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Jessica Ferm and Mike Raco

ABSTRACT
There is a burgeoning literature in urban studies on the role of suburbs in the development of global cities. For too long, it is argued, suburbs have been marginalised within urban theory and research. At the same time, planning systems are increasingly driven by growth-centred arrangements that seek to boost private investment and convert complex places into development spaces. Such approaches are built on the experiences of urban centres and the market conditions found within them. Drawing on the London example, the paper develops existing work on global suburbanisms to identify the multiple logics and variable practices of housing policy and delivery that exist within global cities. It makes three contributions. First, it highlights the continuing significance of place-based representative local government in shaping suburban variability. Second, it develops a typology of political clusters to demonstrate the variables that shape the diversity of approaches to housing development policy and delivery that exist. And third, it analyses the interactions between physical landscapes and the rolling-out of market-led models and planning systems. Collectively, the paper points to a methodology for the analysis of suburban environments in cities beyond London, especially those in which political boundaries and physical environments act as a constraint on spatial expansion.

KEYWORDS
Housing development; suburbs; politics; planning; local government

HISTORY
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1. INTRODUCTION
For decades, academic writing in anglophone countries has examined the ways in which fiscal devolution has encouraged a growth logic within territorial local governments and a drive towards entrepreneurialism and working in partnership with the private sector to de-risk and facilitate urban speculation (Harvey, 1989; Molotch, 1976). Following the global financial crisis of 2007–8 and the austerity programmes that followed, these processes have intensified with local governments increasingly reliant on the land value uplift generated by private-led urban development to fund broader social objectives creating a form of growth-dependence (Rydin, 2013), which Weber (2021) argues creates a ‘structural imperative … to engage in activities that push
property values higher’ (p. 517). Alongside local government’s enabling role in building partnerships with the private sector, more recent work has focused on the emergence of financialised entrepreneurial activities in which local governments become active property and housing market players themselves (Aalbers, 2019).

In London, both approaches are evident. Local governments and the Mayoral Development Corporations have enabled large-scale hyper-dense developments as part of a strategy of land value extraction to support public and community benefit (Robinson & Attuyer, 2021) – an approach that gained attention following the redevelopment of the 2012 Olympic Games site in East London (Poynter et al., 2015) but has been expanded across the capital’s so-called Opportunity Areas (Ferm et al., 2022). At the same time, Beswick and Penny (2018) explore how local governments in London are using their own public housing stock as collateral for new types of property market activity – a form of what they term financialised municipal entrepreneurialism – an extension to narratives of state-led gentrification of social housing estates that have been applied across Europe and North America (Watt, 2017). For Penny (2022) this existential shift in approach means that ‘local state actors in London are doing more than simply reacting to the top-down imposition of budget cuts. Supported by an industry of private sector advisors, they are actively constructing a new form of municipal statecraft’ (p. 546) which, he argues, constitutes a form of ‘local rentierism’. This can quickly turn into a process of over-speculation, making local governments vulnerable to economic downturns and financial over-reach.1

The body of work on large scale urban redevelopment in London and other Global Cities to date is suggestive of a singular logic drawing on responses by local governments to financial stress. Recent writings on comparative urban studies methodologies have called for recognition of the variegated practices of state authorities in delivering urban redevelopment in different global contexts (Robinson, 2022; Wu et al., 2022), whereas McFarlane et al. (2017) draw attention to the merit of considering ‘intra-urban’ as well as ‘inter-urban’ comparative projects to enhance comparative work both within and between cities. Or as Phelps and Wood (2011) observe in discussing earlier work on urban regimes, urban politics often involves highly contextualised discussions over what type of growth should take place and where. In this paper, we respond to this challenge and critically examine and deconstruct the variegated practices and multiple logics of housing development planning operating within cities. As Lauermann (2018) suggests, ‘labels like “entrepreneurial” have geographically varying degrees of relevance’ (p. 210), and there is therefore merit in exploring the extent to which writings on financialised municipal entrepreneurialism could benefit from further insights into the variables that shape a diversity of approaches and activities within and between local governments within the same city. In the UK context, we know from Clifford and Morphet (2022) that there has been a diversity of local government responses to housing dilemmas across the country; what remains underexplored is an understanding of diverse responses within the same city, and the local social and political relations underpinning them.

When we consider the approaches to housing development planning in a single global city, there is merit in turning our attention to what happens beyond urban centres, to suburban areas that are growing in importance as locations of demographic and economic expansion (Charmes & Keil, 2015). In London, writings on the financialised entrepreneurial practices of local government are so far based on empirical material drawn largely from inner London authorities, or areas that have seen significant planned growth and development on large-scale sites, through ‘hard densification’ (Livingstone et al., 2021). Yet the approaches across a wider range of suburban authorities towards such projects remain less well understood or theorised.

Drawing on in-depth research on housing and development planning across London, we identify multiple logics and variable practices of delivery across suburban boroughs, shaped by different political and physical landscapes. We provide evidence of variations in territorial opportunities and constraints, the operation of land markets, and the specific representative politics of place influencing planning outcomes. This variability is significant enough to undermine the
utility of existing property-led models of development, as pushed by city mayors and development agencies, reliant on hard densification to support value extraction by state authorities. Such models, we show, fail in suburban contexts even where local authorities are pursuing them vigorously. In the next section, we examine some of the factors that shape the potential for variability in the actions and approaches of local governments highlighting their embeddedness in the representational politics of place and the insights that can be gained from recent writings on (post)suburbanism and urban development. We then turn to an overview of our research approach and methodology and our empirical case study work in London. First, we document the changing governance approaches, demographics and representative politics across inner and outer London. We reveal the tensions and pressures in outer London, where authorities have been tasked with delivering an increasing proportion of London’s housing delivery targets, whilst at the same time coping with population growth, suburbanisation of poverty and changing local politics. Second, we draw on empirical material from outer London local authorities to reveal a diversity of geographical and land market pressures, and the multiple political responses to housing development that have emerged. In our conclusions, we review our findings and consider their relevance for other large international and global cities and call for a greater engagement with the varied approaches of the state to housing development policies and outcomes. In examining the actually-existing forms and logics of suburban local governments and state actors, we are also responding to a more ambitious call to move away from top-down or centralised approaches to theorising the city and move towards a theorising from the periphery (Phelps et al., 2023).

