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# Changing socio-spatial definitions of sufficiency of home: evidence from London (UK) before and during the Covid-19 stay-at-home restrictions

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## ABSTRACT

In this paper, we explore how London residents understand, live, and experience their dwellings. Growing evidence shows that existing housing stock in the UK performs poorly in terms of functionality and flexibility. Policy and planning debates focus on the potential benefits of introducing standards for dwelling size while engaging less with broader questions of how to develop standards. Drawing on an online survey ( $n=234$ ) and in-depth interviews ( $n=22$ ) concerned with experiences of housing, we explore Londoners' understandings of housing design sufficiency. Our findings show that experiences of dwellings, and understandings of those dwellings as sufficient for occupants' needs, vary by household type and dwelling occupancy patterns. Moreover, social constructions of dwelling sufficiency are related not only to the size of dwellings, as often described and conceptualised by housing authorities in the UK, but also to the type, form, and layout of rooms. We further show that stay-at-home restrictions imposed in response to the Covid-19 pandemic challenged understandings of dwelling size and dwelling sufficiency. This prompts a discussion of the assumptions made in UK housing design regarding dwelling use, dwelling users, and future housing.

**KEYWORDS:** Housing design; dwelling sufficiency; Covid-19; home; affordances

## Introduction

Since the 1980s in England, in the context of pro-market planning reforms and the weakening of existing planning frameworks, there has been growing attention to housing design quality issues and, in particular, dwelling sizes (Karn & Sheridan, 1994; Roberts-Hughes, 2011). Morgan and Cruickshank (2014) estimated that around 55% of dwellings in England were below the Nationally Described Space Standards (NDSS; DCLG, 2015).

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In the same vein, Özer and Jacoby (2022) have recently shown that in inner London 61% of dwellings are below the dwelling sizes recommended by the London Design Guide (Mayor of London, 2010). Hubbard et al. (2021) showed that between 2012 and 2019 in London 6% to 12% of Energy Performance Certificates (EPCs) were issued for dwellings smaller than 37 m<sup>2</sup>, the minimum dwelling size permitted by NDSS. These figures show that beyond informal arrangements such as ‘beds in sheds’ (Schiller & Raco, 2020) and purpose-built ‘micro-living’ arrangements (Harris & Nowicki, 2020) London’s existing housing stock consists of many dwellings that are, by formal measures, small and sub-standard.

Issues of design are not limited to dwelling size, however. Research has also highlighted issues with dwelling layouts and the ways rooms are designed (Özer & Jacoby, 2022; West & Emmitt, 2004). Here, the age of housing stock in the UK is worth considering—for instance in London 35% of the housing stock dates back more than a hundred years (VOA, 2018). Mostly made up of terraced houses, the design and layout of London’s pre-war housing stock reflect contemporary domestic practices and spatial norms (Lawrence, 1981), which differ from today’s practices and norms. Research has noted that to overcome this mismatch, some residents extend kitchens and add more bathrooms (e.g., to tackle the spatial pressures created by new domestic ideals and norms around sociability and cleanliness [Hand et al., 2007]). Moreover, many of them are no longer single-family homes, but were at some point split into flats (Hamnett, 2003), reflecting, to a certain extent, changing household sizes and market norms. Not only are these flats often at the smaller end of the housing market, but they are also often poorly designed and laid out.

In this article, we are concerned with understanding how residents understand, live, and experience the housing stock in London. Debates on dwelling size in the UK have long focussed on the potential benefits of introducing space standards while engaging less with the question of how those standards should be developed. Where space standards have been introduced, minimum dwelling sizes are calculated systematically from furniture dimensions deemed sufficient for the comfortable conduct of the typical domestic activities of a family based on anthropometrics (e.g., Mukhtia, 2020). However, the evidence base underlying the assumptions used to develop extant space standards in England warrants reassessment. Notably, related standards, and in particular bedroom standards, have been the subject of numerous critiques for their basis in narrow and outdated understandings of how dwellings are occupied (Carr, 2017; Greenstein et al., 2016). Concomitantly, supply-side studies of dwelling occupant preferences and needs have been conducted mostly in relation to buyers in the UK (Commission for Architecture & the Built Environment, 2005; Finlay et al., 2012; Leishman et al., 2004), omitting not only other types of tenures (Bate, 2018; Easthope, 2014; Heath et al., 2018) but also household types other than families (Blunt & Dowling, 2006). Importantly, occupancy levels in London have been shown to differ significantly

between various types of tenures and this variation mediates the ways dwellings are used and experienced (cf. Morgan & Cruickshank, 2014; West & Emmitt, 2004). Likewise, different types of households have different needs and expectations of domestic space. For example, Tervo and Hirvonen (2019) found significant differences between the dwelling sizes available to 'solo dwellers' and that of the dwellings they sought. Similarly, in the UK context, Heath et al. (2018) noted how shared households living in houses that are primarily designed for families often had difficulties in managing their domestic lives.

While there is a widely agreed assumption that dwellings should be bigger (or at least meet minimum size standards) in the UK, there are concomitantly emerging discussions about building smaller dwellings. Alongside market preferences for purpose-built small housing typologies (Harris & Nowicki, 2020), there are increasingly staunch arguments for the reduction of dwelling sizes amid intensifying environmental issues (Karlen et al., 2021). These arguments are often raised in contexts in which housing supply consists of significantly larger, single-family homes such as the US, Australia, New Zealand and Canada (Cohen, 2020), but they also warrant attention in other countries (Naess & Xue, 2016). Such research, with its focus on the interrelationships between space, use and energy consumption, stresses the need for socio-material approaches to understanding sufficiency and dwelling features in relation to design expectations and social and spatial norms (Ellsworth-Krebs et al., 2018). Understanding residents' experiences, needs and preferences is also essential for the management of the housing stock, itself a critical need given that '80% of buildings in 2050 [the UK's net zero target year] have already been built' (UKGBC, 2022).

In this article, we analyse how London residents understand, live, and experience their dwellings, and how these things in turn relate to the spatial qualities of the existing housing stock, and regulatory space standards that regulate future housing. We respond to calls to further our understanding of the relationships between the materiality of homes and residents' domestic practices (Clapham, 2015; King, 2009; Power & Mee, 2019) and to contribute to resident-oriented approaches in housing studies (Kuoppa et al., 2020).

