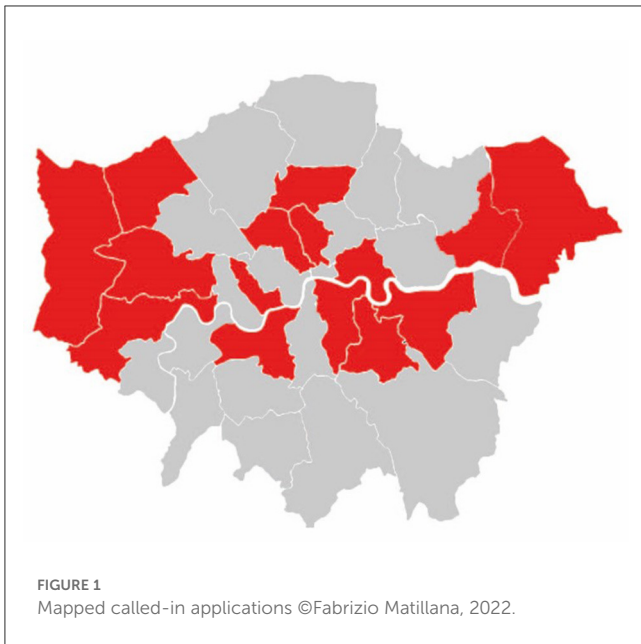


Table 4 shows the discrepancy between housing targets in terms of tenure split and affordable housing contribution. Growth areas are also listed to highlight their strategic importance. The conflict is the following:

3. Local targets against strategic targets.

Table 5 shows how applications were determined by the LPA and the GLA. The GLA approvals reveal a conflict of strategic policy overriding local decision-making. There were conflicts of planning balance and policy interpretation with political imperatives at local and regional levels. This is evident where the LPA's officers refused an application under delegated powers, yet is overturned by the GLA or when the application was called-in before a Planning Committee for decision. The absence of the community group's influence over the final GLA outcome evidenced black-boxing of decision-making and an imbalance between the weight of subjective experience from the community, which informed their objections, and an objective need to meet targets. These processes reveal three conflicts:

4. Strategic dominance over local decision-making.
5. Political decision-making overriding LPA and in conflict with GLA.
6. Objective need over subjective experience.

5.2. Extensive analysis

Table 1 shows the MCs which determine applications. MCs are either assessed with objective data, such as compliance with daylight/sunlight levels, or subjective data, such as determining if harm is "less than substantial" (Ministry of Housing, Communities and Local Government, 2019a, p. 55). While MCs are fundamentally determined on objective, quantifiable data (5

out of 8 MCs are decided on objective data), subjective MCs such as design quality, amenity, and housing significantly influence density and development capacity. This is conflict 1: subjective and objective assessments. Overdevelopment is tested in terms of context (subjective), design quality (subjective), and density range (objective). The value assigned to each MC informing a decision is the conflictive discourse in action.

Tables 2, 3 show conflict 2: varying subjective assessments from LPA to GLA. In Hale Wharf, the LPA refused the application on height, massing, and quality MCs, yet the GLA resolved that "the significance of the degree of change does not necessarily indicate that the proposals are harmful" (Greater London Authority, 2017; Mayor of London, 2017, p. 58). In Alpha Square, the GLA acknowledged the LPA South Quay policy to transition from Canary Wharf to low-rise residential areas to the south. However, the range of 34–65 stories of the application is related to the tall cluster as its context, which the GLA accepted (Greater London Authority, 2016). This undermined the LPA determination which was critical of the proposed height. While there was design development from the point of LPA refusal to a GLA decision, resolving some points of conflict, in some cases, the LPA's original objections remained unaddressed. The Citroen Site LPA refusal on height and mass/bulk, which was decided by the 12 tests in the Hounslow Local Policy, was overturned by the GLA's assessment (Greater London Authority, 2018a). Hounslow maintained that the refusal "reasons have not been overcome by the submitted amendments" (Greater London Authority, 2018a, p.27). In these cases, the value given to an MC differed between local and strategic decision-makers, impacting a design-led assessment of density.

In the case of density, targets are exceeded in 11 of 19 applications. The related MCs are design and impact on amenities. These are both subjective and objectively determined. How these MCs are interpreted to favor a strategic goal over a local matter is conflict 2. While there was design development, in all cases, the development capacity was never reduced, resulting in applications justifying schemes as not being over-developed. Exceeding the density became the starting point. Communities that opposed the schemes felt threatened by overdevelopment, impacting their subjective experiences of density, such as loss of amenities and crowding. These subjective matters are meant to be mitigated by design quality, which does not address the cause of these negative stimuli.