2. ACTUALLY EXISTING LOCAL GOVERNMENT: INTRA-CITY DIVERSITY OF SUBURBAN HOUSING DEVELOPMENT POLITICS

There has been a burgeoning literature in urban studies on the growing importance and diversity of suburban areas in major cities, in recognition of their growing size and polycentric character (Murray, 2017; Rodríguez-Pose & Storper, 2020). The emphasis in much of this literature – as Phelps (2018) documents – has been to move away from seeing suburbs as a distinct category, in opposition to ‘the urban’, and instead focus on the process of suburbanisation, whereby suburbs become more active and significant sites in the formation of urban political economies and environments. As Keil (2018) notes:

the notion of suburbanization as dependent on one centre has to be discarded as the form and life of the global suburb take shape in a general dynamics of multiple centralities and de-centralities. It includes a maturation of classical suburbia, a more splintered and fragmented urbanism. (p. 494)

It is an approach that challenges a traditional dualism that sees cities in terms of centres and peripheries, in which much contemporary suburban growth ‘cannot be linked back directly to the centre as the driving force but must instead be seen as developing a certain dynamic of its own’ (p. 496). The consequence is that contemporary urbanism is increasingly experienced away from (traditional) city centres and ‘in the peripheries, where mixed densities of housing and work are normal, diversity of land use and morphology is to be expected and socio-demographic diversity is on the rise’ (p. 496).

Such insights call for a broader gaze on the processes of (sub)urbanism and urban development politics. Phelps (2012) contrasts the traditional exclusionary anti-growth politics pursued in stable, affluent (primarily residential) suburbs of the US, with the more regime-style politics – building on Molotch’s (1976) growth machine model – found in post-suburban settlements, such as Edge Cities, where new urban centres are formed in peripheral locations. In Paris, Touati-Morel (2015) demonstrates that ‘densification policies are easier to implement in municipalities where a dynamic favouring growth, led by a particular coalition of actors, can drive the
transition from a traditional suburban municipality to a locality resembling a post-suburb’ (p. 604). Yet she makes a distinction between ‘soft’ and ‘hard’ forms of densification in suburbs in combinations that make them different from the urban development politics found in city centres. Soft densification consists of low-rise infill developments focused on the needs of homeowners and small developers, whereas hard densification is characterised by large-scale urban projects in which individualised housing units are replaced by higher-density apartments and more collectivised forms of living. The latter, in the French case at least, tend to be promoted by growth coalitions of local politicians, property developers and/or investors and ‘in municipalities that are engaged in a political dynamic of advanced post-suburbanization and want to become regional sub-centres by attracting creditworthy households and businesses to their territory’ (p. 604). Yet, as we argue in this paper, London’s suburbs cannot be uniformly characterised as ‘traditional exclusionary, anti-growth’, nor do they easily conform to regime-style politics. As encouraged by Phelps (2012), there is a need for an appreciation of the potential variety of urban politics across metropolitan systems’ (p. 675). This is required if we are to avoid a ‘techno-material bias’ in planning systems and national development orthodoxies towards the needs of central urban areas (Young & Keil, 2010, p. 88).

The intrinsic diversity of suburban and intraurban politics represents a political problem for national, regional and metropolitan governments intent on increasing levels of urban development. In multiple contexts, planning reforms have sought to find new mechanisms to shift the priorities of local governments and citizens from NIMBY agendas into YIMBY approaches (De Vidovich, 2019; Lake, 2007), especially in larger cities where there has been a push towards more globally oriented forms of economic growth based on the strategic priorities set out by mayors and other city leaders (Holman & Thornley, 2015). In cities across Europe and North America, new policy instruments are being introduced to make planning systems more flexible and to encourage new investment, greater density and the re-purposing of buildings, especially in relation to housing (Belotti & Arbaci, 2021; Ferm et al., 2022; Madeddu & Clifford, 2023). Even in northern European countries such as the Netherlands and Germany, where planning interventions have traditionally been less growth-oriented and led by powerful government agencies, there have been shifts towards greater fragmentation and flexibilisation and a mix of incentives and disciplinary targets introduced to generate more suburban growth (Germán & Bernstein, 2020; Tasan-Kok, 2008).

Attempts to introduce such measures are contingent on the decisions taken by, and within, variegated local parties and systems of representative authority. Any attempt by elite groups and interests at the local level to shape policy is limited by the polycentric forms of institutional organisation and structure that exist at the local government level and the ways in which this polycentricity impacts on the development and implementation of planning agendas and priorities in diverse geographical contexts. Local government structures are built around representative forms of accountability and legitimacy, periodic elections and de-centralised decision-making systems and modes of engagement. The extent to which ‘they’ (as coherent subjects) can internalise any form of top-down financially oriented agenda is highly circumscribed as it implies that local governments represent vertically integrated bodies that can be managed and directed within a hierarchical structure (Skelcher & Smith, 2015). For instance, local political parties, or factions within them, can lead opposition to development schemes and/or use their representative authority to reject development proposals for a variety of purposes – from preserving the qualitative character of neighbourhoods to resisting the class and community change. As Cochrane (2020) argues, insights into the functioning of local government therefore need to take account of how ‘geography takes on an active role, as shifting political territories and spatial relations are identified, produced and reproduced by a range of actors’ (p. 524). This geography is significant because local government is accountable to multiple sources of political authority and legitimacy simultaneously, whilst also acting as a site for the articulation and (possible) resolution of territorial conflicts in relation to urban built environments (Regini & Lange, 1989).
The diversity of responses is further institutionalised by electoral systems. In England this takes on a particularly fluid form with councillors voted in on a four-year electoral voting cycle, by residents in neighbourhood-scale territorial wards of approximately 5–6000 people. In each local authority jurisdiction, different wards come up for re-election at different times, adding to constant churn and providing opportunities for local communities and citizens to exert political pressure on sensitive local issues. Local political parties form governing coalitions and this acts as a further axis for local diversity. Research by Clegg and Farstad (2021), for instance, has shown that authorities that are governed by Labour Party groups tend to impose higher levels of regulation on investors and developers and use the planning system to capture as much surplus value as possible for welfare spending. Their research also shows that the politics of development is tied up with voting patterns and class interests. In many urban contexts, ‘new developments expand owner-occupancy, and left-wing national governments stand to lose electoral support with the expansion of owner-occupancy’ (Clegg, 2021, p. 693). This reflects how local governments have long been concerned with the relationships between housing stock and the class composition of their voting populations as this has a direct impact on electoral support. In prioritising some interests over others, for example by creating housing for families or for young professional workers, the electoral fortunes of a ruling group can be reinforced or undermined. The presence of this polycentricity, overlain on diverse local political environments leads to what Barnett et al. (2020) identify as ‘municipal pragmatism in local government’ with a need to move away from ‘grand narratives of change’ (p. 517). Instead, they call for ‘a critical engagement with “actually existing” local government’ (p. 518), which focuses on the subjective experiences and values of actors on the ground and allows space for a diversity of responses and approaches.