An affordance approach (Gibson, 2014[1979]) guides our analysis—an approach that has been theorised for housing studies by Coolen (2006) and Clapham (2015). In housing studies, the affordance approach moves beyond 'functionality' or 'usability', which drive housing production and regulation, and places an equal focus on the needs, routines, practices and desires of individuals (Clapham, 2015). In so doing, it offers a framework through which the physical aspects of dwellings and the meanings of home, which are often discussed and researched separately in the literature, can be analysed together. Affordance exists at the intersection of 'the possibilities that the built structure of a house opens up for human use' and how the individual intends to use it (p.74). It seeks to account

for the ways that 'environmental features [of dwellings] are experienced as having a functional meaning for the individual' (Coolen, 2006, p. 187). Drawing from Rapoport (1990[1982]), Coolen argues that these functions could be 'everyday meanings', such as daily domestic activities, as well as 'middle-level meanings such as identity, privacy, status, wealth, power' (p. 189). In this way, the affordance perspective is closely related to the practices of homemaking as discussed in the critical geographies of home.

Critical geographies of home recognise home as at once a material and affective space entangled with imaginaries, feelings, and meanings (Blunt & Dowling, 2006; Mallett, 2004). Home is a space of security, privacy, belonging, comfort, and stability (Bate, 2020; Easthope, 2004; Gorman-Murray, 2007; Power & Mee, 2019). These feelings and meanings are created through homemaking practices, which include, among others, controlling the materiality of dwellings, i.e., the shaping, organisation, maintenance and use of domestic spaces, and objects and belongings within them (Dowling & Mee, 2007; Gorman-Murray, 2007; Holton & Riley, 2016). While interactions with the space and objects of dwellings lend meaning to them, these interactions are shaped by and add to residents' ideas, identities, social relations, experiences and expectations. Homes are continuously made, remade and unmade in the life course of dwellings and people as their perceptions, relationships, and social and economic positions change (Baxter & Brickell, 2014; Byrne & Sassi, 2022; Devine-Wright et al., 2020).

While both affordance perspectives and homemaking suggest a plurality in the ways homes are experienced and made, the literature also recognises that these are simultaneously related to broader social and cultural understandings. There are some homes that 'are imagined to be 'better', more socially appropriate and an ideal to be aspired to' (Blunt & Dowling, 2006, p. 100). In the context of the UK (and in general, in Anglophone countries), these normative understandings of home value, for instance, nuclear familial living over other living arrangements and home ownership over private or social rental (Bate, 2020; Soaita & McKee, 2019). Moreover, and of particular relevance to the present discussion, certain dwelling features such as dwelling type, size, and layouts also form part of these imaginaries. For instance, houses are viewed as the appropriate dwelling type for families, while blocks of flats 'are viewed as unhomely, temporary, less valuable [...] and unsustainable for families' (Kerr et al., 2020, p. 17; see also Baxter, 2017). There are social norms around housing careers involving dwelling sizes 'progressing' from smaller to larger dwellings (Sandberg, 2018), which are perceived as befitting for middle-class family values and practices such as status, individualisation, privacy, togetherness and tidiness (Dowling & Power, 2012). Such imaginaries are produced and reproduced not only in the housing market and mainstream housing designs, but also through housing policy, regulation, as well as media and popular culture (Carr, 2017). This article contributes to debates on

the overlaps and disconnections between these dwelling designs and standards, and the way people live, understand and experience their homes.

The critical literature of home has placed a focus on how homes are made by residents living in diverse social, and economic arrangements other than those associated with the imaginaries of home discussed above. For instance, research has drawn attention to homemaking in tenures such as private rental (Bate, 2020; Soaita & McKee, 2019), social housing (Mee, 2009) and temporary accommodation (Harris et al., 2020), and in living arrangements such as shared housing (Barratt & Green, 2017; Heath et al., 2018; Holton & Riley, 2016; Nasreen & Ruming, 2020) and multigenerational living (Easthope et al., 2015; Klocker et al., 2012). Similarly, diverse dwelling types, sizes, and layouts have also featured in this literature. These include rich accounts of how modernist domestic interiors are lived in (e.g., Llewellyn, 2004), as well as recent studies of how materialities of new build dwellings are experienced (Blanc et al., 2020; Kerr et al., 2020; Stevenson & Prout, 2013), studies of how social and domestic identities and ideals are negotiated in certain dwelling spaces and layouts (e.g., Dowling, 2008), and studies of how residents of small homes negotiate their housing situations in relation to normalised housing expectations (Preece, McKee, Flint, et al., 2021). This paper contributes to this literature by focussing on how Londoners experience the materiality of existing housing stock that features a diversity of dwelling types, sizes and layouts, while also attending to their living arrangements (household types and occupancy levels) and contributes to debates around housing design and regulation.

The data analysed in the present paper comprise online survey data and follow-up semi-structured interviews that cover a cross-section of diverse dwelling features and living arrangements in London. Data were collected between June and August 2020, when strict Covid-19 restrictions were still in place. The timing of this data collection enabled a particular focus on how homes were used and experienced during the pandemic, when existing work, care, and domestic labour practices were severely disrupted, our relationships to home and the meanings of home were altered (Byrne, 2020; Devine-Wright et al., 2020), and issues of housing quality were exacerbated (Brown et al., 2020; Byrne & Sassi, 2022; Horne et al., 2020; Soaita, 2021). In this paper, our analysis complements and builds on the studies discussed in the preceding paragraph through its focus on how a range of residents of working age in London experience the spatiality and affordances of their dwellings, and on how these experiences were challenged in the Covid-19 pandemic (in particular in relation to household dynamics and home working practices). Finally, with a view to the policy and practice implications of our research, the paper also attends to how our findings might inform the design and delivery of future housing (Doling & Arundel, 2020; Rogers & Power, 2020).

## Methods

The data presented in this paper were collected as part of a larger mixed-method study that supplemented the online survey ( $n=234$ ) and follow-up interview data ( $n=22$ ) analysed here with an architectural analysis of the existing housing stock in London. In the analysis that follows we draw on the survey and interview data (which include floorplans some interviewees provided for their homes) only.