In Convoys Wharf, the GLA concluded that high densities were acceptable due to the high-quality design of residential units, design compensating amenity impact, and open space availability (Greater London Authority, 2014a). The notion of high-quality design mitigating density is conflictive due to the subjective viewpoint of quality. In Eynsham Drive, overlooking was the LPA's MC for refusal; 18–21 m distance between dwellings is a measure to ascertain this. The GLA, referencing the Housing SPG, pointed out that "adhering rigidly to these measures can limit the variety of urban spaces and housing types in the city, and can sometimes unnecessarily restrict density" (Greater London Authority, 2018d, p. 34). This turned an objective decision on amenities, based on metrics, into a subjective assessment to justify development. While the cues that incite crowding, like overlooking, are subjective and the literature review discussed how planning and design can mitigate these, the conflictive determination between LPA and

TABLE 1 Material considerations.

Land use				Housing			Design					Amenity			
Local plan	SPD	AAP	Use mix	Maximum affordable	Tenure split	Mix of units	Over develop	Height	Massing bulk	Quality	Context character	Visual setting	Open space	Over looking	Daylight sunlight
Location tested (Plan)	Location tested (Plan)	Location tested (Plan)	Location tested (Plan)	Target tested (%)	Target tested (%)	Context tested (opinion)	Context tested (opinion)	LVMF tested (opinion)	Context tested (opinion)	Context tested (opinion)	Context tested (opinion)	Context tested (opinion)	Design tested (opinion)	Model tested (evidence)	Target tested (%)
			Target tested (%)	Viability Tested (£)	Viability tested (£)	Target tested (%)	Design tested (opinion)	Design tested (opinion)	Design tested (opinion)	Design tested (opinion)	Design tested (opinion)	Design tested (opinion)	Target tested (%)	Distance tested (m)	Light tested (lux)
			Stock tested (units)		Stock tested (units)	Viability tested (£)	Matrix tested (u/he)	Location tested (Plan)	Amenity tested (see Amenity)		Harm tested (opinion)	LVMF Tested (opinion)			
						Stock tested (units)		Amenity tested (see Amenity)			Amenity tested (see Amenity)	Harm tested (opinion)			
Infrastructure				Transport			Sustainability					Environmental			
School	GPS	Public facilities	Public realm	Car parking	Sustain. trans.	Highway impact	Reduce CO2	Energy efficiency	Renew sources	SUDS	Ecology	Micro climate	Air quality	Polluted land	Waste
Location tested (Plan)	Location tested (Plan)	Location tested (Plan)	Location tested (Plan)	Target tested (%)	Target tested (%)	Model tested (report)	Target tested (%)	Target tested (%)	Target tested (%)	Model tested (report)	Survey tested (report)	Model tested (report)	Target tested (%)	Target tested (%)	Target tested (%)
Needs tested (sqm)	Needs tested (sqm)	Needs tested (sqm)	Needs tested (sqm)	Plan tested (report)	Plan tested (report)		Design tested (opinion)	Design tested (opinion)	Design tested (opinion)	Design tested (opinion)	Design tested (opinion)	Mitigate tested (report)	Model tested (report)	Model tested (report)	Model tested (report)
													Mitigate tested (report)	Mitigate tested (report)	Mitigate tested (report)

Subjective/Objective.

TABLE 2 Density.

Called-in application	Density range	Proposed density	LPA					GLA				
			Stated refusal					Stated approval				
			Over develop	Height	Massing bulk	Quality	Context character	Over develop	Height	Massing bulk	Quality	Context character
1. Southhall gasworks	200–450 h/he	200–450 h/he		X	X			X	X	X	X	X
2. Saatchi block	300–650 h/he	N/A	X	X	X		X	X	X	X	X	X
3. Eileen house	650–1,100 h/he	1,779 h/he	X			X		X			X	
4. Convoys wharf	200–450 h/he	585 h/he		X	X		X	X	X	X	X	X
5. Mount pleasant	650–1,100 h/he	900 h/he		X		X	X	X	X	X	X	X
6. City forum	650–1,100 h/he	1,533 h/he						X	X		X	
7. Westferry printworks	200–650 h/he	433 h/he						X	X	X	X	X
8. Putney high street	650–1,100 h/he	1,068 h/he		X	X	X		X	X	X	X	
9. Trocoll house	140–405 h/he	1,133 h/he				X	X	X		X	X	X
10. Blossom street	650–1,100 h/he	N/A	X	X	X			X		X	X	X
11. Alpha square	650–1,100 h/he	4,712 h/he	X	X				X	X		X	X
12. Palmerston road	200–700 h/he	720 h/he	X	X				X	X	X	X	X
13. Hale wharf	200–700 h/he	772 h/he		X	X	X		X	X	X	X	X
14. Swandon way	650–1,100 h/he	1,078 h/he		X	X			X	X	X	X	X
15. Citroen site	200–700 h/he	1,273 h/he		X	X		X	X	X	X	X	
16. Beam park	150–200 h/he	322 h/he		X			X	X	X	X	X	
17. Newcome house	200–700 h/he	665 h/he		X		X	X	X	X	X	X	X
18. Eynsham drive	200–700 h/he	1,373 h/he	X	X	X		X	X	X	X	X	X
19. VIP trading estate	200–700 h/he	827 h/he	X	X				X	X	X	X	X

