

How do residents experience high-rise development and densification at a neighbourhood level

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How do residents experience high-rise development and densification at a neighbourhood level?

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Being a dissertation submitted to the faculty of The Built Environment as part of the requirements for the award of **MPlan City Planning** at University College London:

I declare that this dissertation is entirely my own work and that ideas, data, and images, as well as direct quotations, drawn from elsewhere are identified and referenced.

Signature: 

Date: 16.06.2022

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Abstract

High-rise development and densification are tools used by planners to achieve social and environmental goals within increasingly populous urban areas. This study aims to explore the impacts that these processes can have on residents in the neighbourhoods they are occurring in. The project employed a mixed-method approach with both quantitative and qualitative processes. This methodology was applied to a case study: residents on the Isle of Dogs. The Isle of Dogs is a neighbourhood located in London, England that has undergone intense high-rise development and regeneration. The study involved a quantitative survey of 49 residents and a walked interview with 7 participants. The study focused on residents' perceptions of densification and high-rise development. The findings indicate that residents primarily felt opposed to high-rise development and densification and felt their lives and the neighbourhood were both negatively impacted by factors relating to those development, such as infrastructure stress and loss of community. The results highlighted a geographic divide, with residents of newer high-rise towers on the Isle expressing fewer negative feelings about developments. Residents also felt a lack of agency over the impact of development and densification in their neighbourhood. The additional pressures that densification places on infrastructure is the primary cause for resident's negative perceptions of development. This current study proposes that there is a need for a balance between new development and infrastructure pressure and this is key to ensuring residents are not negatively impacted and therefore more accepting of development.

1. Introduction

Statistics regarding migration patterns and population increase indicate that by 2050, 70% of the world's population will be living in cities (UN Habit, 2018). London specifically will see an increase in population of 10.6%, or 962,000 people by 2041 (GLA, 2020). Like many other cities, this increase in population is accompanied by an increase in demand for housing that is being met by the construction of high-rise typologies at an ever-growing rate, these in turn, lead to higher rates of densification (Al-Kodmany, 2012; Short et al., 2022).

Addressing the relationship between high-rise development and densification will be crucial to understanding how modern cities will develop and progress in the 21st century. More importantly however, will be developing an understanding that these two phenomena can have on neighbourhoods and the residents within them. This thesis will look to answer the question: How do residents experience high-rise development and densification at a neighbourhood level? To address this question, the focus of this dissertation will be on a single case study, the neighbourhood of the Isle of Dogs, located in East London in England.

This thesis will begin with a discussion of the aims and the research question. This will be followed by a review of literature surrounding the concepts of high-rise development and densification, including a definition of the terms. This will then be followed by the methodology, which will include an explanation of the mixed methods approach used for this research process, and a detailed introduction to the case study. The results are presented in two stages. The first stage will be a statistical analysis of the quantitative data. The second stage will be a detailed presentation of the qualitative data that was collected in the interviews. Following this will be a discussion of the results and a conclusion offering recommendations

to planners and researchers. Lastly, there will be a discussion of the limitations to the methodology and research process.

1.1 Aims

The aims of this thesis were to design and carry out a study that investigated in detail the impact of high-rise development and densification on residents at a neighbourhood scale. High-rise buildings are a common typology in the Isle of Dogs and the area has the highest concentration of high-rise buildings and the highest planned number of high-rise buildings in the UK (Mayor of London, 2019). The characteristics make it an ideal case study to answer the research question.

The project employed a mixed-method approach with both quantitative and qualitative processes. The quantitative aspect of the research investigated several themes regarding the impacts of high-rise development and densification by surveying impacted residents. The aim was to probe several issues such as:

- (i) impact of density on amenities and services
- (ii) perception of high rise development
- (iii) perceived impact of density on both private and public spaces

The qualitative aspect focussed on identifying whether the spontaneous data provided via walked interviews would yield information that is consistent with the survey data, and to provide additional depth and context to the research.

I will also look to build on the questions regarding densification and high-rise development posed by existing literature.

2. Literature review

2.1 High-rise buildings

Prominent features of densification in urban areas, especially in the inner suburbs of large cities like London, are high-rise buildings. The term ‘high-rise’ is a relative concept and does not have a set definition in academic or technical literature. This is due to the importance placed on contextual factors in understanding what constitute as ‘high-rise’. It has been described as a building whose height exerts different impacts on the design, construction and operation from those that exist in ‘common’ buildings of a certain region and period (Beedle, 1986; Short et al., 2022).

Recognising the importance of local context in defining what is ‘high’, the London Plan leaves the definition of high-rise in the hands of local authorities. It does however, state that where local authorities do not choose to define high-rise, buildings taller than 30m will be defined as high-rise buildings (London Plan, 2021). These parameters include a variety of typologies, including standalone towers, perimeter blocks, extruded blocks, and towers on podiums. While there are distinguishing challenges and benefits from each type (Tower Hamlets, 2020), this study will not be looking to examine each high-rise typology specifically, instead it will focus on the group as a whole.

Across the world, high-rise housing is being presented as meeting a need for housing, as offering ways of regenerating run-down urban districts, and as means of accumulating considerable wealth for some people (McCall & Mooney, 2018). Within London, high-rise

buildings are being used to restrict urban sprawl and to regenerate existing neighbourhoods. This move towards high-rise development has been led by the London Plan, which has high density development embedded within its policy aims (London Plan, 2021). This is exemplified by the 527 towers currently in the planning and construction pipeline to be built in London (NLA, 2021).

The affordability of these new high-rise housing projects in London is often only within the remit of the wealthy (McCall & Mooney, 2018). However, particularly in London, this has not always been the case. Between the 1950s and 1970s, large high-rise towers were built to accommodate growing needs for social housing. Since then, due to funding cuts, many of these towers have fallen in disrepair or have been neglected in terms of evaluating safety issues. For example, the use of flammable cladding on one such high-rise building led to the Grenfell Fire disaster in 2017 (Shildrick, 2018). We can see therefore a dynamic where new high-rise is being built in London catering to the upper class's desire for wealth accumulation as they can invest in and rent out these properties. On the other hand, we see that older social housing high-rise is being left in disrepair and often demolished after becoming uninhabitable (McCall & Mooney, 2018). This brings into question the role of high-rises in London's future, where instead of presenting an answer to the city's housing crisis, it represents a new wave of class segregation in the city's urban fabric (Short et al., 2022).

A crucial step in understanding the role of high-rise buildings is to consider their impacts on residents. This includes both residents living in high-rises, and those living in neighbourhoods that have seen a large amount of high-rise development. Many studies have shown that high-rise buildings can have unique impacts on residents and are therefore an important typology of building to be studied (Maing, 2017; Ghiaus et al., 2006; Guedes et al., 2011; Robinson, 2006;

Chan & Liu, 2018; Scanlon et al., 2018). These include the impact of high-rise development on the street environment, sustainability and resident's quality of life amongst many others.