Survey participants were recruited through social media websites, neighbourhood groups and housing estate groups associated with different common housing typologies in London (e.g., terraced houses, mid-century blocks of flats, and recent developments) between May and June 2020. The survey included blocks of questions on 1) the general physical characteristics (e.g., layout) of the respondent's dwelling, 2) household and respondent characteristics (e.g., household type and age), and 3) the respondent's experiences of the size and spatial qualities of their dwelling (and the affordances these conferred). Enquiring about experiences of the spatiality and affordances of dwellings is not straightforwardly compatible with a survey (cf. Kuoppa et al., 2020). Affordances are situational and intentional, and this raised important methodological questions such as the choice of affordances included in the survey 'among the many potential ones' (Clapham, 2015, p. 77). We decided to therefore focus on several routine domestic activities and how these were (or were not) accomplished. This was guided by our premise that affordances would become visible and meaningful when domestic activities at home were hard to accomplish. We asked, for instance, whether residents were able to have meals on a table in the kitchen, whether they had enough space to invite friends and family for dinners and get-togethers, and whether they thought they had enough storage. Finally, survey respondents were asked to rate their dwelling in relation to their needs on a 7-point scale (4 being sufficient), a measure used as a dependent variable in our wider analysis.

Conducting the survey during the first wave of Covid-19 stay-at-home restrictions in the UK (in June 2020) implied that the experiences of homes reported by survey respondents would likely be quite different from what they would 'normally' be. This posed both a challenge and an opportunity. Accordingly, the questionnaire was organised into two sections so that respondents could report their changing experiences of home as well as reflect on their previous experiences. In addition, two open-ended questions about physical changes residents made to their homes, and constraints they experienced with their homes during the lockdown, were included. Responses to these questions were open coded together with our interview data.

The survey data served two main purposes, namely: providing an 'extensive' (Sayer, 2010, p. 242) overview of how different spatial characteristics of dwellings, affordances of different rooms, and household types related to dwelling sufficiency ratings<sup>1</sup>; and informing the development of the interview method.

At the end of the survey, the participants were asked whether they would be willing to participate in a follow-up interview. A total of 97 people expressed their willingness to do so. In the follow-up interviews, we aimed to qualitatively and 'intensively' (Sayer, 2010, pp. 241–251) explore how different households understand their dwelling size and layout, and how they use and experience them. As such, from the pool of potential follow-up interviewees interview participants were purposively sampled (using information collected in our survey) for maximum variation to include people living in different types of dwellings (flats, houses, and maisonettes with different numbers of bedrooms), in dwellings with different features (cf. Coolen, 2006), and in dwellings experienced as sufficient and not, in line with our exploratory aims. For each group identified, demographic variation was also sought, and invitations were sent to 75 participants, in three phases. In each consecutive phase, those who responded were interviewed, and others who either did not respond ( $n=43$ ), expressed reasons for not being able to attend ( $n=6$ ), or scheduled but did not show up for the interview ( $n=4$ ) were replaced with another respondent who had given similar responses in the survey. The interviewing process was guided by the principle of theoretical saturation (Low, 2019), with the recruitment of further interviewees stopping once the analysis of new data added little to answering our research question. While our sample of interview participants covered a variety of dwelling and household types, some demographics hardest hit by the pandemic were not easy to access and were less well represented. As a result, only two people who rated their dwelling size very low ( $n=2$ ) were featured in our interview sample, and most of our interviewees were aged 26–45 (Table 1).

Interviews took place in August 2020, using a semi-structured topic guide that covered: the interviewees' use of their dwellings before and during the pandemic; perceptions of the suitability of dwelling sizes, types, and layouts to household needs; preferences for different living area arrangements; and physical changes made to dwellings. Before each interview, participants were provided with a project information sheet before being asked to provide informed consent. They were also asked for a floorplan of their dwelling, and all but three participants provided this. These floorplans gave us, on the one hand, dimensional information that could be compared to space standards. On the other hand, they helped the interviewees and/or researchers to contextualise, during the interviews and/or at the analysis stage respectively, accounts provided of how dwellings were used and experienced. Each interview started with a question about the respondent's typical daily routine before the pandemic to understand prominent domestic activities and spaces. The interview schedule then turned to questions about uses and experiences of, and changes to, the domestic spaces participants referred to. As relatively focussed follow-up interviews, interviews lasted between 25 and 40 minutes. All interviews were conducted via Zoom, recorded, and transcribed, and pseudonyms are used for all interviewees.



**Table 1.** Characteristics of survey and interview participants.

	Survey participants		Interview participants	
	<i>n</i>	%	<i>n</i>	%
Participant characteristics				
Age				
18–25	14	6.0%	1	4.5%
26–45	174	74.4%	19	86.4%
46–65	39	16.7%	1	4.5%
65+	7	3.0%	1	4.5%
Household type				
Living with partner/spouse and with no children	99	42.3%	7	31.8%
Living with partner/spouse and with dependent children	54	23.1%	5	22.7%
Living with other unrelated adults	34	14.5%	7	31.8%
One-person household	22	9.4%	2	9.1%
Living with partner/spouse and with non-dependent children	9	3.8%		
Lone parent with dependent children	7	3.0%		
Lone parent with non-dependent children	5	2.1%		
Living with partner/spouse and unrelated adults	4	1.7%	1	4.5%
Dwelling type				
Flat	139	59.4%	13	59.1%
House	95	40.6%	9	40.9%
Number of bedrooms				
Studio	4	1.7%		
1 bedroom	60	25.6%	4	18.2%
2 bedrooms	74	31.6%	9	40.9%
3 bedrooms	54	23.1%	5	22.7%
4 bedrooms	24	10.3%	2	9.1%
More than 4 bedrooms	18	7.7%	2	9.1%

We adopted a hybrid inductive-deductive thematic analysis approach (Fereday & Muir-Cochrane, 2006) to analyse the interview transcripts. First, we deductively coded for themes (such as dwelling size, living area arrangements, dwelling layouts, and dwelling use before and during the lockdown) pertinent to our research question. We then used open coding to inductively generate other themes pertinent to our research aims.