One additional variable, often under-discussed in writings on local governance, is the influence of physical opportunities and constraints found in different places and their influence on political geographies (Knox, 2017). The capacity to build new housing and other infrastructure is critically dependent on the financial viability of projects for private actors, but this in turn depends on the availability of suitable sites for development (Crook & Whitehead, 2019). Hard densification models are often ill-suited to suburban environments within major cities and their specific conjunctures of physical and political constraints. The English case is especially insightful. Since 1948, the development of its conurbations has been carefully controlled through restrictive Green Belt legislation (Cowan et al., 1974), meaning that, rather than expanding spatially, many suburban areas are marked by forms of constraint, limiting where, when and how development can take place. As Bibby et al. (2020) show, this constrained environment meant that softer forms of infilling dominated new housing construction during the 2010s, as developers, landowners and investors were forced to find smaller sites for new projects in suburban locations and unable to undertake intensive forms of financialised statecraft, even if governing elites had wanted to pursue such agendas. The reality is that much new housing is being constructed ‘under the radar’, driven by very different development processes involving complex negotiations and entanglements within diverse, actually existing, political agendas.

In the remainder of the paper, we turn to an overview of our research approach and methods, followed by our findings to examine the complex practical and political challenges that underpin the work of suburban local governments in London, which ultimately render the pursuit of high-density market-oriented development models of housing delivery problematic. Collectively we argue that the presence of polycentricity, overlain on diverse local political environments, market conditions and geographical constraints demonstrates the need to move away from ‘grand narratives of change’ (Barnett et al., 2020, p. 517). We use the London case to explore the form and character of suburban politics within a global city where physical and administrative constraints limit suburban sprawl, thereby contributing to the burgeoning writing on global suburbanism and processes of urban change.
3. RESEARCH APPROACH AND METHODOLOGY

This paper is drawn from research undertaken as part of a wider Economic and Social Research Council (ESRC) research project, *What is Governed in Cities*, investigating the governance and regulation of housing investment and production in the urban housing markets of major cities. The London-based research was conducted between 2019 and 2022 and included over 100 in-depth interviews (of between 60 to 120 min) conducted, principally, with local authority officers and politicians, professional bodies, private sector investors and developers. The aim of this paper – to reveal the multiple logics of suburban housing development politics in a global city – emerged as a concern over the course of the many interviews conducted over the three years. For our analysis, we use data principally from our interviews with outer London authorities (or ‘boroughs’), but our argument and broader understanding of changing London dynamics has been informed by the wider range of respondents. In line with recommended approaches to case study research (see e.g., Stake, 1995; Yin, 2002), the interview data is triangulated with multiple sources of evidence gathered through desk top research at both the London level (The London Plan and housing targets, the Greater London Authority’s (GLA’s) annual monitoring reports detailing housing delivery, the Strategic Housing Land Availability Assessment), as well as evidence from outer London boroughs (adopted and emerging local plans, council reports and local press articles).

These outer London boroughs represent multiple cases within the main London case and facilitate intra-urban comparative work, following McFarlane et al. (2017), who argue such work reveals ‘the diversity and difference that contrast urban meta-narratives within cities’ (p. 1395), facilitating what Jacobs (2012) refers to as a ‘decentering of the urban’. Such an approach focuses on the subjective experiences and values of actors on the ground who ‘do the work’ of local government, allowing space for a diversity of responses and approaches across different places. Our method of inquiry responds to this call for a pragmatic, bottom-up approach that allows space for diversity, and a recognition of the ‘messy actualities’ of state action (Fuller, 2013: p.644).

In analysing our data, we looked for both differences and similarities across the multiple cases, with a particular focus on characterising the local authority's housing development politics – its attitudes to growth, density, place quality, affordable and social housing. We were particularly interested in points of convergence and divergence between three main local political parties: Conservative, Labour and Liberal Democrat. We found it useful to develop a typology from the qualitative data, whereby cases are grouped into different types based on common features (see Stapley et al., 2022). The types correspond to different housing policy and development ‘logics’ adopted by the state. Following Stapley et al.’s critical realist perspective, we do not consider the types that are proposed to be ‘objective’ representations of the world, rather we acknowledge that these are social constructs that we believe help us to understand the diversity of local authority approaches, representing a snapshot in time.

4. LONDON GOVERNANCE AND LOCAL POLITICS: IMPLICATIONS OF CHANGE FOR OUTER LONDON AND HOUSING DELIVERY

The development of London has long involved governmental tensions over the spatial distribution of growth and the relationships between central areas and the city’s suburbs (Jenkins, 2019). In the post-war period modern planning frameworks were introduced across England, largely in reaction to the perception that London’s suburbs, and those of other major cities, were sprawling uncontrollably and becoming what Nairn in 1955 termed a ‘subtopia’ containing poorly planned housing and infrastructure (The Architectural Review, 2018). The need for
containment through planning controls and the implementation, in 1947, of the Green Belt has continued to shape the city’s political and development geographies to the present-day, with demographic and economic growth taking place within the city. What has evolved is a complex landscape that Knox (2017) characterises as a ‘metrouria’ in which ‘physical features, transport networks and social geography have combined to generate and sustain distinctive sub-regions or urban realms – within Greater London’ (p. 10).