1,200: over target.

1,200: below target.

TABLE 3 Amenity.

Called-in application	LPA				GLA			
	Stated refusal				Stated refusal			
	Visual setting	Open space	Over looking	Daylight sunlight	Visual setting	Open space	Over looking	Daylight sunlight
1. Southhall gasworks	X				X	X	X	X
2. Saatchi block	X	X			X	X	X	X
3. Eileen house		X			X	X	X	X
4. Convoys wharf				X	X	X	X	X
5. Mount pleasant	X		X	X	X	X	X	X
6. City forum								
7. Westferry printworks								
8. Putney high street								
9. Trocoll house	X	X			X	X	X	X
10. Blossom street								
11. Alpha square		X		X	X	X	X	X
12. Palmerston road	X			X	X	X	X	X
13. Hale wharf	X	X			X	X	X	X
14. Swandon way	X				X	X	X	X
15. Citroen site								
16. Beam park								
17. Newcome house	X				X	X	X	X
18. Eynsham dive		X	X	X	X	X	X	X
19. VIP trading estate	X		X	X	X	X	X	X

X: Yes; X: No.

GLA does not acknowledge this. Instead, it reinforces the strategic dominance of a target-led culture.

Conflict 3 focuses on strategic dominance overriding local housing targets in favor of strategic goals. Table 4 shows 10 applications not complying with the tenure split and 13 applications not complying with the affordable housing target. In Beam Park, the justification for not meeting affordable housing targets was that the scheme “provides a significant amount of new family housing and was considered acceptable” (Greater London Authority, 2018b, p. 50) by the LPAs. For Saatchi Block, an independent assessment confirmed that meeting policy, in addition to meeting Crossrail contributions, was not possible in the given setting (Greater London Authority, 2012). In City Forum, the GLA negotiated below-target affordable housing contribution contingent on not having a review mechanism (Greater London Authority, 2014b). The table shows that all applications belonged to a strategic growth zone (e.g., opportunity area, town center, etc.) which promoted densification. In the case of Eynsham Drive, while the scheme was not in a designated area for tall buildings, it is in an OA, paired with a changing immediate context with consented tall schemes, “suggests that taller buildings could nonetheless be appropriate on this site” (Greater London Authority, 2018d, p. 38). This shows how policy and contextual assessment were used to

determine in favor of densification, irrespective of actual policy targets or spatial designations.

Viability and housing targets undermined the LPA’s ability to negotiate schemes that addressed local housing needs, tenure split, and affordable housing contributions. In Beam Park, the GLA supported the development on the principle that the scheme delivers 96% of the yearly housing target and 9.6% of the 10-year target (Greater London Authority, 2018b). The scheme did not meet affordable housing or tenure split targets. In Newcome House, the GLA stated that “the proposed quantum of affordable units equal 66% of the total number of affordable units approved in the last three financial years” (Greater London Authority, 2018c, p. 34). This statement criticized the LPA’s record on housing delivery and weakened its objection to the scheme on height issues, as this did not assist in meeting targets. In this case, the GLA target-led approach openly undermined local decision-making.

Table 5 highlights the strategic dominance within the political process, despite different determinations and opposing community responses: the GLA in 18 cases had approved the applications. Conflict 4 is the dominance of GLA decisions over LPAs. Conflict 5 is how local Planning Committees went against officers’ recommendations and refused schemes. In doing so, reasons for

TABLE 4 Housing.