### Socio-spatial definitions of dwelling sufficiency before stay-at-home restrictions

In the following sections, we present our findings on the understandings of dwelling sufficiency of residents in London, first before, and then during the stay-at-home restrictions. Our survey data suggested that the experiences of sufficiency differed between households living in dwellings that had (or lacked) certain spatial features. Our interview data additionally, showed that the experiences of insufficiency and affordances sought varied by living arrangements, household types, and occupancy levels. In addition to familial households (couples and couples with dependent children), shared households (of various arrangements) featured prominently in our

follow-up interviews. With an emphasis on how households differed in the affordances they sought from their dwellings and understood dwelling sufficiency, we discuss the material features of the existing housing stock reflecting on the way standards prioritise the functionality of dwellings.

Our discussion follows the experiences of individual rooms and spaces of dwellings that we identified as significant in our survey data. This allows—in line with our research aims—to analyse dwelling features and living arrangements together. It also allows the analysis of different dwelling types together. In our data, we observed a general relationship between dwelling types, household types, and occupancy rates, and it was difficult to disentangle the dwelling types from the living arrangements in our data. For instance, in our survey, 68% of families with dependent children lived in houses, reflecting the broader norms around houses as being the preferred dwelling type for the family (Dowling & Power, 2012; Kerr et al., 2020). In contrast, shared households (85%) and one-person households (77%), whose spatial needs are not well conceptualised in practice (Tervo & Hirvonen, 2019), were mostly living in flats. Moreover, participants living in houses were also more likely to have spare rooms (76%) than those living in flats (28%). These also reflect the broader differences in the number of bedrooms contained in flats and houses in London (Drury & Somers, 2010). In our survey, 79% of respondents living in flats indicated that they have one or two bedrooms and 75% of respondents living in houses indicated that they had more than two bedrooms. Overall, flats were more likely to be experienced as insufficient than houses, and as we discuss below, this was a result of both material limitations and living arrangements.<sup>2</sup>

### *Kitchens and living rooms*

Our survey data suggested that homes experienced as insufficient were more likely to have working kitchens in which meals could not be eaten.<sup>3</sup> Since the early twentieth century, the kitchen was primarily conceptualised in relation to the preparation of meals, and its provision has been standardised in relation to the equipment and movement space required for this (e.g., Ministry of Health, 1944; Mayor of London, 2010). Among interview participants who described their kitchen as insufficient, only Fredrik, who lived with his partner in a flat with a markedly sub-standard kitchen (4.5 m<sup>2</sup>[-2.3 m<sup>2</sup>]),<sup>4</sup> reported issues with the space for preparation of meals and basic kitchen equipment: ‘because it’s so small, we have just a very small fridge. So, I have to consider [grocery shopping] and make [meal] plans... [I have to] optimise the use of the space.’ Others who described their kitchen as insufficient highlighted the limited sociability their kitchens afforded with both guests and household members. For instance, Keela, who lived with her boyfriend, reported her kitchen (11 m<sup>2</sup>[+0.6 m<sup>2</sup>]) adequate for their needs ‘except when [they] had somebody over or visiting’ noting that ‘somehow everything tends to gravitate towards the kitchen...

[Guests] sit down there and stay there and then I need to get them to the living room where there's more space and more places to sit.'

Scholarship has highlighted the emergence of kitchens as a place of consumption, in addition to being a place of production (Meah, 2016). Hand and Shove (2004), studying the popular magazines on housekeeping in the last century, have observed a shift towards an understanding of cooking and eating as 'sociable lifestyle activities' and kitchens as 'the places of leisure and as places the whole family thinks of as home' (pp. 246–247). Concurrently, we observed a general preference for combined 'open-plan' kitchen-living room arrangements, which have also become more popular in both new-build housing and alterations of the older housing stock (Özer & Jacoby, 2022). Participants from familial households who had combined kitchen-diner-living room arrangements, were content with these domestic spaces for the sociability with both guests and other family members they afforded: 'when my kids come down, we spend a lot of time just doing the cooking and chatting' (Ellen, living with her husband and a lodger), 'if I'm cooking and my husband's watching TV, it's nice for it to be more social' (Hannah, living with her husband).<sup>5</sup> Those who had young children, additionally highlighted the way these spaces allowed them to supervise their children while doing other domestic tasks (cf. Dowling, 2008). For instance, Kelly, who lived with her husband and two young children in a maisonette in which the living area was arranged as a separate kitchen (9m<sup>2</sup>[+1.5 m<sup>2</sup>]) and a living room (15m<sup>2</sup>[–4 m<sup>2</sup>]), was about to move to a new house:

[Having a] separate kitchen and living room is difficult with the children. It is nice to be able to close the doors of the kitchen if you're cooking but you really want to be able to see them as well. So, the new place will have it all opened up, which I think will be better for family living.

While family households tend to be characterised by sharing of material goods, shared routines, divisions of labour, and dynamics of care, such practices exist varyingly in shared households (Clark et al., 2018; Heath et al., 2018; Holton, 2016; Holton & Riley, 2016). This variation was most evident in our interviewees' discussions of kitchen and living areas, spaces that were typically shared by all household members. Some interviewees from shared households described their kitchens as mostly for basic activities such as cooking, while others described them as the centre of household sociability (Heath et al., 2018). For instance, Rachel reported how 'the kitchen is the place where I think we spend the most time... the kitchen is nice, if someone's doing something, you can sit there and talk to them.'

Participants from more sociable shared households reported a preference for combined kitchen-living room arrangements, which tend to be larger and allow multiple household members to socialise while they are practising their daily routines, if not practising them together. Similarly, separate kitchens were lamented in such households. For instance, Irini, who shared a house with two others and had a standard-size kitchen (8m<sup>2</sup>[+0.5 m<sup>2</sup>]), reported her frustration with their kitchen as she and

her housemates could not cook at the same time or have conversations while one of them was cooking. Those in less sociable households, however, were critical of combined kitchen-living rooms as they did not afford conducting their daily activities without the interference of other household members. Such householders spoke, in particular, of their negative sensory experiences of home (Pink, 2004). For instance, Marc, who used to live with a lodger in his standard-size two-bedroom flat with a combined living room, elaborated on his own similar experiences:

When I used to share the flat with somebody else, I really honestly quite disliked [the open-plan kitchen] ... Because I was sharing with a lodger, not a partner. And if they were using the kitchen, it really made the rest of the use of the space quite difficult. Not even on the basis of food smells, just the noise that was created. And if I just wanted to watch TV, read or do anything, I just couldn't do that independently. It was very, very annoying. And I hated not having a separate kitchen.