High-rise buildings when clustered together create higher neighbourhood densities. Higher neighbourhood densities can have a plethora of unwanted effects on such things as indoor temperature, air quality and lead to higher noise pollution. The effects can be due to, for example, higher number of people and busier roads (Ghiaus et al., 2006; Guedes et al., 2011). Microclimates developing due to tall buildings blocking sunlight, causing wind tunnels or urban heat island effects can result in unhealthy temperatures both at street level and indoors (Robinson, 2006; Theodoridis & Moussiopoulos, 2000; Mirzaei et al., 2012, Niachou et al., 2008). A study of four buildings in different neighbourhoods in Hong Kong found that occupants of high-rise buildings in higher density neighbourhoods had their health and wellbeing negatively impacted by neighbourhood density, building height and neighbourhood cleanliness (Chan & Liu, 2018).

The age of the residents in high-rise building is particularly important as elderly people tend to spend more than 75% of their time at home or near their home environments (Wahl et al., 2012). For these reasons, open space within housing estates is important to support the elderly, and the lack of open spaces witnessed in existing and planned high density living has been found to be a constraint on the lifestyle of elderly residents (Maing, 2017).

As science increasingly points to the need for sustainable modes of development, the built environment has been identified as a key sector to reduce carbon emissions and resource use. The way we construct our buildings has been identified to be an opportunity to reduce carbon emissions (IPCC, 2014), and a zero-carbon building approach has been promoted in some countries as a model of sustainable development. This is particularly salient in the context of

the current climate emergency that the world finds itself in. In response to this, many local authorities have declared climate emergencies in order to push urgent measures to reduce carbon emissions and minimise the use of resources (London Plan, 2021). However, due to their size, number of occupants and geographical locations high-rises have proven to be particularly problematic to retrofit to be zero carbon (Pan & Pan, 2021). A Bartlett study found that poorly designed high-rise buildings are more energy intensive and less energy efficient than smaller buildings (UCL Energy Institute, 2017).

Within London, high-rise developments are being given planning permission without a clear understanding of their impacts (Scanlon et al., 2018; NLA, 2021; Short et al., 2022). Scanlon et al. (2018) found that high-rise developments often impacted residents in ways that architects and planner did not perceive during the design phase of the development. These included both positive and negative aspects of the development and challenged normative views of high-rise development. These along with Short et al. (2022) found that contemporary planning and urban design fail to consider resident's experiences when designing developments. Often developers fail to adapt to local contexts, and instead focus on maximising floorspace and profits. The interventions they do make, particularly improvements to the streetscape around their developments, fail to address the many issues that residents have with the way these developments impact those living in or near them.

As is made clear by the research cited above, and summarised in many other studies, high-rise buildings come with a host of advantages and disadvantages. Understanding the limitations and impacts of this dominant typology of building is, therefore, hugely important (Al-Kodmany, 2012; Short et al., 2022).

2.2 Density, densification, perceived density

The influx of people from rural to urban settings around the world will lead to rapid urban growth in the world's major cities. In order to accommodate this growth without leading to urban sprawl cities, will be required to densify. Densification, the process of increasing an area's density, is often touted as a solution to urban problems such as sprawl, over-consumption and traffic (Glaeser, 2008; Bettencourt, 2013) but its impacts on residents have not been widely studied. Its economic and environmental benefits are widely supported, but also challenged, particularly from a Marxist perspective by academics such as Lefebvre (1996) and Evans and Jones (2012). The latter cite evidence that shows that densification does not just result in a change in the built environment or population, but also leads to social and cultural changes in the communities affected by the increase in densification. The residents' perceptions of density are, then, very much tied to these changes as well. Therefore, a study of density would need to consider these changes (Dianati, 2021).

The literature on density has not arrived at a clear consensus on definitions or methods of researching density. This has led to many varied researcher-defined measures being proposed about density across disciplines (Churchman, 2009 Boyko & Cooper, 2011). Therefore, to date there is no clear definition of density or a method to analyse its impact. The most common approach to researching density is quantitative (Pafka, 2013). This applies measures of physical density such as dwellings per hectare, population density (number), or other measures, for example site coverage, number of vehicles etc., to studies (Churchman, 1999). This approach is often used in governmental reports and by developers.

Research has also focused on how measurements of density affect its perception by residents, a term known as 'perceived density'. Early research, such as Rapoport (1975) and Alexander

(1993), looked to separate density and its impacts in order to better understand the effects of densification. Rapoport defined density as a 'site measure' and crowding or overcrowding as a measure of the impact of density. This measured impact could then be defined as the measurement of the perception of density. Alexander developed this further to show that perceived density is the product of several factors, including physical density (measured density in addition to qualitative physical factors), but also other factors such as socio-cultural or individual cognitive factors.

Physical factors of density include various measures. The most commonly measured one is the density of people in a given area (Cheng, 2009). However physical factors also include sensory stimuli such as smells, lights, perceived traffic, and increased pollution. These can often be easily measured using environmental surveys and quantitative methods (Ahlfeldt and Pietrostefani, 2017). Commonly, building typology is linked to an increase in perceived density, particularly high-rise typologies. Kearney (2006) and Bergdoll & Williams (1990) showed that buildings that were perceived as large, either due to their height, façade or plot size, or buildings that blocked out large proportions of the surrounding sky when viewed from ground level could often induce an increased perception of density.

The socio-cultural factors that contribute to perceptions of density are as equally varied as the physical factors. They often are more subjective and require qualitative methods to investigate (Mitrany, 2005; Sivam, 2012). These factors include having to share the neighbourhood with people of other cultures, and a lack of control or choice about what happens in the neighbourhood (Rapoport, 1975). An additional aspect of the perception of density was temporal, and the impact that factors can have are greater if they are constant, for example if noise pollution continues through the night (Rapoport, 1975; Mitrany, 2005).

These qualitative factors and their impact on perceptions of density, particularly in terms of context and cultural differences have been the subject of more recent research (Dianati, 2021; Boyko & Cooper, 2011). Boyko and Cooper (2011)'s summary of 75 separate studies on density and densification found that the impact of perceptions of density did not follow clear trends and were often dependent on context. They did, however, identify that participants in those studies commonly perceived the process of densification as negative and a psychological stressor.

Dividing density into physical and socio-cultural factors is not always possible, as some of its impacts are often combinations of both. For example, densification's impacts on the availability of amenities and infrastructure can be measured quantitatively, e.g., the number of libraries or green spaces per person in an area, but how this actually impacts residents can be affected by the manner in which these spaces are used, which is not always measurable. This is highlighted by Lin et al. (2015) who showed how loss of green spaces in both the public and private realm affects disadvantaged communities more than wealthier ones.

An academic field that has looked in depth into perceived density is that of environmental psychology. Studies such as Lewicka (2011) and Giuliani (2003) have established a link between the spaces people live in and their mental state. However, they acknowledge that there is a significant research gap in understanding the link between mind and space. Along these lines, ETH Zurich has begun a research project to define perceived density quantitatively (Emo et al. 2017). By surveying 190 participants, they found that certain parameters such as increased traffic, reduced access to green spaces and views of the sky were ranked highly as being factors

that contributed to increased perceptions of density. They did not however, find a clear set of parameters that can be used to concretely define perceived density.