In line with urban trends in multiple contexts, the geography of residency in London has been subject to a process of decentralisation. In the 2021 census, the majority of the population was found in outer boroughs, containing five million of London’s 8.8 million residents (GLA, 2023); as shown in Table A.1, in the supplemental online appendix, the outer London boroughs all saw population growth between 2011 and 2021, in contrast to inner London boroughs that contracted. This expansion has been accompanied by trends normally associated with inner urban areas (cf. De Vidovich, 2019), especially: a growing diversity in the socio-ethnic composition of the suburban boroughs (Hall, 2021); a marked increase in poverty and lack of housing affordability (Bailey & Minton, 2018); the growth of overcrowding in houses of multiple occupation (GLA, 2020); and the emergence of clusters of property development alongside major urban transport nodes.

These demographic shifts have taken place alongside political reforms. The creation of the GLA in 2000 established a tier of strategic planning coordination that had been absent since the abolition of the Greater London Council in 1985. Since then, conflicts between inner and outer London have dominated political agendas and imaginations. Holman and Thornley (2015) chart the ways in which the first Labour mayor, Ken Livingstone, generated tensions with suburban boroughs by focusing on inner London’s development and the regeneration of areas of Labour-voting residents. In the wake of central government restrictions on social housing construction, Livingstone embarked on a programme of partnership working with developers, investors and housebuilders to construct high-density, high-return projects on inner urban brownfield sites and value-capture (Bowie, 2010). The mayor’s lack of powers and resources to build new housing meant a growing reliance on market-led delivery and the pursuit of international capital to fund high-density, high-rise projects (Burrows et al., 2017; Hatherley, 2020). In the wake of these projects, there was growing concern, in suburban areas, that growth pressures would spread outwards. As Holman and Thornley (2015) go on to explain, Conservative mayor Boris Johnson’s election in 2008 reflected an agenda that capitalised on these concerns ‘having fought a campaign to raise his political profile in London’s “neglected” suburbs’ and promising to ‘give more local autonomy of policy making at the local level’ (p. 496). Johnson established an Outer London Commission to promote polycentric planning across the city and to give suburbs more power over planning agendas, especially housing policy. As the authors note, this initiative failed to develop a coherent set of interventions, but it did establish a precedent in which boroughs and clusters of boroughs were able to establish alternative approaches to growth-led planning, often in tension with the strategic, globally oriented agendas set out by city-wide plans and the GLA.

With the election of the second Labour mayor, Sadiq Khan (2016 and 2021), tensions re-emerged, especially over housing targets and attempts to shift some of the requirements for new housebuilding away from central areas and on to suburban authorities. The London Plan 2021 sought to turn market activity towards suburban and smaller-scale schemes that would be more evenly distributed across the city. The core drivers behind this move were both political and pragmatic. As a range of interviewees recounted, there was a feeling that inner London boroughs, many of them Labour controlled and with voters who backed Mayor Khan’s election, had been asked to take on a disproportionate share of the costs and disruptions of delivering more housing for the strategic priorities of London as a whole and that outer Boroughs should ‘contribute’ more. A document called Superbia was published in 2017 that set out a strategy for types
of infill suited to suburban environments. It claimed that, under existing forms of target-setting, there was a significant ‘shortfall in supply from these sources’ and through design-led approaches it would draw ‘attention to the possibilities inherent in London’s very low density and often under-occupied suburban districts to see how the shortfall may be reduced in the future’ (Derbyshire, 2017, p. 3). Although the assumptions inherent in the ‘Superbia’ approach were challenged by outer London boroughs in the public examination of the London Plan resulting in lower housing targets for outer London than initially envisaged, there has still been a significant rebalancing of housing targets towards outer London. Whereas inner London’s targets have fallen compared to the 2016 London Plan, outer London’s targets have risen by approximately a third (Raco et al., 2022).

Underpinning these trends is a shifting representative politics of local government. Historically, London has been referred to as a ‘red metropolis’ (Hatherley, 2020), reflecting Labour authority control over the majority of inner London boroughs. In 1981, five years before the abolition of the Greater London Council, there was a clear distinction between the politics of inner and outer London, with inner London dominated by Labour surrounded by an outer London ring of boroughs mostly under Conservative party control (see Figure 1 for an overview of the period 1981–2021). In 2001, it was clear this politics was shifting, with 11 outer London boroughs previously under Conservative party control going to either ‘no overall control’ (5), Labour (5) or Liberal Democrat (2). By 2021, Labour consolidated its hold, gaining a further three outer London boroughs. It is recognised that this analysis, in seeking to communicate clear trends, does not represent many of the nuances in local politics, in particular it does not reveal the strength of the majority in the boroughs. It also needs to be recognised, as Travers (2015) emphasises, that ‘[e]ach of the boroughs has evolved a distinct identity’ and that ‘[p]olitical cultures differ from one to another, even when the same party is regularly in control’ (p. 38). But it does reveal changes and continuities in borough control in suburban areas and a gradual evolution away from Conservative domination. In the empirical discussion, we explore how these political shifts in outer London boroughs are influencing the approaches of local governments to housing development in their jurisdictions. But we begin with a discussion of the diverse physical geographies and land markets that shape the development geographies of London’s suburbs.

5. PHYSICAL GEOGRAPHIES AND LAND MARKETS IN LONDON’S OUTER BOROUGHS

The physical geography and built environments of outer London have a major bearing on the type of development that is financially and politically viable. Inner London boroughs are not affected by Green Belt restrictions, whereas in outer London boroughs the average is just over 20% of land, and in some the coverage is over 50% (CPRE, 2018). The scale of these physical constraints is leading some authorities to initiate reviews but without strategic leadership from the Mayor of London they are unlikely to have significant impact due to the way in which Green Belt has become a ‘policy institution’ (Mace, 2018), with policymakers at multiple scales unwilling to consider reform for fear of political conflict. To date no London mayor has chosen to take a radical approach to Green Belt reform, which according to one of our interviewees is infuriating some outer London Labour groups, who have been trying to lobby the mayor behind the scenes:

They’re like, ‘look we need to build on the Green Belt, we need to, it’s the only way we will survive the next election because I can’t keep building tall towers next to all my existing homes, we need to look at the Green Belt.
Figure 1. Political control of inner and outer London boroughs, selected 20-year snapshots, 1981–2021.