Our data point to the importance of the design of 'shared' areas for shared households (Heath et al., 2018). Bar one participant, all sharers were living in dwellings designed for families, where kitchens and living rooms, along with bathrooms and utilities were shared and bedrooms were private. Vittorio, who was living in a four-bedroom flat that had been 'refurbished for a household like [his] to include a 'generous' dining kitchen (24m<sup>2</sup>[+10 m<sup>2</sup>]) and living room (19m<sup>2</sup>[+1 m<sup>2</sup>]), reported:

In this house, ninety per cent of my time in the evenings is in the kitchen chatting or cooking with whoever is around, in the living room where we have the screen for films and desks with computers.

Our data also included instances in which rooms intended to be living rooms were repurposed as bedrooms, reflecting the expensive and unregulated rental housing market in London (Clapham et al., 2014; Nasreen & Ruming, 2018). Such arrangements pose, potentially, difficulties in relation to feeling of home as a place of comfort and privacy and issues of health and well-being associated with residential overcrowding (Perreault et al., 2019). For instance, Eylül lived in a one-bedroom flat, used the living room as her bedroom and rented out the smaller bedroom for short and long periods. Justifying this sacrifice of communal space, she described how in her home 'the kitchen is relatively big (12.3m<sup>2</sup>[+1.9 m<sup>2</sup>]), so I fitted a [small] sofa and a small table'. Referring to her lodger, 'I don't know how she really handled that... I think it would be very difficult for me to live [in the room she rented out]'

### **Bedrooms**

When asked about their bedrooms, interview participants tended to use single adjectives such as 'small' and 'large', as well as 'good-sized', 'decent-sized', 'well-sized' to describe them. This suggested that our interviewees

have understandings of a standard bedroom size, with interview data further indicating that these were defined in relation to basic furniture. For instance, Marion, who lived with her boyfriend in a two-bedroom flat, said that her bedroom 'doesn't need to be any bigger and it fits everything it needs to.' While such a view aligns well with how current standards are calculated, i.e., in relation to some basic furniture, the furniture participants considered as essential differed both between sharers and members of familial households and from the ones included in the standards. For respondents in family households, the standard bedroom had to fit a bed and clothes storage. Additionally, sharers also considered desks to be an essential piece of bedroom furniture, even though most of them were professionals with regular office jobs (rather than students). The furniture participants referred to and the ones used for the calculation of standards seemed to differ particularly in terms of the amount of storage. For instance, while there is an allowance for a desk in recent space standards, those who had standard-adherent bedrooms had more space dedicated to storage of clothes (and other things e.g., sports equipment) than allocated in the standards and they reported that they would not be able to fit a desk if they wanted.

In addition to using the adjectives mentioned above to describe their dwellings, participants also commonly used 'by London standards' to qualify their descriptions of their bedroom size, thereby demonstrating that their understandings of bedroom sizes were equally shaped by their experiences with London's housing stock, where bedroom sizes are reported to be generally smaller relative to space standards (cf. Finlay et al., 2012; cf. Özer & Jacoby, 2022 ). Concurrently, even though they could not always fit the furniture they wanted to in their bedrooms, they did not necessarily consider their bedrooms as insufficient. For instance, Carrie and Callum, who wanted to have but could not fit a dressing table to their bedroom, immediately added that this is 'only because' they had to fit more clothes storage.

In shared households, bedrooms have been shown to be particularly important to household members because they are demarcated as private spaces—as spaces where household members have total control of the space, keep personal possessions, and conduct individual activities (Heath et al., 2018). Feelings and understandings of home have, therefore, been shown to largely centre around the private bedrooms in shared households. This was evident in our interviews too. Sharers' narratives of their homes often focussed on their bedrooms and they described how they arranged (or could not) their furniture and belongings in their bedrooms. Despite this particular significance, sharers' understandings of whether their bedroom was sufficient or not mostly related to whether or not they could fit essential furniture, i.e., a wardrobe, bed and a desk: 'It's great. It's big enough for a double bed, wardrobe and a desk'. Those who reported experiencing their bedrooms as small, did so on the ground of not being able to fit essential

furniture. They found themselves trading off certain uses and expanding their bedrooms to other parts of the home, as long as the arrangements with other household members allowed. For instance, Elpida, who had a 'small' bedroom ( $7\text{ m}^2[-1\text{ m}^2]$ ), had to locate her desk in the open-plan kitchen. Elsewhere, Filippo said his housemates had 'very small' bedrooms ( $5.5\text{ m}^2[-2.5\text{ m}^2]$  and  $6.5\text{ m}^2[-1.5\text{ m}^2]$ ) noting that they could only fit beds in their rooms and had to use the understairs storage and utility room as wardrobes.

### ***'Overspill' spaces and spatial separation***

Throughout the interviews, residents who lived in older terraced houses and converted flats spoke of 'secondary spaces' such as outdoor spaces, understairs storage, landings and sheds in relation to domestic practices such as: housework and drying clothes; studying and working; and storing, organising, and keeping things in order (Kuoppa et al., 2020; see also Cwerner & Metcalfe, 2003; Woodward, 2015). For instance, Keela, who lived in a ground floor flat converted from a Victorian terraced house, referred to the small unheated room between the kitchen and the garden variously as a storage shed, laundry room, and office throughout her interview. In contrast, in homes experienced as insufficient, constraints on such affordances, particularly in relation to storing belongings, were deeply felt.<sup>6</sup>

Needs for storage, homeworking, but also drying clothes, are not accounted for well in design standards or existing housing stock in the UK (Blanc et al., 2020; Finlay et al., 2012). Ideas of efficiency and rationalisation inherent to standards, particularly in relation to storage, do not correspond to the way homes are actually used (Cwerner & Metcalfe, 2003). Interview participants spoke of the secondary spaces they had in their dwellings as essential to their homes and daily practices, and reported that these spaces helped mitigate some spatial constraints they experienced. These findings suggest an additional spatial explanation for experiences of insufficiency in flats which tend to have more limited provision of such spaces. This is strengthened by our observation that participants, who were living in flats and reported their dwellings as sufficient, generally had a spare room that functioned in a similar manner to these other spaces (cf. Morgan & Cruickshank, 2014; West & Emmitt, 2004). Some interviewees, Ryan and İdil, for example, had a hard time defining their spare room as they used it as an 'overspill' room: a place for extra storage, a study, a place to dry clothes, and a bedroom for guests.