Called-in application	Local level - lpa					Strategic level - gla	
	Proposed units	Target tenure split	Proposed tenure split	Affordable housing target	Affordable housing proposed at application	Affordable Housing proposed at called-in	Strategic growth area
1. Southhall gasworks	3,750	60 (S):40 (I)	50 (S):50 (I)	50%	20%	30%	OA/TC
2. Saatchi block	55	60 (S):40 (I)	66 (S):33 (I)	Negotiated	27%	27%	CAZ/TC
3. Eileen house	335	50 (S):50 (I)	0 (S):100 (I)	35%	35%	35%	OA/TC
4. Convoys wharf	3,500	70 (S, A):30 (I)	30 (A):70 (I)	50%	15%	15%	OA
5. Mount pleasant	681	70 (S):30 (I)	60 (S):40 (I)	50%	20%	23.9%	IA/CAZ
6. City forum	995	60 (S):40 (I)	63 (A):37 (SO)	50%	30%	30%	CAZ
7. Westferry printworks	722	70 (S):30 (I)	71 (S):29 (I)	35–50%	11%	20%	OA/TC
8. Putney high street	97	50 (S):50 (I)	0 (S):100 (I)	50%	20%	20%	TC
9. Trocoll house	198	60 (S):40 (I)	0 (S):0 (I)	N/A	0%	0%	OA/TC/HZ
10. Blossom street	40	70 (S, A):30 (I)	74 (S):36 (I)	35–50%	27%	30%	OA/CAZ/TC
11. Alpha square	634	70 (S, A):30 (I)	78 (S):22 (I)	35–50%	25%	25%	OA/CAZ/TC
12. Palmerston road	186	67 (S):40 (I)	33 (A):67 (SO)	40%	40%	40%	OA/HZ/TC
13. Hale wharf	249	60 (S, A):40 (I)	60 (A):40 (I)	50%	30%	35%	OA/HZ/TC
14. Swandon way	385	50 (S):50 (I)	60 (A):40 (I)	33–50%	25%	35%	OA/HZ/TC
15. Citroen site	441	60 (S,A):40 (I)	35 (A):65 (I)	40%	40%	49%	OA
16. Beam park	3,000	70 (S):30 (I)	20 (A):80 (SO)	50%	35%	50%	OA/HZ/TC
17. Newcome house	55	50 (S):50 (I)	51 (A):49 (I)	35–50%	17%	27%	TC
18. Eynsham drive	272	70 (S, A):30 (I)	70 (A):30 (I)	35%	35%	35%	OA/HZ
19. Vip trading estate	771	70 (S, A):30 (I)	62 (A):38 (I)	50%	16%	40%	OA

OA, Opportunity Area; CAZ, Central Activity Zone; TC, Town Center; IA, Intensification Area; HZ, Housing Zone; 35%: over target; 35%, under target.

TABLE 5 The planning process.

Called-in application	Mayor	LPA		Neighbors	GLA
		Officer recommendation	Committee decision	Community response	Mayor decision
1. Southhall gasworks	Johnson	X	X	X	X
2. Saatchi block		X	X	X	X
3. Eileen house		X	X	X	X
4. Convoys wharf		X	X	X	X
5. Mount pleasant		X	X	X	X
6. City forum		X	X	X	X
7. Westferry printworks		X	X	X	X
8. Putney high street		X	X	X	X
9. Trocoll house		X	X	X	X
10. Blossom street		X	X	X	X
11. Alpha square		X	X	X	X
12. Palmerston road	Khan	X	X	X	X
13. Hale wharf		X	X	X	X
14. Swandon way		X	X	X	X
15. Citroen site		X	X	X	X
16. Beam park		X	X	X	X
17. Newcome house		X	X	X	X
18. Eynsham drive		X	X	X	X
19. VIP trading estate		X	X	X	X

X, Approved; X, Refused; X, Called-in; X, Delegated.

refusal would be contrary to the officer's recommendation and then overturned by GLA officer's, validating the LPA officer's original advice. Thirteen schemes were recommended for approval and overturned by the Planning Committee. This conflict of officer and elected official problematizes the implementation of policies due to political influence, broadening even further the conflictive subjective assessments.

Finally, conflict 6 is the objective need over subjective experience. Community responses ranged from impact on amenity, crowding, and overlooking, which were within the subjective experience of density. They were critical of the policy not being implemented. In VIP Trading Estate, all local amenities and resident groups cited that the scheme departed from the *Charlton Riverside Supplementary Policy Document (SPD)* (Greater London Authority, 2019b). LPA and GLA officers argued that the scheme was acceptable, yet both LPA Committee and the Mayor finally resolved it was not compliant. While the result supported the community, this came from a conflict between LPA and GLA offering contrary advice. In the case of Blossom Street and Mount Pleasant, a community response presented alternative schemes to support their interpretation of policy and objections to the impact on subjective experience. This was meant to resolve the consultation impasse between the applicant and the community. In both cases, the GLA's determination favored the objective need for housing, supporting the applicant.