As was discussed above, densification is strongly linked to high-rise buildings (Al-Kodmany, 2012; Boyko & Cooper, 2011). This makes an understanding of densification and its impact integral to understanding the impacts of high-rise typologies. The integration of the perception of densification with high-rise development is crucial to ensuring good urban design and place-making. This is an issue of particular relevance in London, as Dunning et al. (2020) shows, local authorities are struggling to manage the balance between using densification to address housing need, whilst also ensuring that developmental pressures on neighbourhoods are balanced.

Densification as a subject area is under-studied, this is partly due to the fact that the impacts it can have may be both positive and negative. These impacts are very often dependent on the local context of where the densification is occurring. Furthermore, as outlined above, the definition of density is not clearly defined and how to successfully study the perception of density is also not clearly delineated. These are all issues that will be addressed in this study.

3. Methodology

3.1 Case study selection

The dissertation used a case study to acquire context-dependent knowledge relevant to the research question. The dissertation only used a single case study: the residents of the Isle of Dogs. A single case study can have significant value in adding to a body of research without needing to be a comparison (Yin, 2017). Furthermore, the literature reviewed above highlighted that in general there has been little research done on perceived density. Therefore, the dissertation is exploratory and descriptive as opposed to explanatory. The exploration of a single case study lends itself to this approach as this research is not looking to prove or disprove a theory or generalisation, but rather to understand how the existing body of research on high-rise development and densification affects the case study.

While the case study is not a comparative study, it does contain embedded units of analysis. Embedded units of analysis refer to sub-units that occur within case studies that can be compared in order to address the research question. Following the interviews, a thematic review was conducted of the responses from residents who live within the newer residential towers on the north of the Isle of Dogs and those in the older towers in the south of the Isle of Dogs.

3.2 Statement of methods

The methods normally adopted in assessing perceptions of density range from more quantitative approaches such as surveys and questionnaires (Kearney, 2006; Bergdoll & Williams, 2012), to more qualitative approaches like focus groups and interviews. Interviews have been widely used as means of obtaining a more detailed and personal understanding of density (Mitrany, 2005; Dave, 2011; Sivam, Karuppanan & Davis, 2012). Studies have also

used a mixed-methods approach to collect data, applying an initial quantitative stage followed by a more in depth qualitative interview process (Sivam & Karuppannan, 2011; Scanlon, White & Blanc, 2018). The research process for this dissertation's followed the mixed-method approach by having a quantitative first stage, and a qualitative second stage. The initial aim for the process was to distribute the survey to 50 participants and following that, to conduct semi-structured interviews with at least 6 participants.

The rationale for using a questionnaire had two aspects. The survey's primary use would be to provide data that could be used to evaluate resident's subjective impressions of high-rise development and densification. Its secondary use would be to highlight the aspects of high-rise development and densification that are particularly relevant to the context of the Isle of Dogs. The survey would also serve as a recruitment tool for the second stage of the research process, the interviews. This use of surveys as a tool for interview recruitment has been used in several studies in separate fields (Nicholas et al., 2013; Nowicki & White, 2017).

I chose to use a semi-structured walked interview for the second stage of the research process. This process was suited for the exploratory and descriptive case study method that were employed as it allowed for flexibility with engaging with topics that arose during the interview (Dianati, 2021). However, it still retained enough structure that it could ensure that the interviews elicited the information and details required to form a coherent analysis at the end of the process (Dianati, 2021).

3.3 Case study background: Residents of the Isle of Dogs

3.3.1 Neighbourhoods

The neighbourhood has become a significant spatial concept in UK policy since 2003 (ODPM, 2003; Forest, 2008). However, despite its common use in policy, and in general academic discussion, there is no consensus on its definition (Kearns and Parkinson, 2001). Jenks and Dempsey (2007) argue that the most objective way of measuring the boundaries of a 'neighbourhood' is through its enclosure or bounding of by physical features, such as water, or transport infrastructure such as roads or rails. Where this is not possible, administrative boundaries can be used instead. For the purpose of this thesis, the entire Isle is defined as a neighbourhood. It is conveniently bounded on three sides by the river Thames. The only neighbourhood connected physically to the Isle is Poplar to the north. This neighbourhood is separated from the Isle by the expressway Aspen Way and the railway tracks of the Docklands Light Railway. This creates a natural defining boundary to the Isle of Dogs, and the setting for the case study area from which residents can be found.

3.3.2 The history of development on the Isle of Dogs

The Isle of Dogs is a historically important site of development in England. While the increase in high-rise development in London has been a process that begun in the last two decades, it has been ongoing on the Isle of Dogs since the 1970s. This has occurred via different mechanisms and for different purposes, often with little clear strategic thinking. The end result is one of the fastest growing neighbourhoods in Europe, in terms of both development and population, with a population increase of over 50% since 1991 (Tower Hamlets Council 2007, Mayor of London 2019).

The Isle of Dogs is located on a peninsula on the Thames, located in East London. It is within the London borough of Tower Hamlets and includes the financial district of Canary Wharf. Initially a marshland, it was rapidly urbanised in the 19th century following the construction of the London Docks (Rosenberg & Sarkar, 2019). It has the most high-rise buildings, and the most planned high-rise buildings in the UK. This has led to some parts of the Isle of Dogs having some of the highest population densities in the world (Blanc *et al.* 2020).

A comprehensive guide to the Isle of Dogs can be found in Carmona's (2009) *The Isle of Dogs: four development waves, five planning models, twelve plans, thirty-five years, and a renaissance of sorts*. This report provides a comprehensive and detailed background into the waves of development and regeneration that formed the Isle of Dogs over a period between 1973 to the present day.

Plans for the development of the Isle of Dogs were first begun in 1973 by the then Conservative government. The government initially commissioned private consultants to develop options for the Isle, which, following the closure of the docks, had experienced a post-industrial decline (Brownill and O'Hara 2015). However, the Conservative's loss in the 1974 national election to the Labour Party, saw the government replace the private consultants with a public-community partnership, the Docklands Joint Committee (DJC). However, the DJC did not have any mechanisms through which to enact their vision, and did not manage to complete any meaningful development on the Isle (Foster 1992, Carmona 2009, Brownill and O'Hara 2015).

In 1981, the Isle of Dogs saw a shift in its management away from the public sector led approach of the DJC. Instead, it saw a return to private solutions, with the Isle of Dogs being labelled an Enterprise Zone – meaning it would not be subject to conventional government

regulatory policies and import duties. This was a conservative, market-oriented approach to reversing urban decline (Rubin and Richards 1992). To manage this new zone, the London Docklands Development Corporation (LDDC) was established (Brownill and O'Hara 2015). Whilst the LDDC had a strategic oversight of the whole Isle, they primarily engaged in ad hoc regeneration projects, without following a plan-based approach (Carmona 2009).