Source: London Boroughs Political Almanac, 1981, 2001, 2021 (boroughs50.londoncouncils.gov.uk). The authors would like to thank Frances Brill and Callum Ward for their inputs into earlier drafts of the figure.
Other policy restrictions, such as the protection of industrial land, are also reducing the availability of sites for new development in outer London where boroughs possess 5716 Ha or approximately 80% of total industrial capacity (AECOM, 2023). Whereas previous iterations of the London Plan sought to meet demand for housing by releasing industrial land, the 2021 Plan states that: ‘where possible, all Boroughs should seek to deliver intensified [industrial] floor-space capacity in either existing and/or new appropriate locations supported by appropriate evidence’ (GLA, 2021: paragraph 6.4.6), in order to meet the ‘positive net demand for industrial land in London over the period 2016 to 2041’ (paragraph 6.4.4). As one council officer explained in interview, this generates pressures that disproportionately fall on suburban authorities:

we’ve got a big reservoir of employment land, of industrial logistics land, and that breeds demand for more, so when you do the evidence, it says ‘you need more of this because there’s high demand’, and you’re like, ‘I knew that. Where are we going to put it?’

Or as another explained: ‘we just don’t have enough sites in the pipeline, we do not have enough land allocated for housing to meet our housing targets, so we don’t even have, often enough, houses coming in for pre-application or application’. Attempts to find new sites through the writing of binding local plans have generated such fierce conflict that by early 2022 we found more than half (17) of London’s 33 local authorities had out of date local plans, 14 of which were outer London boroughs.

For planning officers, this poses practical challenges in their day-to-day work. As one officer explained, ‘the biggest barrier to anybody writing a local plan is your politicians’ because it ‘puts a marker down’ removing ‘any ambiguity with your electorate’ saying ‘this is growth, and this is where it is happening’. Even where local plans are in place and up to date, in many cases allocated housing sites are not coming forward for development. One planning officer reported how sites that were allocated for development ‘were simply never built on, never actioned, simply rolled forward’ from the previous local plan to the current one. These sites include retail parades, and locations with multiple landownerships, which require ‘significant regeneration input and compulsory purchase to deliver’, but ‘that resource has never existed and there’s not been the corporate enthusiasm to deliver those sites’.

Alongside these political conflicts over land designation, the lower value of property markets and a lack of supporting infrastructure undermines the financial viability of large-scale developments and the potential of profit-making for investors and developers. In 2016, the GLA commissioned a study on the development viability of tall buildings across London, which revealed that ‘in high value areas, the tallest buildings have the strongest viability but, elsewhere, there is a more mixed picture of scheme viability across different scheme densities and different heights’ (Three Dragons, 2016, p. 84). High towers (of 45 storeys) were only viable in the central London boroughs of Westminster and Kensington & Chelsea, the City of London, Camden and Hammersmith, where new build prices could command between £1–2.75 m in order to offset the high build costs associated with their construction. Tall towers (25 storeys+) were viable in a further 12 boroughs where new build values were above £0.5 m, but unviable in the remaining 16, mostly outer London boroughs.

A confidential GLA report in 2019 on the delivery of affordable housing in tall buildings, released under a Freedom of Information request, went further in showing that ‘the poorest performing schemes which include tall buildings are those in the lowest value areas such as Croydon and Ilford’ (paragraph 27). This affects the viability of larger regeneration projects, for example a flagship project known as Meridian Water in Enfield (northeast London) – where the council envisioned, in the early 2000s, a £6bn new mixed-use community including 10,000 new homes and 6000 jobs on former industrial land – ran into issues of complex and multiple land ownership, lack of infrastructure and relatively depressed property values. This meant the project
did not progress as originally envisaged and two development partners dropped out. In July 2018, Enfield Council took a decision to take over the role of ‘master developer’ on the site, seeking compulsory purchase of land, and a £156 m grant from central government under the Housing Infrastructure Fund to pay for new roads, public realm and rail improvements (Meridian Water, 2022). Such examples are indicative of the inappropriate nature of urban development programmes designed for more central areas with higher land values. As one interviewee noted ‘build costs in inner and outer London are no different, but land values [in outer London] are much lower … it doesn’t work’. In such contexts, the experiences and needs of local authorities are more in-line with those of city authorities in other parts of England that require direct forms of public intervention to bring development to fruition (McGuinness et al., 2018). In the next section, we develop the discussion further to explore the diversity of housing development politics that has emerged and some of the constellations of political awareness and action that are visible.

6. CHARACTERISING THE DIVERSITY OF HOUSING DEVELOPMENT POLITICS ACROSS OUTER LONDON

To date, attempts to create typologies of suburbs in the English context have focussed primarily on physical characteristics, such as density and availability of green space, as well as access to amenities and centres of employment (The Suburban Taskforce, 2022). Yet, as Natarajan et al. (2023) argue, suburban landscapes are influenced by ‘responses to local socio-economic concerns, historic urban form, and the politics of local development’ (p. 23), and in the context of London they speculate based on their case study work that outer London ‘may become more divided, both within and between boroughs, as different local perspectives on landscapes encourage diverging development directions’ (p. 35). Earlier research on the existence or absence of local growth regimes across the city identified ‘the diversity of coalition forms and the continuing social significance of local political institutions’ but also warned that it would be a ‘mistake to search for a regime in every council office’ (Dowding et al., 1999, p. 541). Other work has examined how, in individual suburban boroughs, such as Croydon (in south London), strong elites have consistently sought to create a dynamic urban centre within a London-wide context (Phelps, 1998). In this section we look to update these interventions and propose the existence of five clusters or constellations of local authorities in outer London, that either actively band together to achieve political or policy gain, or that can be broadly grouped together according to a logic presented here. Collectively the research demonstrates the presence of a growing suburban political awareness, with five logics of housing development emerging, summarised in Table 1. Background data on ethnicity, deprivation, income and housing tenure for outer London boroughs grouped by this logic are provided in Tables A.2 and A.3 in the online appendix.