The "design-led approach" as employed with the density matrix has been skewed in favor of a GLA strategic dominance prioritizing housing delivery. The MCs which addressed density and its impact on people, in practice, were influenced by the need to deliver targets. This justified exceeding compliant density ranges, at times under-delivering on affordable housing, irrespective of the impact on the subjective experience of the density of the local community. All MCs were interpreted in favor of outcomes that would secure the high-density schemes, irrespective of LPA or community opposition.

The "design-led approach" has led to the weakening of a consensus across stakeholders on which decisions are negotiated. Discussing its efficacy with design officers, who assess schemes for the LPA, gives further insight into the limitation of the current approach.

6. Extensive research: interviews

6.1. Design officers' interviews

The interviews of the design officers covered the following topics: managing density, working with the 2021 *London Plan* density policies (D1, D2, D3)¹, objective and subjective design metrics, and efficacy of design policies.

In terms of managing density, design offices are following the *London Plan's* design-led and plan-led approach to identifying

capacity for growth with characterization maps (Policy D1). In addition, another approach shared by all officers was the use of Site Allocations. While these two approaches are meant to be objective in defining a consensual density figure, and the replacement to what the density matrix previously offered, officers considered this as still a "starting point," not an end point. Officer B stated: "an applicant will still come with whatever density they want, and then we will negotiate (Interviewee Design Officer, 2022b)." Officer D stated that they use a combination of policies and plans, although some areas do not have the plan to support a discussion. Officer C was critical of this frontloading of work "...as we just don't have these maps yet (Interviewee Design Officer, 2022c)." Officer A considered it as still "a bit informal."

While officers stated that allocation plans identified density targets, viability was repeatedly mentioned as the key driver of density discussions. It is mentioned early in negotiations, which, according to Officer B, should not be the case as it undermines the "design-led approach." Tackling viability also puts design officers at a disadvantage as they do not have the training to pushback developers, as stated by Officer A. Officer C stated that "with build to rent schemes there is a minimum unit count to hit. A "design-led approach" optimisation of that site wouldn't have reached the proposed number of homes considering contextual constraints. Viability led that starting point and that number hasn't budged since, resulting in a tall building in an area not characterized with any. That hard limit essentially has only led to slight tweaks of massing (Interviewee Design Officer, 2022c)." Whether planning departments challenge this positioning is also impacted by the political attitude of boroughs, which, Officer B stated, has a development thrust working at the background at a high level. This reveals a borough-level strategic dominance, despite having to follow a "design-led approach" in higher tiered policy such as the *London Plan*.

Officer C stated that the concepts of "optimisation vs maximization are good in negotiations. It asks the applicant why they are trying to get that maximum extrusion. This is challenged with a Design Review Panel which helps in optimizing, not maximizing (Interviewee Design Officer, 2022c)." A counter to the strategic dominance could therefore be a consistent challenge of over-development by design review, closely aligned with design officer input during the development management process. This would require an effective Design Review Panel and design officers able to undertake these negotiations.

In terms of the *London Plan's* density policies, all officers agreed on the efficacy of D1 and D2 in establishing where development should take place. The bulk of pre-app negotiations revolves around D3.

Officer C explained how D3 is used to: "Typically, the objective argument for viability dominates the subjective argument for design. As a result, you end up with a very efficient layout, but with a large expanse of flat elevation, for example. Here D3 is useful to challenge viability, setting the right number of homes to a context (Interviewee Design Officer, 2022d)." Officer A, however, challenged whether D3 goes far enough: "A lot is focused on quality of accommodation, which has detailed guidance on, but not on amenity space. There is no standard on communal amenity space, like there is with private amenity (Interviewee Design Officer,

¹ D1: London's form, character, and capacity for growth, D2: Infrastructure requirements for sustainable densities, D3: Optimizing site capacity through the design-led approach.

2022a).” Officer D stated that the more design-led SPD documents are available, the better it is to define consensual points.

There is a tension between the three policies. Officer C stated that the principle of D1 in plan-making is useful; however, it requires characterization work to be frontloaded: “In an ideal world it would be amazing for all the sites to have work so that we know what a rough idea of what could be developed, in design terms (Interviewee Design Officer, 2022c).” Officer A, on the other hand, stated that in a suburban setting, D2 is used more: “The character is low density, but you will get Transport for London pushing denser schemes on grounds of adjacency to stations. The quantum need is understandable, but I question if outer London is the right location. Those station sites are being rejected by the Council, appealed, and dismissed. There is not enough weight given to character of context, despite the “design-led approach” requiring this. The station as an enabler alone is not enough (Interviewee Design Officer, 2022a).” Officer B noted that the conflict with D3 comes in the tension from a strategic level target from D1 but then it is contested at pre-application, where D3 comes to the fore. Officer D shared that this tension is resolved by having a well-resourced Design and Conservation team, capable of challenging the schemes coming in. Resourcing to prepare characterization maps and having design officers able to interpret and negotiate high-quality schemes are required for effective control of density policies.