The most defining period of development on the Isle began in 1985 with the establishment of the financial district of Canary Wharf. Canary Wharf was crafted as a means of creating a financial hub to relieve the developmental pressure within the existing financial district of London, the Square Mile. With the creation of Canary Wharf came a new approach to development, where design was conceived as a method by which a 'marketable sense of place could be established'. Part of the design strategy was to create an area that contrasted with its surroundings, physically, economically and socially. The development of Canary Wharf was led by private developers who followed a plan-based approach. However, due to a lack of transport infrastructure, amongst other things, the development of Canary Wharf stalled, with lead developers Olympia and York going bankrupt in 1992 (Carmona 2009).

In the 90s, the extension of transport services onto the Isle of Dogs resulted in increased development on the Isle. This meant that the stalled development of Canary Wharf was revitalised, and along with it, the development of the Isle of Dogs. In 1998, the LDDC was wound up, leaving a legacy of 24,300 new homes and 849 ha of land developed. Whilst they did build 6,000 social housing homes, the Isle still remained as one of the most underprivileged parts of the country (Carmona, 2009).

Overall, over this period of time, the Isle of Dogs underwent 12 plans, and various forms of plan-making. With little to no coherence or long-term planning on the Isle. The resulting dominant mode of development has been market/developer led. Edwards (1992) argued that

the result of the failure of the various state-led modes of development on the Isle of Dogs marked the end of traditional British town planning and its ideal that planning must serve a wider social and environmental purpose. It can be reasoned that this rise in developer-led planning led to the increase in planning approvals for high-rise commercial and residential buildings.

Florio and Brownill (2000) contend that the LDDC played a role in breaking down the opposition to private investment in inner cities. Part of this was the focus on an 'incremental opportunism' approach to regeneration. This approach meant that instead of just being focused on the supply of homes and buildings, it would be about developing a 'brand' that could be delivered if 'marketing and fiscal incentives were right'. Hinsey and Malone (1996) instead suggest that it was more a lack of planning and a focus on form that led to the large amounts of development on the Isle of Dogs.

Regardless of cause, the legacy of development on the Isle, in particular that of Canary Wharf has created a confusing and intense urban environment. The lack of a strategic masterplan, coupled with the approval of over 25 high-rise buildings on the Isle means that over a period of less than 30 years, the Isle's population doubled, making it the densest neighbourhood in all of England (Kalcheva, Taki & Hadi, 2016; Skyscraper Center, 2022).

3.3.3 Contemporary Isle of Dogs

In present times, the Isle of Dogs is located within Tower Hamlets, the borough with the highest population density in the UK. The Isle of Dogs itself is still one of the densest neighbourhoods within the UK. The Mayor's Plan for London (2021) details the future of the Isle of Dogs as an Opportunity Area (OA) for economic growth and housing construction. OAs are areas within London that have been identified as sites for increases in housing and employment. They are often free from density controls and other regulatory restrictions (Just Space, 2021),

and are reliant on direct negotiation with and management by private developers (Robinson & Attuyer, 2021). They have been linked to increased displacement of lower income residents (Lees, 2018; RT & CLASS, 2021).

The plan highlights the significance of the Isle of Dogs within London as by 2041 it will be the site of the fourth largest increase in number of homes in London and the largest within Central London, with 29,000 new homes and 110,000 new jobs predicted (Mayor of London, 2021). This is in part a response to the growing housing crisis in London, which is driven by a shortage in the supply of affordable homes, amongst other factors (Clifford, 2020).

The Isle of Dogs is explicitly mentioned as a site for the development of high-rise buildings and densification by the London Plan. In the Opportunity Area Policy Framework (OAPF) for Poplar and the Isle of Dogs, the area is seen as a site for the ‘growth primarily of mid-rise and tall buildings’. The OAPF also notes that several areas in the Isle of Dogs are already defined

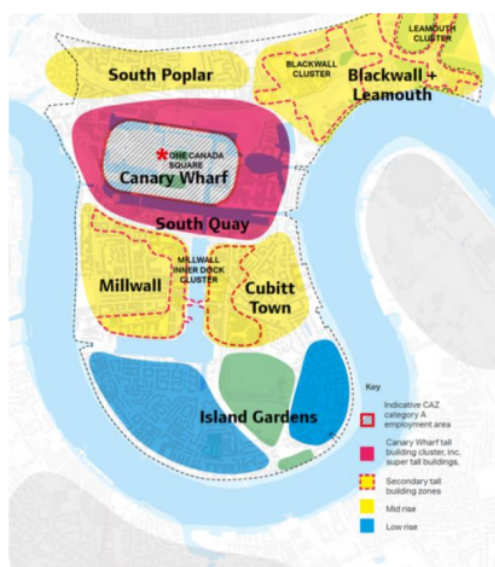


Figure 1. A map of where on the Isle of Dogs the GLA predicts development (London Plan, 2021)

by high-rise typologies, making them more amenable to further high-rise development according to the London Plan. The areas marked for development can be seen in Figure 1.

Public participation and engagement with planning is codified into England's planning system. Regulations such as the Equality Act 2010 and the Localism Act 2011 give the public right to participate and engage with neighbourhood planning. However, public engagement can often be low, and what engagement does occur may not always result in optimal outcomes for the community. Furthermore, after the ratification of city and neighbourhood plans often there is no further impetus for planners to continue to engage with residents on planning issues. This provides the impetus for the current study.

3.4 First Stage: The survey

3.4.1 Survey participants

A survey eliciting information on the relationship to the Isle of Dogs was developed and distributed. The survey was comprised of a series of 17 statements to which the participants needed to say to what degree they agreed with each statement. A 1 to 5 Likert scale was used, with 1 being strongly disagree and 5 being strongly agree. The statements were mostly framed as negative comments relating to the Isle of Dogs. Through the Likert scale, the participants declared how they felt about each statement. These statements were centred around aspects of density and perceptions of density informed by the readings. The statements focussed on concepts of navigability, overcrowding in public and private spaces, traffic, building heights, availability of amenities and access to green spaces, as shown in the examples below (the full list of statements can be found in Appendix 5).

A specific questionnaire was designed for the study. The questionnaire comprises 17 statements centred around aspects of high-rise development and perceptions of density

informed by the readings. These statements were based on four general themes also based on the readings. They are:

1. Perceptions of density in the public realm

- (i) concepts of navigability
- (ii) pavement and path size
- (iii) neighbourhood population density
- (iv) overcrowding in public spaces
- (v) unwanted interactions with neighbours
- (vi) variety in cultural backgrounds within community

2. Perceptions of density in the private realm

- (vii) maintaining privacy in the public realm
- (viii) size and space of home

3. Stress on infrastructure and amenities

- (ix) traffic and congestion
- (x) public transport availability and crowding
- (xi) availability of amenities and infrastructure
- (xii) availability of amenities and infrastructure over time
- (xiii) availability of green spaces and parks

4. High-rise development

- (xiv) building height
- (xv) building height over time

(xvi) building facades and access to light

(xvii) building plot sizes and closeness

Participants were also asked to provide demographic information such as: age, race, gender identity and length of stay on the Isle of Dogs.