6.1. Labour pragmatist

There are several Labour-led boroughs where the existence of stronger property markets around transport infrastructure or strong local employment centres, have enabled administrations to adopt pro-growth approaches to development, in order to secure public benefit through cross-subsidy and value-capture. These boroughs are characterised by a form of Labour pragmatism. They are strategic enablers of private investment with the aim of capturing as much value as possible for the building of social infrastructure and affordable housing. There was a common view expressed in public and private sector interviews across London that developers approaching councils such as these know that, if they have got a reasonable scheme, the councils will work with them to help deliver it. Yet the council is going a step further by, for example, pro-actively masterplanning areas where there is potential for investment. In these boroughs, the rationale for enabling growth in the form of private sector investment and development is best understood in the context of ‘trade-offs’, where developers are enabled to extract profit, in order to secure
Table 1. The five housing development logics of outer London boroughs.

<table>
<thead>
<tr>
<th>Logic</th>
<th>Political Control</th>
<th>Examples</th>
<th>Demographics(^1)</th>
<th>Morphology/Territory</th>
<th>Housing land markets(^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Pragmatic value capture</td>
<td>Labour</td>
<td>Ealing, Brent</td>
<td>Steady population growth, declining social rented accommodation, highly diverse</td>
<td>Mixed density, good connections to central London, mix of green space, industrial sites, town centres and established residential communities</td>
<td>Medium</td>
</tr>
<tr>
<td>2. Hyper-entrepreneurial</td>
<td>Labour</td>
<td>Croydon, Barking &amp; Dagenham</td>
<td>Strong population growth, highly diverse, pockets of deprivation</td>
<td>Mixed density, large amounts of commercial space, major regeneration projects underway</td>
<td>Weak</td>
</tr>
<tr>
<td>3. Protectionist with directed ‘good growth’</td>
<td>Conservative</td>
<td>Bromley, Bexley, Hillingdon, Barnet</td>
<td>Relatively high levels of home ownership, lower levels of diversity in Bromley and Bexley than Barnet and Hillingdon, rising deprivation.</td>
<td>Low density: greenbelt, established town centres, residential communities</td>
<td>Weak-Medium</td>
</tr>
<tr>
<td>4. Custodians of Place, ‘Sustainable Growth’</td>
<td>Previously Conservative, now Liberal Democrat</td>
<td>Kingston, Richmond, Sutton</td>
<td>High levels of home ownership, higher incomes (Kingston/Richmond), less diverse in London context</td>
<td>Low density: Green spaces, riverside, family housing, traditional town centres</td>
<td>Weak-Medium</td>
</tr>
<tr>
<td>5. Growth politics push-back, passive resistance</td>
<td>Previously Conservative, now Labour</td>
<td>Redbridge, Harrow, Enfield</td>
<td>Strong population growth, highly diverse, growing deprivation, average incomes</td>
<td>Low density: greenbelt, residential communities, industrial, town centres</td>
<td>Weak-Medium</td>
</tr>
</tbody>
</table>

\(^1\)See online supplemental appendix, Tables A.1, A.2 and A.3 for data supporting claims.

\(^2\)See Figure 9.3, Three Dragons (2016). Bands 6–7 = High, Bands 3–5 = Medium, Bands 1–2 = Weak.
housing, particularly affordable housing delivery. This pragmatic approach acknowledges there is an element of gaming the system, accepting there are compromises to be made in facilitating higher density development to extract maximum benefit for communities.

There is evidence that these councils are starting to face growing local political conflicts. In Ealing, extending growth strategies beyond brownfield sites to more established residential areas and town centres is proving politically difficult. Most notably, a local campaign group, Stop the Towers, has formed in opposition to the building of two residential towers of approximately 20 storeys in west Ealing, on sites adjacent to the newly opened Elizabeth Line railway that traverses central London. Their campaign achieved some success in influencing Ealing’s planning committee to reject the developer’s planning application for one of the sites, however, in 2021, the scheme was subsequently approved on appeal by an independent planning inspector. Despite the campaign’s failure they are continuing ‘the fight to preserve Ealing’s reputation as “Queen of the Suburbs”’ (Kouimstidis, 2021). Similarly in Brent, the Council has reported increasing pushback from the existing population to further tall building clusters such as the one that has emerged in Wembley, on the basis of loss of traditional character and that local people recognise new housing in these clusters is too expensive for their own children to afford.

6.2. Hyper-entrepreneurial labour
Other outer London Labour boroughs – notably Croydon and Barking & Dagenham – have adopted more aggressive risk profiles in their approach to housing development, which we term hyper-entrepreneurial. These Labour authorities have sought to adopt financialised municipal urbanist approaches (cf. Beswick & Penny, 2018) with both boroughs establishing their own housing development companies, named Brick-by-Brick and Be First respectively, that aimed to build new homes and capture the profits for council budgets. Their experiences have differed. In the case of Barking & Dagenham, the Labour authority has built on a long-running regeneration programme for the area – it was formally a part of the Thames Gateway. It is the scale of the projects, with the ambition to create 20,000 new homes funded through various sources, underpinned by financial backing of up to £100 m, that represents a particularly risky enterprise – especially in the wake of recent market turbulence and increasing costs (Barking & Dagenham Council, 2018). In Croydon the model has faced much bigger difficulties. The constraints of suburban real estate markets and development opportunities have undermined its hyper-entrepreneurial ambitions. Brick-by-Brick was unable to make sufficient profits to stay viable and the authority officially declared bankruptcy in 2022 with total debts of £1.6billion. Not all of these were attributable to speculative property investments, but a highly critical report published by accountants Grant Thornton (2020) noted that the Council had increased the level of borrowing by £545 million over three years and had used this to invest in new companies and buy investment properties, exposing the Council to significant financial risk. The report pointed to a lack of ‘appropriate governance over the significant capital spending and the strategy to finance that spending’ (p.3).

6.3. Protectionist conservative with directed ‘good growth’
There are some remaining traditional Conservative-voting outer London boroughs – Bexley, Bromley, Barnet, and Hillingdon – where the built environment can be largely characterised as low density, mainly residential in character with established town centres and substantial green space. In these boroughs, there are typically higher levels of home and car ownership and low levels of public transport accessibility, but the populations have become more diverse over time and there is increasing pressure to deliver higher numbers of new homes under the London Plan.