In terms of design metrics, such as lux levels, urban greening factors, and overlooking distances, all officers agreed that they were valuable tools to advocate for high-quality high-density schemes and give “teeth” to officers’ pushback, particularly height and daylight/sunlight metrics. Officer B highlighted the lack of metrics for communal open space, relying instead on play spaces as a vicarious metric that does not consider adult open areas. Officer C did consider the metrics to be “reductive as they don’t paint the whole design picture (Interviewee Design Officer, 2022c).” Officer D mentioned that metrics have a performative aspect that is visual, such as heat maps and CFD modeling offering comparative assessment, and with software like Vu.City, it is possible to achieve an established benchmark to build consensus in negotiations. Officer B mentioned how it is “hard to translate these negotiations to Committee Members. It is easier to have the objective metrics. They will understand but won’t be able to break down points into discrete design ones. Often it is a matter of ‘It looks out of place, big or ugly’ (Interviewee Design Officer, 2022b).” Despite technical guidance and software aiding visualizing the impact of developments, there is an aspect of density management at decision-making stage impacted by density’s cultural subjectivity.

Officers agreed that the *National Design Guide* (NDG) accompanying the *NPPF 2021* revision and *London Plan Housing LPGs* have given certainty in defining good design, giving more clarity to urban design concepts traditionally perceived as subjective. Officer B stated that relying on subjective concepts can often be limited as they are not fully referenced in guidance. Despite having new guidance, officers are pursuing more complex design discussions. Officer C highlighted how they use a typology library that complies with borough and *London Plan* policy, e.g., perimeter blocks and gallery access to meet 100% dual aspect requirement. Officer B used type as a concept in negotiations, however, “the discussion comes after density and more as a point

of defining character, which is easier to visualize rather than density figures alone (Interviewee Design Officer, 2022b).” Officer D highlighted that there is a subjective side to precedent review as it comes from a personal professional preference, however, sees its benefit as part of a process of negotiation. All officers agreed that precedents are useful to present examples of high-quality design and translate those subjective definitions into practical examples. The ease of using precedents as negotiation tools comes from their architectural training allowing them to make the linkages of metrics and projects into advice to shape a place. The policy framework, to define a shared consensus, mostly sets a base standard with design metrics. In practice, however, design officers confirm developer’s routinely surpassing this base.

The last question was whether density as a concept could effectively be managed by design policy. All Officers agreed that it is possible, but there are limitations in the current system. Officer A mentioned that “metrics are useful but are broad brushes to complex issues of housing targets, viability, and personal subjectivities of an idea of a place. Current metrics allow tapering of massing, height, frontages, but nothing major. To address this, design codes and masterplans would help in setting out a strategic vision for stakeholders to sign up to (Interviewee Design Officer, 2022a).” Officer B stated that the current tools are only as good as the officer employing them to inform high-quality places: “You can’t just *do* high quality design with metrics. It is the distribution of density, orientation, connectivity, a careful orchestration (Interviewee Design Officer, 2022a).” Officer D speculated what would be an alternative: “A zonal approach? This can already be achieved with design codes; parameter plans and rigorous metrics (Interviewee Design Officer, 2022d).”

Despite the many recent design guidance aiming to establish a shared understanding of design concepts to deliver high-quality places, the application of policies, design tools, and professionals charged to interpret them remains inconsistent. The design officer’s experience using the *London Plan*’s “design-led approach” show that the same tensions present using the density matrix remain. This shows a deeper conflict than whether a matrix or a site-by-site approach can resolve. The subjective side of density in current density policy remains unaddressed and potentially offers routes to resolve this tension of the strategic dominance dictating a “design-led approach” meant to be site-specific.

7. Conclusion

Density in London planning, as the research shows, has been reformed routinely, responding to changing demands and offering a base to manage development expectations. However, in its current state, the “design-led approach” fails to resolve the conflicts of density on two main accounts: the prevalence of a strategic dominance, which supersedes any contextual assessment due to a target-led culture, and the limited consideration of the subjective experience of density, which is manifested in stakeholder resistance to densification and which current design guidance, favoring primarily objective metrics, cannot address effectively.