Sample statements:

I. The Isle of Dogs is difficult to navigate around

1. Strongly disagree

2. Disagree

3. Neutral

4. Agree

5. Strongly agree

II. I feel that there is not enough space in my house

1. Strongly disagree

2. Disagree

3. Neutral

4. Agree

5. Strongly agree

The survey also included a section asking if the participant would consent to being interviewed for the second stage of this process. Those that agreed supplied their contact details.

The survey was hosted on the online survey platform Google Forms and the link was distributed both online via social media groups, but also in person by approaching people within the Isle of Dogs at random. For the surveys conducted in person, the participants accessed the survey via their own smartphones by using a QR code provided to them.

A total of 49 participants completed the survey. Their details are outlined in Table 1.

Table 1 Survey Participants

| Ethnicity | Participant # | Participant % |
|---|----------------------|----------------------|
| Asian | 9 | 18.37% |
| Mixed - any other Mixed or multiple ethnic background | 5 | 10.20% |
| Prefer not to say | 1 | 2.04% |
| White | 34 | 69.39% |
| Total | 49 | 100.00 % |
| Gender | | |
| Agender | 1 | 2.04% |
| Man | 16 | 32.65% |
| Woman | 32 | 65.31% |
| Total | 49 | 100.00 % |
| Age | | |
| 18-24 | 2 | 4.08% |
| 25-29 | 5 | 10.20% |
| 30-39 | 12 | 24.49% |
| 40-49 | 11 | 22.45% |

| | | |
|--------------------------------------|-----------------------|-----------------|
| 50-59 | 13 | 26.53% |
| 60-69 | 6 | 12.24% |
| Total | 49 | 100.00 % |
| Length of Stay at IoD (Years) | | |
| <5 | 15 | 31.3% |
| 6-10 | 9 | 18.8% |
| 11-20 | 11 | 22.9% |
| >20 | 13 | 27.1% |
| Total | 48[#] | 100.00 % |

[#] One participants did not give their length of stay.

3.5 Second Stage: The Interviews

In total 7 residents from the Isle of Dogs were interviewed. Table 2 shows the demographic background of the participants.

Table 2. Interview Participants

| Resident | Gender | Age | Race | Tenancy | Length of stay on the IoD | Area of residence | Survey answers ranked in order of most impacted by density to least |
|----------|--------|-------|-------|-----------------------|---------------------------|---|---|
| R | Male | 30-39 | Asian | Leaseholder | 5 years | 14th floor of high-rise tower in North Quay | 5th |
| K | Male | 50-59 | White | Private Renter | 1 year | 30th floor of high-rise tower in Canary Wharf | 6th |
| N | Female | 40-49 | Asian | Leaseholder | 14 years | 2nd floor flat near Island Gardens along the Thames Path | 2nd |
| P | Female | 60-69 | White | Leaseholder | 14 years | Ground floor flat on West side of the Isle, along the Thames Path | 3rd (tied) |
| S | Female | 40-49 | White | Leaseholder | 22 years | 5th floor flat on West side of the Isle, along the Thames Path | 1st |
| Z | Female | 40-49 | Asian | Leaseholder | 20 years | Terraced house in low-rise development on the South of the Isle, but originally in 4th floor flat near Blackwall DLR in the North | n/a |
| D | Male | 40-49 | White | Social housing tenant | 5.5 years | 3rd floor flat in a 15 storey tower | 3rd (tied) |

The qualitative aspect of the research took the form of walked interviews with participants.

Walking interviews entail ‘walking’ around the area of study together with the participant. It

is a research method which can be used to explore the link between the interviewee and space (Evans & Jones, 2011). Research has shown that walking interviews can provide deeper and more meaningful insight than more static interviews especially when the subject matter is space or place (Kinney, 2017). The aim for this dissertation was for these walks to be participant-driven and for the focus to be on their relations to density on the Isle of Dogs. A benefit of walked interviews is that the greater control they give the participant allows for a greater understanding of their perspective as opposed to being limited by that of the interviewer (Kusenbach, 2020). As a process, walked interviews are more democratic and participatory, allowing the participants greater agency in the interview. The interviews followed the docent method of walked interviews developed by Chang (2017) where the interviewee guides the researcher around specific areas that are significant to them. Chang (2017) describes the docent method as a participant-led interview through “sites of interest” (Chang, 2017, pp.609). There are three stages in this method: an initial warm-up and route planning stage, the actual walked interview, and finally a round up interview. This allowed the interviews to be conducted with a certain degree of structure and the focus on density and densification was contextualised. However, the nature of the interview still allowed the participants to make decisions on the structure and content of the interview. The walking interviews were audio-recorded using a digital recorder.

As mentioned earlier, the participants were primarily chosen using a nested sampling model, where interviewees were selected from the survey participants who had volunteered. 22 participants listed themselves as contacts to be interviewed, but only 6 responded to the email contacting them to begin the interview process. 1 participant who was interviewed did not want to fill out the survey due to a lack of time. This participant was recruited via another interviewee who had told her about the research process.

The interviews were conducted in as standardised a way as possible. This was done by ensuring that all participants received the same instructions and details about the process and the research. The process began when they were contacted to confirm a date and time for the interview. They were sent an email explaining the scope of the research, and the reasoning behind wanting to conduct a walking interview (these communications are outlined in Appendix 2 and 3). The email also asked the participant to begin thinking of a potential route to take and gave examples of areas they may want to plan the route around. On the day of the interview, we met at a predetermined spot on the Isle of Dogs. The 'warm-up' process then began with a brief explanation and discussion of the research aims and the specific concepts the research was concerned with, taking time to explain terminology such as 'perceived density' and 'densification'. They were given examples such as increasing traffic, noise pollution, or building height as examples of this. Participants were told that the route for the walked interview was to be decided by them but asked them to remain within the Isle of Dogs. Participants consented to being recorded and understood that they could withdraw from the process at any time.

The structure and length of the walking interviews varied. Some participants required a longer warm-up session to better grasp the specifics of the research and to plan the route. The process of the actual interview was very loosely structured. The questions asked were expanded versions of the questions in the survey. For most of the interview participants lead not just the walk, but also the areas of discussion. Occasionally some intervention was required to keep conversations focused on the research question. The most common intervention was when participants would begin speaking in large amounts of detail about highly specific issues. When this occurred, the discussion would be guided back to the immediate surroundings and the

neighbourhood. The interviews varied in length, from 45 minutes to 1.5 hours. A map of the walking routes of the interviews can be seen in Figure 2 below.