Interview participants referred also to other related spatial qualities of houses, such as their having multiple levels, as helping mitigate other material constraints they experienced. For instance, shared households and families with young children spoke of how different levels in their home helped them get some privacy and manage potential conflicts over the noise (Kerr et al., 2020). As Kelly, who lived with her husband and two

children in a converted three-bedroom maisonette, put it of the vertical separation of communal and sleeping areas in their house: 'we can watch TV, we can play music, we can do the washing up without worrying about the noise'. In the absence of such a possibility, Carrie and Callum, who lived in a flat, had to allocate their larger bedroom to their children as it was further away from the living room even though they experienced space shortages in their own bedroom.

## Homes during stay-at-home restrictions

Having explored various dimensions of experiences of dwellings in London, we now turn to uses and experiences of home in London during a period of recent Covid-19 stay-at-home restrictions. While invariably challenging, the imposition of restrictions during data collection did enable us to look at the ways that London homes were experienced in a moment when many people were effectively housebound. During the pandemic, existing work, care, and domestic labour practices were disrupted. Moreover, many activities that had typically been undertaken outside of homes (in workplaces, public spaces, third places and so on) were internalised to homes. As a result, increasingly extensive and diverse uses of homes were sought, as the quoted open text response to one of our survey questions about the changes made during stay-at-home restrictions indicates:

Dining area is now a chilling area. Landing is a gaming play area. Kitchen breakfast bar is now a workstation. Hallway now a storage area. Small garden is an exercise area ... Everything has an area and the house is packed to the brim.

More than half (54%) of our survey respondents reported that they made changes in their homes during the Covid-19 lockdown. They most frequently reported needing to create spaces for work and study as the reason behind those changes. Even among those who already had dedicated workspaces, these workspaces were characterised as insufficient during lockdown as multiple household members needed to work and study from home. Resultantly, participants created workspaces at home in multiple ways, varying in relation to the material features of dwellings and household relationships (Blanc & Scanlon, 2022; Goodwin et al., 2021).

In familial households, kitchens and living rooms were the first to be transformed into workspaces given the ready availability of dining tables. However, sharing the same room, and the same table, with other household members was routinely portrayed by our survey and interview respondents as undesirable on privacy and distraction grounds (Goodwin et al., 2021). Household members who worked or studied at home, therefore, sought to establish private workspaces, which meant a workspace in a separate

room where they could avoid distracting sounds and activities of other household members. Those who had spare rooms or bedrooms big enough to place a new desk could comfortably—both in material terms and in terms of conflicts with other household members—set up private workspaces. Similarly, those living in houses could use the ‘overspill’ spaces we previously mentioned to set up workspaces. For instance, several survey respondents said they placed a desk on the landing or in unheated utility rooms at the back of their dwelling.

Participants who were experiencing their dwelling as insufficient struggled. Besides the availability of material space, issues such as a dwelling’s Wi-Fi range (particularly in the older housing stock with thicker walls and deeper plans) further demarcated what counted as available domestic workspace. Some reported that their homes did not afford maintaining a single, dedicated workspace and they co-opted various available surfaces such as their bed, ‘kitchen counter’, the ‘top of the fridge’, or a ‘dressing table’ as makeshift desks. Others procured desks for home use, which created knock-on space-use issues. Respondents reported how their workspace limited the ‘access to bathroom’, ‘view of TV’, ‘use of kitchen’, ‘access to cupboards’. Others reported how they had to declutter, store or throw away some furniture (including furniture that they frequently used before the pandemic) to create a space for a desk.

Despite the variety of ways the workspaces were set up, familial households’ accounts of the pandemic were centred around the living areas, which were allocated to at least one household member as a workspace. Underpinning these accounts was the feeling that kitchens and living rooms, understood as ‘the heart of home’, were no longer ‘homely’ (Blunt & Dowling, 2006). Feelings of home, created by residents’ use of spaces and the arrangement of objects and belongings, were interrupted by new objects that did not belong to the home (Clark, 2000; Devine-Wright et al., 2020). Survey respondents reported ‘[their home] feels more like an office due to two massive screens and two laptops occupying the central position [dining table] in the flat’; ‘We now have an office chair in our living area.’ Hannah, an interviewee from a familial household, articulate the emotional consequences of these spatial disruptions well:

The first part of lockdown was probably harder while we both got used to working in the same room... even though... offices... I would work in an open plan office with other people... just the living room’s not so well set up ... I have a sort of a small desk here, and then there’s a kitchen table behind me that my husband works from. So we have our own workspaces, but getting used to that, that took a bit of a while. And I think we’re often finding at the end of the day, we’d actually go to the bedroom for just like an hour just to get out of the room.

In most cases, these new spatial arrangements also disrupted routine familial practices: ‘we no longer have somewhere to eat dinner unless we



remove all of our work equipment every evening which isn't possible'; 'the desk takes up most of the space that was once used for sitting and watching tv'.

Where living areas were allocated as workspaces to only one household member, understandings of living areas as the 'common' areas of home were challenged. As they were used as 'private' workspaces for most of the day, their functions were overwritten by whose workspace they had become. Limitations arose especially in combined kitchen-living rooms, as other household members could not use neither 'living rooms' nor 'kitchens' during the day. Marion, who was using the kitchen table for work, reported how her boyfriend had to ask 'just give me half an hour in the morning and over lunch to have [the dining] table'.

In working familial households, (often gendered) struggles were evident in arrangements on the division of the space (Hank & Steinbach, 2021). In our data, we observed that women were more likely to be allocated spaces that continued to be shared (e.g., kitchens or open-plan kitchen-living rooms) to serve as their lockdown workspace, whereas men occupied workspaces that could be privatised more easily (cf. Devine-Wright et al., 2020). In discussing the organisation of home life for telework, Tietze and Musson (Tietze & Musson, 2005) drew attention to the complex dynamic of work culture with traditional home life and the social relationships at work and at home. Accordingly, for male teleworkers in their study, 'it was easier to carve out uninterrupted work time at home than at the office' as wives took 'on gatekeeper roles to protect undisturbed work time—screening access, assuring silence' (p. 1341). 'The living room is his office, I don't really go there during the day... the door is open and he doesn't mind [if I go in the living room] but that's his space now', said Keela, who likened living under lockdown to 'old-fashioned village life'. Practically, she reported how she took sole charge of all chores that were previously shared between her and her boyfriend and 'the way I use my home has changed a lot because I stay at the back of the house in the kitchen and in the garden'.