7.1. Limitations of the “design-led approach”

The extensive research reveals how the GLA’s decision to grant approvals was target-led, undermining the LPAs determination and the community’s concerns. The top-down hierarchy of the planning system strengthens the strategic dominance over local determination. This target-driven “design-led approach” existed with the density matrix, due to the flexibility of interpretation of MCs when undertaking the planning balance in determination. The current “design-led approach,” while rooted in an assessment of context that would yield a more specific response than a matrix, still results in proposed densities being exceeded, as mentioned by officers. The practice of excess has not changed.

The GLA stated that the “design-led approach” “is more appropriate as developers are not likely to enter into transactions without getting certainty over planning applications” (Greater London Authority, 2019a). The extensive research shows how LPA housing targets on tenure split and affordable housing are not met, arguing viability limitations yet having growth zones that encourage densification. Thus, strategic dominance gives certainty to a “design-led approach” to densify. The “design-led approach” is meant to be inclusive in its context specificity, yet in practice, it is fractious. There is a resurgence of the bipartisan “centrism” and “de-centrism” into “target-driven” and “context-driven” camps. The ideological split now differs in approaches to densification. While LPAs attempt to bridge these extremes by having place-based policies and guidance, design reviews, and impartial design officers assessing subjective and objective MCs, the strategic dominance, currently, favors the “target-driven” camp.

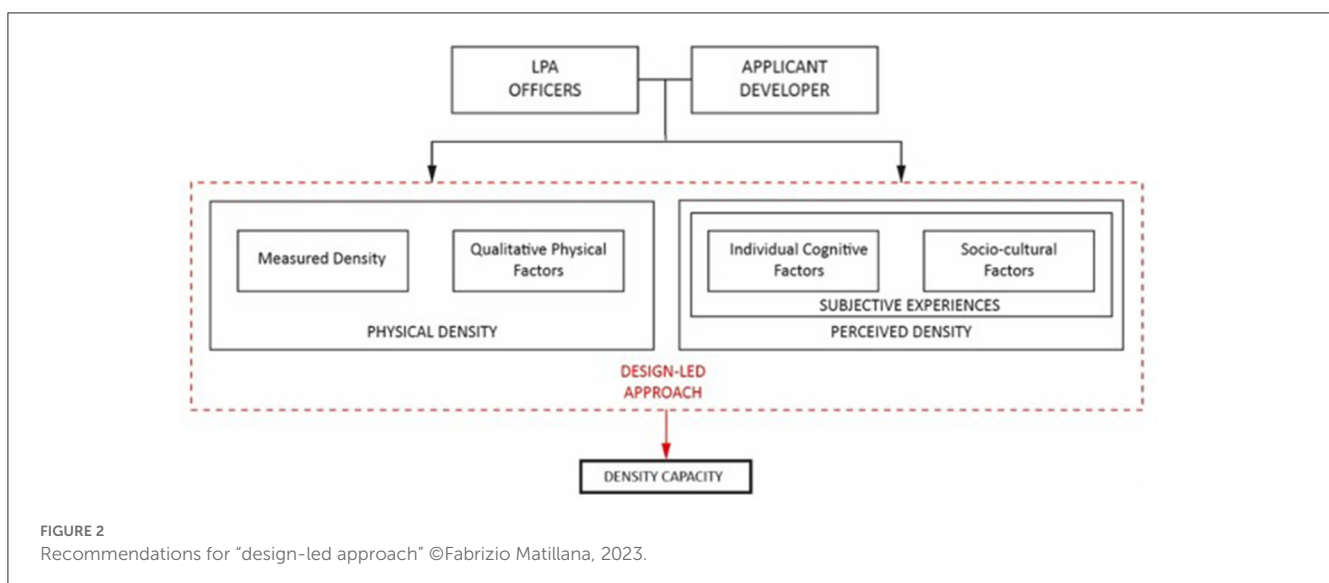
The favoring of delivering more homes was expressed by the design officers as the main challenge in balancing contextual constraints with a target-driven culture. Their most effective tools were objective metrics that present data that aim to manage the building’s impact from bulk, overlooking, loss of daylight, or impact on amenities. These are MCs that relate to stimuli from the subjective experience of density, such as crowding, loss of privacy, and stress. The “design-led approach” defines density

capacity by assessing infrastructural suitability and the impact of qualitative physical factors (the MCs). There is no explicit inclusion of perceived density and its subjective experiences of it. These aspects resonate with the community and stakeholders, evidenced in the called-in review and their resistance to schemes. The design officer interviews revealed limited practice based on the subjective experience of density. Design officers were unanimous in design as a tool to mediate density. Including this in the “design-led approach” may offer scope to improve density management via design. Figure 2 shows how the “design-led approach” could incorporate Alexander’s density definitions within the planning system.