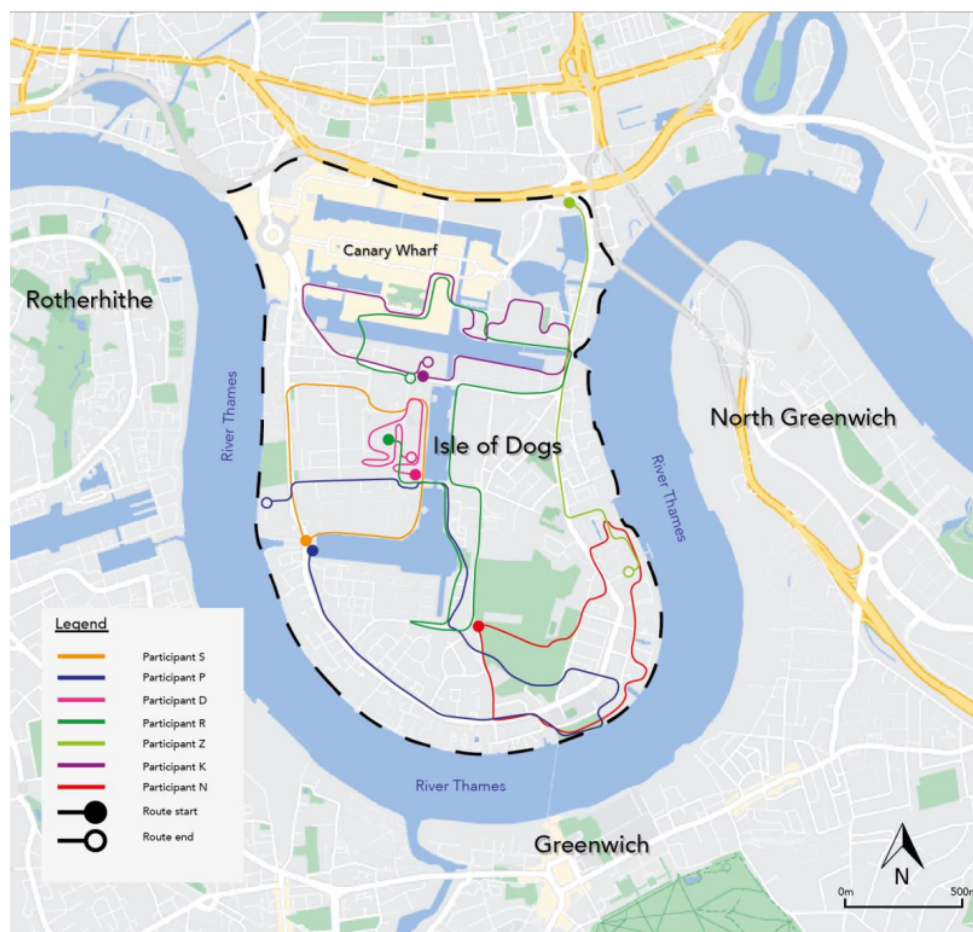


Figure 2. A map of all the walking routes taken during the walked interviews

Walked interviews can often be hindered by environmental obstacles, such as adverse weather, temperature, lighting, or obstacles along the route itself, such as construction. Whilst these did present themselves as issues on occasion, none affected the interviews in significant ways.

3.6 Ethical considerations

The first main ethical consideration was to assure the participants that everything that they said, particularly those recorded during the interview would only be used for the purpose of this research project. They were reassured that sensitive and personal information on, for example, their names, their mental health and their economic or housing situations, would not be written about in a way that made it so they would be identifiable. For this purpose, the participants' names are anonymised throughout the dissertation. Secondly, it was confirmed that all participants consented to the proposal of a walked interview. To ensure that people with mobility issues or other accessibility needs were not excluded, it was made clear to all participants prior to the interviews that any accessibility needs they may have would be accommodated for. This extended to caring responsibilities, and one participant did bring their children, and one other their dog to the interview.

4. Results

4.1 Survey results

As discussed earlier, the survey was presented to residents as a mixture of statements on the extent that an indicator of density impacted them. Participants were then asked to decide to what extent they agreed with the statement. For the purpose of this analysis, the degree of agreement with a statement has been taken as an indicator towards the extent to which the participant felt impacted by the indicator. For example, an answer indicating a strong agreement with a statement stating that 'there are too many people on the Isle of Dogs' has been taken to indicate that overcrowding has a strong impact on a participant. Whilst an answer indicating disagreement with the same statement would be an indicator of a moderate lack of impact from overcrowding on the participant.

The first step taken was to check the coherence of the theming of statements, and whether participants rated the statements within these themes similarly with reliability. To do this the statistical software JASP was used to calculate each theme's Cronbach's alpha. Cronbach's alpha is a measure of the internal consistency of a construct or concept, which is to say, if items in a test are answered in a manner that is correlated to each other. It is commonly used to analyse the scale reliability of Likert data. When Cronbach's alpha is above 0.70 the reliability of the data is considered to be robust in most social science research (Tavakol & Dennick, 2011; Bonett & Wright, 2015).

Using this method of statistical analysis, Table 3 shows that there are two themes that have a high internal reliability. These are stress on infrastructure and amenities. Perceptions of density

in the public realm had just below moderate reliability and perceptions of density in the public realm had poor to no reliability.

Table 3. Cronbach's alpha Test

| Theme | Cronbach's α | 95% CI lower bound | 95% CI upper bound |
|--|---------------------|--------------------|--------------------|
| <i>Perceptions of density in the public realm</i> | 0.616* | 0.424 | 0.754 |
| <i>Perceptions of density in the private realm</i> | 0.293 | -0.234 | 0.611 |
| <i>Stress on infrastructure and amenities</i> | 0.806 | 0.700 | 0.879 |
| <i>High-rise development</i> | 0.879 | 0.833 | 0.916 |

*Within this theme, the statement regarding cultural diversity as an indicator of density scaled negatively compared to the other statements, with this removed the α is 0.659.

The distribution of answers across the survey indicates that participants primarily felt strongly impacted by density and densification on the Isle of Dogs. As can be seen from Figure 2, 39.5% of the total answers given indicated a strong impact due to density. In total over half the answers (56.5%) indicated some level of impact, with only a small portion (26.2%) indicating a moderate or strong lack of impact from densification.