In some households, living areas were allocated as workspaces to multiple household members. This was, most often, in flats with combined kitchen-living rooms or dwellings with very small working kitchens. While those living in dwellings with separate dining kitchens and living areas still had two rooms that were available to them (other than bedrooms) in which workspaces could be set up, those living in dwellings with combined living areas were left with only one non-bedroom that they could use as workspace. In these instances, negative sensory experiences, previously observed predominantly in the common areas of shared households only, came to characterise spaces in other household types. Interviewees in such arrangements spoke of strategies they developed to mitigate the issues of privacy and distraction, which in return, limited their use of the room. Lola, who set up her desk in her dwelling's open plan kitchen-living room while her partner was using the dining table, reported having set up her workspace to face towards a wall and using headphones to diminish

distractions from her partner and to direct her camera away from the kitchen. Several participants reported that they would have to relocate to separate rooms (often to the bedroom to work on the bed) for online meetings and voice calls, when the issues of privacy and distraction were most prominent. In these situations, rooms that provided better backgrounds for video calls and were better lit were taken by household members who had online meetings (cf. Goodwin et al., 2021).

While workspaces and work-related objects were 'taking over' most living areas, in households with young children, participants reported how play spaces, toys and children's equipment were the things that disrupted the materiality of their home and their home- and work-related practices. One survey participant reported: 'our entire home is now set up for the kids, we are living among their toys and equipment, and in chaos'; another adding that they use 'their bedroom as living room so children can take over the real living room' and they 'never get to sit on the sofa and feel quite limited in the house'. Such accounts chime with Dowling's (2008) study, which explored how mothers with young children, wanting to be able to supervise their children and 'keep a respectable home', struggle with the children's toys and clutter in their open plan living areas (p. 547). In turn, we observed how issues of children's 'clutter' were more strongly felt in dwellings with combined kitchen-living rooms. Carrie's is one such dwelling, and discussing this point she shared how the children's toys and equipment are all in one space... so you do have to not mind that bit of chaos'. Despite her efforts not to mind the chaos, she was affected by both the 'messiness' of their combined kitchen-living room, and by her constant effort to store and take out the toys and books for use in their living room where she and her husband also worked.

Throughout our interviews, it was evident that combined kitchen-living rooms proved less amenable to living under stay-at-home restrictions and working from home. However, participants' strong preferences for these spaces were not changed. Rather, the desire for dedicated workspaces became stronger. For instance, when prompted to consider if the preference she expressed in her interview for combined kitchen-living rooms pertained under stay-at-home restrictions, however, Hannah replied:

I would like a separate office rather than a separate kitchen, because I still like it [her dwelling's combined kitchen-living room] as a social setup ... but I think [the pandemic] has made me appreciate the need for some kind of separate living workspace.

In shared households, the struggles with the availability and division of space were felt varyingly (Blanc & Scanlon, 2022; Raynor & Frichot, 2022). Sharers were, on the one hand, already struggling with room sizes before the pandemic, as they often have more furniture and items in their bedrooms, reflecting the limited sharing of material goods and relative lack of space to spread their activities (Barratt & Green, 2017; Heath et al.,

2018). On the other hand, kitchens and living rooms have a particular significance as being the main 'shared' space in shared housing and sharers have less control over these spaces (Heath et al., 2018). Placing a workspace, which would 'privatise' the living room, was deemed potentially conflicting (Raynor & Frichot, 2022). Participants' accounts of working from home evidenced this tension. Some sharers who could not spread their activities to shared areas due to household dynamics struggled fitting workspaces in their bedrooms. For instance, one participant bought a chair so that they could sit next to a chest of drawers to work on in their room. Another had to remove some shelving units and box-up their belongings to fit a desk and chair. In more sociable households, where there were stronger relations of care, residents could spread their activities to shared areas and develop new ways of coexisting. Filippo, for instance, said:

Each one of us now has a room where we work: the table in the living room is for one of my flatmates and the one in the kitchen for the other one. I managed to move to my bedroom, which is the largest one. And that was kind of the reason why I was naturally the one that said 'okay, I'm going to try to put a desk in my bedroom'.

Elsewhere, Zenan and her housemate agreed to allocate their spare room and combined kitchen-living room as workspaces. Zenan, who chose the spare room, reported: 'I use the [kitchen-living room] space early in the morning and around noon to prepare something for lunch like making a coffee or tea ... [My housemate] stops working around seven thirty - eight pm... I [then] use the living room and kitchen [again] for dinner.'

Finally, in addition to the availability of space, participants also spoke of other significant spatial limitations. Particularly working households, whose daily routines had changed with the stay-at-home restrictions and who were obliged to use their homes more during the working day, noticed environmental issues (Preece, McKee, Robinson, et al., 2021). Most frequent among these was the availability of natural light (Kuoppa et al., 2020), and some survey respondents reorganised their furniture to face the windows or have direct natural light while working from home. One interview respondent, for instance, admitted that the tree in front of their flat, which she previously liked, started bothering her during the lockdown, as she noticed only during the lockdown that it was blocking daylight into the living room. Another significant issue, for those living in flats, was noise coming from other flats. As one interview participant reported:

you know, when you're just home too much more you hear your neighbours so much more ... literally every single side of us and our upstairs neighbours have a young child, and I guess I didn't appreciate quite how loud he is and how much time he spends running around ... So that's kind of something we never had [not] having been home before [the pandemic] during the day ... I guess the child was probably in bed when we were in the house.

## Discussion and conclusion

In this article, we have explored how residents understand and experience dwelling sufficiency, and how these understandings and experiences changed during the pandemic. Our analysis helps to fill an observed dearth of resident-oriented approaches to the debates around dwelling design. Through our survey and interview data, we engaged with how residents make sense of their homes and what affordances they seek (as part of a wider set of housing choice trade-offs people have to make in the context of housing affordability [van Ham, 2012]). We argue that experiences of sufficiency are shaped by both certain spatial features (and their lack) and household relationships, and our conclusion reflects on the way homes are designed and regulated considering these findings.