7.2. Recommendations to include perceived density in the ‘design-led approach’

Design can influence subjective experiences and social behavior (Davis in Baum and Epstein, 1978). The current design policy and guidance work heavily on the physical aspect of density, defining minimum standards which become the default. A “design-led approach” that includes perceived density can be implemented using more nuanced design metrics and precedent.

For example, wind speeds impact the experience of crowdedness by having a direct discomfort for pedestrians. Regulating this for high-density developments involving tall buildings, with clear guidance and setting expectations of acceptable levels, such as what the City of London are doing with their *Wind Microclimate Guidelines* (City of London, 2019), would bridge perceived density with objective metrics. Another metric to be reviewed could be the 50% daylight levels on the 21st of March set by BRE guidance with a more nuanced metric that accepts perceived perception. The metric currently does not relate to a mix of typologies and how these bring positive qualities to socio-cultural perceived density or become perceived as overdevelopment. By changing the metric to reflect a particular



type (e.g., townhouse) and an established expectation of less or more daylight, as existing historical streets, the metrics would be less rigid and linked to an actual experience of density which is already accepted by residents in an established urban condition. This would also counter stakeholders resisting densification by selectively applying metrics over a collectively experienced urban condition. In practice, design officers use metrics to set a consensus with developers, such as defining building envelopes. However, Officers mentioned the use of types to establish consensus in planning negotiations is less frequent. This omits a useful design linkage between physical density and perceived density, between objective metrics and socio-cultural ones.

The GLA's *Draft Housing LPG* encourages the use of type and referring to precedents to establish design best practices. It also links type with objective housing design standards. Design Officers warned of the professional bias of this practice; therefore, this approach requires careful assessment before its use. In practice, this "design-led approach" of type to inform capacity and compliance with standards is not dissimilar to the Llewelyn-Davies "tile-based" "design-led approach", which too was based on typologies. While the former matrix testing results in an abstract metric range, the "design-led approach" should develop a series of best practice examples of type combinations and design standard compliance. While this approach is more nuanced than a matrix, it omits aspects of context that translate into perceived density. To make the links of physical density (objective metrics) with perceived density (subjective experiences), the "design-led approach" could be linked to *Character Maps*. These maps register variations of places, which are linked to socio-cultural readings of certain contexts, tolerance of communities, and infrastructural potential and future capacity. The NDG gives advice on "area types" to territorialise codes. This would also offer a design governance setting for type-led perceived density design management.

8. Conclusion

Density policy has shifted from the strategic to the specific with the "design-led approach." This reform was implemented due to "the lack of consensus between theory, policy, and practice arguably [pointing] to a requirement for residential densities to be examined on a case-by-case basis" (Dempsey et al., 2012, p. 96). A site-by-site "design-led approach" can deliver more than one answer as it is still influenced by multiple readings of a given context. This multiplicity is underpinned by a political context that has set a strategic dominance to meet housing targets. The tensions from a contextual reading for density and a strategic requirement for it result in a conflictive planning setting.

Understanding perceived density, and the subjective experiences of it, is a territory that the "design-led approach" can address more effectively than a numerical matrix approach. How design tools and design debates can be included in planning negotiations has the potential to bridge the conflictive discourse. The research has shown how the root cause of conflicts in density planning comes from this schism between objective and subjective

experiences of density. For a planning system that is discretionary and has moved from defining its density with a strategic tool into a more explicit case-by-case assessment, having the policy mechanism, and professional capacity to define a consensus amidst this flexibility is key.

To achieve this, the subjective experience of density should be addressed in density policy. As this aspect is influenced by socio-cultural norms, the use and codification of type can be used to account for political context in the "design-led approach." Interviews with Design Officers have also shown that training and resourcing of Design and Conservation Teams is essential to frontload design mapping work and in the negotiation of design policies to manage this conflictive tension. In a discretionary planning system, resourcing and codification of design practice are key to reap the benefits of the current case-by-case density policy.

The research shows how many definitions of density are being invited into planning determination, which, despite the myriad MCs in place to resolve tensions, applications are ultimately resolved in favor of a target-led dominance. Where there is tension with the delivery of house building, a "design-led approach" should be designed to sustain the pressures or relaxation of the direction of the political wind vane, which influences planning decisions. London's housing shortage is being resolved by building more homes, however, as the research shows, the city's densification can inclusively be addressed by further reform to its density policy.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

FM is first author of the paper and responsible for the primary content of the work, with NL contributing in a subsidiary role as corresponding author.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

The reviewer SB is currently organizing a Research Topic with the author NL.

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