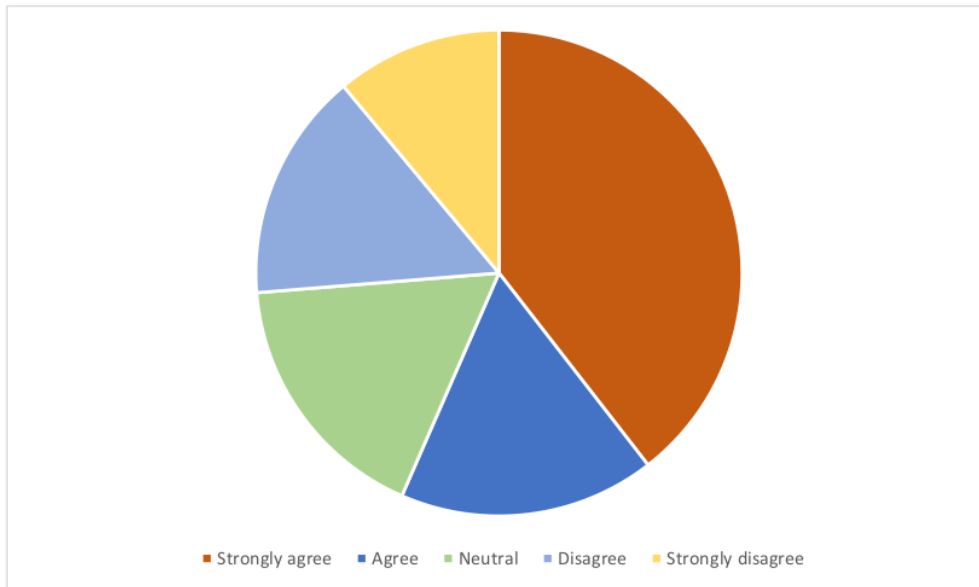


Figure 3. Distribution of responses to the survey

Of the 17 statements only 5 had responses that showed on average that participants found that the indicator had not impacted them. These were statements (i), (ii), (iv), (vi) and (viii) (refer to Table 4 and Appendix 4), based on the following indicators of density respectively: navigability, crowded public spaces, pavement width, unwanted interactions with neighbour, and privacy. Of these, statement (i) was the most positively answered, with 68% of participants indicating that they did not feel that navigability was an issue on the Isle of Dogs.

Several statements showed responses skewing heavily towards indicating strong impacts on residents. In particular the statements relating to the theme of high-rise development had answers (67.9%) showing strong impacts on residents. Statements regarding stress on infrastructure and amenities also had a high proportion of answers showing strong impact on residents. Although within that theme, the statement regarding the overcrowding of parks had a much more moderate distribution of answers.

Statement (xvii) regarding the availability of parks, was the question within the theme of stress on infrastructure and amenities that had the widest range of answers. While it did have a slight majority of answers indicating an impact on participants, with 51% of participants finding it impactful, 26.5% and 22.5% found it not impactful and neutral respectively. This showed a potentially different attitude towards park infrastructure compared to other aspects of infrastructure such as schools and doctor’s surgeries.

Table 4 presents the mean ratings of the responses to the statements by themes. Details of the frequencies of response to each statement can be found in Appendix 5.

Table 4. Survey Statements, Themes and Means

| No. | Statement and Theme | Mean Responses |
|--------|--|----------------|
| | Perceptions of density in the private realm | |
| (v) | I feel that there is not enough space in my house | 3.39 |
| (viii) | I find it difficult to maintain my privacy in this neighbourhood | 2.88 |
| | | |
| | Perceptions of density in the public realm | |
| (i) | The Isle of Dogs is difficult to navigate around | 1.84 |
| (ii) | Public spaces on the Isle of Dogs are often crowded | 3.02 |
| (iii) | I find that there are too many people living in this neighbourhood | 3.76 |
| (iv) | When walking around the Isle of Dogs I find the pavement are not wide enough and convenient to use | 2.49 |

| | | |
|--------|---|------|
| (vi) | I often feel like I have unwanted interactions with my neighbours | 2.41 |
| (vii) | People living in this neighbourhood do not come from similar backgrounds | 3.90 |
| | | |
| | Stress on infrastructure and amenities | |
| (xi) | Traffic is getting worse on the Isle of Dogs | 4.24 |
| (x) | Public transport on the Isle of Dogs is overcrowded | 3.92 |
| (xv) | I am not satisfied with the availability of GPs, schools, libraries, gyms and other amenities on the Isle of Dogs | 4.00 |
| (xvi) | It is getting more difficult to get a doctor's appointment, school space etc. on the Isle of Dogs | 4.20 |
| (xvii) | Parks on the Isle of Dogs are not big enough for everyone to share satisfactorily | 3.37 |
| | | |
| | High-rise development | |
| (xi) | The Isle of Dogs has too many tall buildings | 4.20 |
| (xii) | Buildings on the Isle of Dogs are getting taller | 4.71 |
| (xiii) | Building facades block out too much of the light/sky on the Isle of Dogs | 4.22 |
| (xiv) | Buildings are too close together on the Isle of Dogs | 4.43 |

4.1.1 Analysis of the survey results

I also looked to see if clearer trends could be identified by looking at answers according to themes and the demographic information collected. This included age, race, gender and length of stay. However, according to the earlier analysis of the chosen themes using Cronbach's alpha, only the themes that scored satisfactorily on that analysis were analysed: Themes 3, Stress on infrastructure and amenities, and Theme 4, High-rise development.

By averaging each individual's score in both of those themes several trends were observed. The first is that across all demographics the average score was higher for high-rise development than it was for all other themes, including stress on infrastructure. However, the average score indicated that participants felt strongly impacted by Themes 3 and 4.

Age was a factor for theme four, where it was noticeable that older participants tended to feel more impacted by high-rise development.

There were no noticeable trends for Ethnicity other than that non-white participants felt slightly more impacted by density than white participants.

Gender was a factor for both themes. The results showed that in general women felt more impacted by density than men. By looking at the distribution of answers, we can see that women were more likely to feel impacted across all four themes, but particularly by Themes 3 and 4.

A linear regression, comparing length of stay versus each participant's average score was conducted. This was done both with their average overall score, and their average score for each theme. This showed a significant moderate positive relationship for the overall average

($R = 0.470$, $p < 0.001$) and the average score for each theme ($R = 0.453$, $P < 0.001$). The regression coefficient for both regressions indicated that every one year increased stay in the Isle of Dogs, corresponded to an increase in 0.023 in the rating of overcrowding in the public sphere.

4.2 Interview results

The interviews were transcribed and analysed using a thematic analysis approach. A thematic analysis approach is a method used to analyse qualitative data by looking to identify and analyse patterns. This approach was chosen because of its utility in understanding experiences and thoughts across a range of qualitative data from multiple sources, whilst not requiring the use of theory to inform the analysis (Braun & Clarke, 2012; Kiger & Varpio, 2020). The approach's steps are reflected in the layout of the results and analysis sections where themes are identified, reviewed and then analysed.

1. **Positive attitude and envisaged permanence in residence:** Many residents on the Isle of Dogs enjoyed living on the Isle and have plans to continue living on the Isle for the foreseeable future.
2. **Perceived densification and strain on infrastructure:** The main issue and fear of residents on the Isle of Dogs is the increasing strain on infrastructure within the Isle. This strain is associated with high-rise buildings and densification
3. **Geographical bias and attitudes to development:** Participants living in the newer high-rise towers in Canary Wharf and the North of the Isle of Dogs were less likely to oppose development compared to the other participants
4. **Resignation and lack of agency:** Most residents are resigned to continued high-rise development, and do not feel like they can change or impact this.

4.2.1 Positive attitude and envisaged permanence in residence

Several participants expressed that living on the Isle of Dogs is a unique experience, unlike others in London.

I quite liked the idea coming here. I've lived in Wandsworth, I've lived in southeast London, I've lived in Dulwich. Most of my life I've lived in traditional... Victorian terraced houses. And so I came here, because it is different. – K

Participants often referred to the walkability of the Isle of Dogs as a large positive. This was largely when referring to the northern and more central parts of the Isle.