Although these boroughs may, in the past, have adopted an approach of active resistance to development, the pressures to accommodate new housing and infrastructure to support incoming
communities means that their traditional concerns of protecting historic environments, suburban character, and green spaces have been supplemented by strategies of targeted growth in and around opportunity areas, on brownfield land, or around established town centres. These boroughs’ local plans use slogans such as ‘good growth’ carefully directed to places that are seen to be able to accommodate new development without too much local opposition. For example, in Hillingdon, expansion is envisaged in the Heathrow Opportunity Area – linked to the environs of the main airport – and in the larger town centres. In Bexley, southeast of the River Thames bordering the county of Kent, the Draft Local Plan (May 2021) states that ‘Good Growth’ is planned in the large opportunity area that runs along former industrial land on the south side of the River Thames ‘making the most of Bexley’s riverside location and industrial heritage’, whilst at the same time the ‘borough’s valued suburban heartland and quality open spaces will be preserved and enhanced’ (p. 14).

Local opposition to tall buildings in such boroughs can still be fierce, however, limiting the potential for councils to deliver on development aspirations, even in places such as established town centres. For example, in January 2022, a planning application for a 16-storey building in Bromley town centre was rejected following the receipt of over 400 objections, with one residents’ group reportedly rallying against the ‘Croydonisation’ of Bromley (Evans, 2022) – an explicit reference to the hyper-entrepreneurialism of its neighbouring borough.

6.4. Liberal ‘Custodians of Place’ with ‘sustainable growth’

Fourth, there is a cluster of boroughs in southwest London – Sutton, Richmond and Kingston – where there has been a shift from Conservative to Liberal Democrat politics. These boroughs have significant green space and/or blue (river) infrastructure. Their populations are more affluent than in outer London boroughs to the east and the protection of what is viewed as ‘suburban character’ acts as a focus for political parties and civil society groups. Local authorities here present themselves as ‘Custodians of Place’, where a rhetoric of ‘sustainable growth’ has been adopted in their Local Plans. In Sutton, for example, planning frameworks express concern about the ability to meet housing targets without destroying the character of the borough, referring not only its existing low-density development, but also town centres and villages that were – until the interwar years – surrounded by open countryside and governed by authorities outside the London County Council jurisdiction (Travers, 2015).

In Richmond, a borough with 85 Conservation Areas, development opportunities are highly constrained, which creates challenges for planners to identify suitable sites for projects. Despite this, a development proposal for a mixed-use scheme with 112 homes on St Clare’s business park was rejected on appeal by The Planning Inspectorate (2022) on the grounds of ‘significant harm to the character and appearance of the area and the harm to the living conditions of neighbouring occupiers’ (p. 11). In neighbouring Kingston, it was reported that politicians struggled to be pro-development as they were elected on a platform of retaining suburban character and good schools.

During the process of the public examination of the London Plan, these boroughs formed an active alliance prompted by their shared concerns about the impact of the Plan’s proposed increased housing targets in outer London boroughs, to be delivered largely on small sites. This alliance of Liberal Democrat boroughs was formed in haste and out of necessity as there were limited seats at the Examination in Public of the London Plan.

6.5. Labour passive resistance to growth

Fifth, and finally, there exist some previously Conservative outer London boroughs that have had recent long spells under the Labour party – such as Enfield, Redbridge and Harrow – where political control has tended to go back and forth between the two parties. In these boroughs, Labour’s pragmatic politics, supported by a growth-dominated logic, has not found space and
opposition to growth remains substantial. In Redbridge, the logic that has emerged could perhaps be described as one of passive resistance. As other parts of London became more expensive and people started moving to Redbridge, the Council struggled to build enough housing to accommodate them, and many ended up living in poor quality accommodation in overcrowded conditions.

Redbridge, like many other outer London boroughs, was known for its family housing and access to the Green Belt, but in recent years has become more diverse and less wealthy, so that its demographics are more aligned with a traditional inner London borough. Yet there is still significant resistance to new development, with political conflicts emerging at over even medium-density developments in sustainable locations. However, contrary to the traditional NIMBY characterisation of homeowners resisting new development to protect property values, the borough is home to relatively large families on lower incomes, who are resistant to new populations with more money coming in, who would put pressure on local services and infrastructure. Such sentiments are reflected in other places, such as Harrow, where there have been organised campaigns against high rise development, such as the ‘No to Tesco Towers’ campaign, where campaigners cite the lack of genuinely affordable homes being provided in similar developments of ‘luxury flats’ across suburban London, and the lack of provision of social or transport infrastructure. In Harrow, Conservative politicians responded to local sentiments and successfully campaigned for re-election in 2022, with fears over tall buildings cited as one of the key reasons for their success (Shaw, 2022). In Enfield, although the leadership of the council has become increasingly dominated by Labour politicians pursuing more market-oriented planning strategies and programmes to boost housing supply and generate significant financial returns for re-investment, this approach has met with resistance. In campaigns for elections in 2022, the local Conservative party group criticised high-density projects that were seen to threaten the heritage character of local built environments and the market value of homeowners and residents, calling for protection of the Green Belt and for any new growth to take place in identified regeneration areas, especially the on-going Meridien One development on a former industrial site in the (Labour-voting) Lee Valley area discussed earlier (Allin, 2022).

On reflection, territorial and demographic shifts have already – as we explored in Figure 1 – led to changing geographies of representative politics, most significantly declining Conservative party control in outer, suburban London. Yet, as the Labour party has taken control of more outer London boroughs, with different territorial and demographic pressures, we can see how multiple logics, even within Labour-controlled authorities, have emerged, which have been under-recognised in empirical studies to date that have compared left- and right-wing local authorities (e.g., Clegg, 2021) – an area worthy of further research. There are also continued demographic changes occurring across the Conservative outer London boroughs, which may lead to further local political shifts in coming years.