Housing design, in practice and policy, has long been shaped around an understanding of home as the site for the nuclear family and its care and labour practices (Blunt & Dowling, 2006; Carr, 2017; Greenstein et al., 2016; Nowicki, 2017). This relationship seemed to be reflected in our data, in which non-familial households were more likely than familial households to report their dwellings as insufficient for their needs. In the preceding analysis, we have considered our participants' experiences in and with different spaces of their dwellings. For familial households, kitchen and living areas featured prominently in their accounts, confirming existing evidence and representations of such spaces as the heart of home. In the accounts of sharer households, by contrast, while such spaces were still prominent, bedrooms were framed more often as the space in which home-making practices took place (Heath et al., 2018; Nasreen & Ruming, 2020). Affordances sought from different parts of dwellings differed accordingly.

For our participants from shared households, standard working kitchen sizes were challenging, as they did not allow multiple household members to use their kitchen comfortably at the same time. Our participants from familial households regarded working kitchens as insufficient on the basis of not affording sociability among family members and guests, and not allowing parents to use the kitchen while still being able to watch their children. They reported a strong preference for combined kitchen-living room arrangements, and despite such arrangements precipitating issues of privacy and negative sensory experiences, their opinions did not change. This preference aligns well with how new-built dwellings are changing, i.e., combined kitchen-living rooms arrangements becoming the standard kitchen type (Özer & Jacoby, 2022). However, it is also important to recognise that these arrangements leave sharers in a conundrum between being able to exercise their privacy at home and socialising with other household members.

Housing standards have prioritised minimum bedroom standards, in terms of both their size and number (Carr, 2017). The way familial households spoke of their bedrooms largely aligned with how these standards are calculated (supporting the argument on the

family-centricity of standards). However, among sharers, whose home-making practices centre around bedrooms, bedroom size limitations in terms of storage, space to display personal belongings, and space for a desk were routinely articulated, the latter becoming especially pronounced during the stay-at-home restrictions brought about by the Covid-19 pandemic.

As has been shown elsewhere, our research identified the value of ‘overspill’ spaces—spaces that are predominantly absent from housing design standards—to residents (Blanc et al., 2020; Finlay et al., 2012; Kuoppa et al., 2020; Stevenson & Prout, 2013). For many of our participants, overspill spaces (including spare rooms) provided space for activities such as storage, drying clothes, keeping clutter, hosting guests, study, and hobbies. While calculations in recent housing standards make allowances for these types of needs within living areas and bedrooms, most homes are not designed well for them (Finlay et al., 2012; Morgan & Cruickshank, 2014). Notably, disjunctures between dwelling design and the affordances residents sought from their homes were often allayed by ‘overspill spaces’, where they existed. Such spaces included spare rooms, and those who had them considered them integral to their home and did not consider them as ‘spare’, as often described and conceptualised by housing authorities in the UK (as became especially evident in debates about the ‘bedroom tax’ recently introduced for social renters [Greenstein et al., 2016]). In our data it was evident that older housing stock, with its box rooms, outdoor spaces, understairs storage, nooks/landings and sheds, fared better in providing overspill spaces that could afford activities such as those listed above.

Our participants’ experiences were impacted negatively by the Covid-19 pandemic and the consequent ‘stay at home’ and ‘work from home’ orders. Both our survey and interview data show that the affordances of many dwellings were experienced as deeply constrained by research participants when homebound. While the affordances sought from homes during the pandemic differed between familial households and sharers, both household types struggled spatially and socially. In particular, setting up private workspaces proved difficult and rather than expressing the need for larger (in terms of floor area) homes or rooms, participants desired additional rooms that could mitigate the need to share dwelling spaces as well as provide a separation between work and home life. Concurrently, overspill spaces were highly valued by our participants during the pandemic.

There has been great pressure on central and local governments to extend and strengthen minimum space standards amid existing housing inequalities. However, we contend that a more nuanced approach to housing standards is necessary. First, our findings suggest that experiences of dwelling sufficiency, particularly in relation to different parts of home, are varied and the existing functionalist ideas informing space standards do not account for this variety. Second, with work routines (including

increasing employer openness to more flexible working arrangements) changing, a revision of the socio-spatial assumptions of home that inform housing design and space standards is required. What emerges from our analysis is the need to re-think housing design through a broader set of daily activities and household types. We suggest more nuanced design thinking that pays attention to the spatial needs of non-familial households (Tervo & Hirvonen, 2019)—a shift in thinking potentially heralded by the *Large-scale Purpose-built Shared Living Guidance* recently proposed for London. It is also essential for design interventions to move beyond overall dwelling sizes and to consider spatial hierarchies and spatial distributions. This is particularly essential for the sustainability and long-term usability of future housing stock.

## Notes

1. As the dependent variable (dwelling sufficiency rating) was measured on a 7-point scale and was not distributed normally, non-parametric Mann–Whitney tests were utilised to examine statistically significant associations between measures of spatial features of survey respondents' dwellings (e.g. dwelling type, kitchen type, bedroom sizes, availability of storage and spare rooms) and how those respondents' rated their dwellings in relation to their needs.
2. A Mann–Whitney test indicated that the dwelling size rating was higher for survey respondents living in houses and maisonettes (Mdn = 5.0,  $n=95$ ) than for those living in flats (Mdn = 4.0,  $n=139$ ),  $U = 4074$ ,  $z = -4.97124$ ,  $p < .00001$ .
3. A Mann–Whitney test using our survey data indicated that the dwelling size rating was lower for those who reported that they could not use their kitchens for dining (Mdn = 4,  $n=66$ ) than for those that could (Mdn = 4,  $n=168$ ),  $U=3837$ ,  $z = -5.40226$ ,  $p < .00001$ .
4. Where relevant, we note in parentheses the sizes of spaces mentioned and (in square brackets) how they compare to the minimum dwelling sizes in London Design Guide (2010), which also forms the basis for Nationally Described Space Standards (2015).
5. Pseudonyms are provided only for interview participants. The answers given to open-ended questions in the survey are reported without pseudonyms.
6. A Mann–Whitney test indicated that the dwelling size rating was lower for survey respondents who indicated a lack of storage space (Mdn = 4.0,  $n=88$ ) than for those who reported having enough storage space (Mdn = 5.0,  $n=146$ ),  $U = 3681$ ,  $z = 5.46746$ ,  $p < .00001$ .

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