Despite being able to distinguish between different logics and politics across outer London, some commonalities are emerging across the territory. Across different representative political territories, we are seeing the emergence of strong local opposition and campaigning against towers and overdevelopment in residential suburbs and established suburban town centres. This resistance partly reflects a protectionist approach typical of traditional suburban voters (homeowning, middle class, etc.), but the stronger emerging narrative is that of resistance to wealthier incoming residents, concern about the lack of provision of genuinely affordable homes in new developments (i.e., the ‘trade off’ to growth is not worth it) and concerns about the ability of local social infrastructure to be able to cope with additional pressure. If resistance to the hard densification model persists and grows, the likelihood is that outer London boroughs will fail to deliver on the London Plan’s housing targets that, as previously explained, have increasingly focussed on outer London. Evidence from
places like Redbridge is that the population will continue to grow anyway and overcrowding may then worsen.

7. CONCLUSIONS

Our paper represents a contribution to the burgeoning urban studies literature on global suburbanisms and their call for more variegated understandings of contemporary urban development processes and explanatory concepts (Keil, 2018; Phelps, 2018). It has drawn on the case of London to examine the form and character of suburban politics that have evolved in relation to housing development and the broader politics of financialised municipal urbanism (cf. Penny, 2022). In our analysis, we have moved beyond a consideration of the differences across cities to draw attention to notable intra-city differences, reflecting and developing insights by writers such as McFarlane et al. (2017) and their call for a stronger focus on contemporary patterns and processes of urban variegation. In so doing, we have highlighted the continuing importance of representative local government in acting as a source of political authority and a site for the articulation and (possible) resolution of territorial conflicts in relation to urban built environments (Regini & Lange, 1989). Our work, therefore, supports those arguing for a renewed theoretical and empirical interest in local government studies, something that authors such as Cochrane (2020) and Barnett et al. (2020) argue has fallen out of favour. We do not, of course, claim that local governments are ‘free’ actors and acknowledge the extent of constraints on their autonomy. But we do highlight why local government and suburban politics still matters.

The paper also makes an empirical contribution in examining the variables that shape the geographies of local government programmes and practices in a global city. We have shown how the growing suburbanisation of London’s population is creating new growth pressures on outer London authorities that also face significant physical constraints on land-use, variegated real estate markets and complex representative politics of place. Rather than characterising this urban environment through the lens of simplified narratives that pit ‘the suburbs’ in conflict with ‘central zones’ (see Holman & Thornley, 2015), we have developed a typology of approaches to housing development based on loose clusters of authorities: pragmatic Labour authorities that are promoting growth around transport nodes to capture value for welfare projects; hyper-entrepreneurial Labour boroughs with high exposure to risk; Conservative-controlled boroughs pursuing agendas of ‘good growth’ whilst continuing to protect green spaces and established residential areas; Liberal Democrat authorities intent on preserving the ‘character’ of their suburban environments and newer Labour authorities in which there is passive resistance to housing development that is not seen by its expanding lower-income populations as ‘being for them’. It is important to note that these clusters possess populations that are larger than most other urban authorities in Britain and would be significant cities in demographic terms in any European or North American context. They are therefore major centres of governmental authority with their own representative political arrangements, alliances and forms of conflict management. What happens in these clusters has a direct bearing on processes and patterns of development both within London and elsewhere.

On a broader canvas, the evidence presented here highlights the interrelations between development outcomes, representative politics and the physical geographies of real places, which limit the capacity of suburban places to generate the types of ‘hard densification’ necessary for land value capture (Germán & Bernstein, 2020). It shows how dominant models and approaches to contemporary planning are driven by what happens in urban centres, with their greater potential for value-extraction, a finding that echoes those of McGuinness et al. (2018) and their criticisms of the ways in which spatial planning priorities are often shaped by the experiences of fast-growing cities and regions. Our analysis has revealed the importance of interactions...
between human and physical landscapes in shaping the evolution of contemporary urban development. It has documented the significance of these polycentric landscapes and contributes to work on global sub-urbanisms and the broader call to shift dominant analytical and policy gazes away from urban centres to where most people actually live and in which some of the most acute public policy conflicts are to be found. In London, as with many other major European cities, local governments and planners are responding to the multiple pressures of a housing crisis, growing populations, selective forms of financialisation and dwindling public budgets and resources – all within a context of boundary constraints and legacies of Green Belt and Open Land policies developed from an earlier era of public policy (see Boelhouwer, 2017; De Weerdt & Garcia, 2016; Tasan-Kok et al., 2019).

The analysis has relevance for cities and urban theory that goes beyond the London context, especially those cities in Europe in which boundaries and development spaces are more constrained. More interventionist spatial policy options that might include a coordinated redistribution of people or firms out of large cities seem a distant prospect, even though they could play a central role in tackling some of these growing pressures. If planning frameworks were to incorporate a broader range of suburban experiences in their formulation, they might be more effective in tackling collective challenges. This might involve a devolution of control over social housing budgets for local governments that enable them to act as direct providers of social infrastructure and housing, rather than working through market proxies or becoming speculative players. Despite the suburbanisation of populations, planning policies are still biased towards the imagined and real needs of central areas and how they support a globally oriented development agenda (Touati-Morel, 2015). This paper adds to the growing literature that challenges the assumption on which these models are built. Rather than being background places that are subservient or peripheral to the formation of new urban agendas, suburbs are relationally embedded in their formation and delivery. Simplifications that focus on the extent to which place politics is NIMBY or YIMBY (yes in my back yard) deflect attention from the variables and factors that shape actually existing practices.

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NOTES

1. By 2023, four local authorities in England – Slough, Croydon, Northamptonshire and Woking – had already been served notices by central government ‘essentially declaring they had run out of money’ owing principally to over-speculation in property and housing markets (House of Commons, 2021, p. 3).
2. Approval gained from the UCL Ethics Research Committee on 28 February 2022, Project ID: 3633/003. Written informed consent was acquired from interview participants, which included agreement for the interview to be audio recorded, for data to be anonymised and used in publications, as well as procedures for holding personal data, in line with data protection requirements.
3. In the May 2022 local council elections, Conservatives won back control of Harrow Council.
4. For example, Croydon’s population in the 2021 census was 390,800. Bromley’s was 330,000.

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REFERENCES