If I want to have a nice quiet stroll around the area, I'll walk south. If I want to see a place with a lot of buzz or I want to buy something I'll walk North to go to Canary Wharf. I have the option of doing either option within ten minutes of walking! You can walk, other places you probably need to take the tube or take the car. -R

Participants also felt that the Isle of Dogs had a lot of green and blue spaces that improved their mental and physical well-being. These spaces (Figure 4) were often identified as being an escape from the crowding and noise of the rest of their neighbourhood.

I do like that we're an island, and I think that there is a little bit more tranquillity in some ways around here (the Isle of Dogs). – D

The parks are so well-used. If you come on a nice day, people bring picnics and everything. We're all living in high-rise. We need to go outside for a couple of hours. – P

I can walk five minutes [from my flat] and be in a very beautiful and quiet green area. - R



Figure 4. an example of the many blue and green spaces the public can access on the Isle of Dogs.

Many participants, particularly those that have been on the Isle for longer expressed that the sense of community was a large part of the reason they wanted to stay on the Isle.

I definitely want to stay... It's got its problems. It's got its community who are really tight. Most of the time, we all get on and it's good – D

I'd be hesitant to leave the Isle of Dogs because it's got such a nice community.

I'm 67 now and I don't want to have to start again – P

However, this community is threatened by the constant development. Both due to people being priced out, but also due to the loss of community hubs.

The people [here] used to be locals, and now they've been priced out. It feels very have or have not. – Z

I know so many people who have grown up here and have not been able to buy or rent where their parents live because house prices are so crazy. The community is having to move out. People who spent their whole lives here can no longer afford to live here. – Z

P is retired and used to spend time managing a furniture shop that upcycled furniture and provided skills training to young people in the area (Figure 5). Recently, they were evicted from their shop with only 10 days' notice by their landlord.

This area used to have a whole group of people who were lonely and old and they'd just come and sit down and chat. They'd go to the foodbank and get their food and come to the shop and chat. Now there's nowhere and we've lost that community. - P



Figure 5. Construction site where P's shop used to be

Despite this, S feels that tenancies in her area are becoming longer, as people stay on the Isle for longer. However, even these long-term tenancies are ending when their children begin to get older.

Actually, one of the things that has changed is that I think people have been living here longer. There's a lot of people in my block who moved here 10 years ago who are still here. But... when the kids get to a certain size... the [families] disappear.

Residents on the Isle of Dogs feel a strong attachment to the neighbourhood and the communities that have developed here. They feel that the Isle of Dogs has many advantages other parts of London do not, such as access to green spaces and walkability. However, they feel that the increasing strains on various aspects of the Isle of Dogs, and the deterioration of the neighbourhood in terms of cleanliness and loss of community hubs have made it difficult to live here. Additionally, residents with children feel that the Isle of Dogs does not have enough high quality schools and space within homes for them, and tend to leave the Isle when they have children or as the children get older.

4.2.2 Perceived densification and strain on infrastructure

People's largest complaint about the Isle of Dogs was the increasing strains being put on local infrastructure and amenities. This was voiced by all the participants to a great extent. This was often referred to directly in statements as a result of high-rise development. The most commonly perceived strains on infrastructure were in healthcare, waste collection, school spaces, access to green spaces, public and road transport, and police.

I'd definitely pause on development. We don't have enough doctors or schools. – PB

They're letting developing developments go up, how high, but nothing else (referring to infrastructure provision) is changing... How does that correlate?

One major complaint was a lack of access to the Isle of Dogs green spaces. The Isle of Dogs has two major parks, Millwall Park and Mudchute Farm. It also has several smaller scale green spaces such as Island Gardens, St. John's Park and the Sir John McDougall Gardens. Residents, particularly living further south on the Isle of Dogs, primarily used the largest of these parks, Millwall Park.

If you go there (Millwall park) in the summer it's packed! You'd struggle to put down a blanket. – S

We have four parks. It's good so far, but as the number of people increases they are becoming overcrowded. – N

The location of new developments, and particularly their impact on public spaces such as parks was of great concern to residents. Residents expressed that they were worried about these spaces either being developed on directly, or having large developments being built around them.

When asked about developments on or near Millwall Park: That would be suicidal, seriously. It'll become like an industrial area with just flats. Who would want to live [here]? – N

Residents also expressed that there were not enough gyms or leisure centres on the Isle. The only leisure centre, Tiller Leisure Centre had recently reopened after a period of closure for refurbishment. A refurbishment that only came about due to the large amounts of residents who opposed its development. While gyms are more numerous, they are not always affordable.

There's some sort of gym place here (near my house), but I don't dream I'd be able to afford it. And the Tiller Centre is ... frustrating when it's crowded. – D

Contrastingly, K and R mentioned that they enjoyed the flats they were staying in because it gave them access to private amenities available to residents of their respective towers only (Figure 6).

(Speaking about their apartment) There's a business lounge, there's a rooftop garden, there's a terrace, there's a gym, there's a swimming pool. - R



Figure 6. The rooftop terrace in the tower that K lives in

Participants also expressed their worries that aspects of living on the Isle of Dogs that they currently enjoyed were beginning to decline. Such as public transport, specifically buses and the DLR.

I think the transport is excellent, but the infrastructure is collapsing because the more high-rise they build, it just can't cope. If you go on rush hour you can't even fit on the bus. – P

Participants were also concerned with the lack of healthcare provisions on the Isle. They identified this as something that had worsened over time.

Trying to book a doctor's appointment frustrates me so much it just feels not possible. I try not to do it. – Z

If you've got chest pains it takes three hours for an ambulance. And that's in the middle of the night... My partner had severe chest pain, which she couldn't determine what it was. It took three hours for the ambulance to get there. They put her on the top emergency thing and it took three hours. It used to be eight minutes. – D

Participant D spoke at length about how the economic downturn had impacted the shops and restaurants in his local area. In and around his flat near Millharbour, the ground floor of most buildings had been constructed for commercial purposes. He detailed how since he had moved in five years ago, many of these spaces had either remained empty, or seen businesses open and then close. Many of these occurred during the COVID-19 pandemic. On one building, there were 5 restaurants that still had signage up but were listed as permanently closed online. The only two forms of businesses that had survived the pandemic were real estate agents and coworking spaces.

As shown by the interview quotes, the main issue and fear of residents on the Isle of Dogs is the increasing strain on infrastructure within the Isle. This strain is associated with high-rise buildings and densification.

4.2.3 Geographical bias and attitudes to development

Residents had mixed opinions towards continued development on the Isle of Dogs. Residents from newer high-rise towers were much more supportive of ongoing development, and less

attached to the legacy of the Isle of Dogs. (R and K below). Participants from lower rise buildings were much more cautious in their support (S below).

If you have a (housing) shortage... then you need to build high rises because that's better economics – R, resident in Talisman Tower (31 storeys high)

I'm not negatively biased towards change, because I think change is part of the dynamic of the city... the... buildings that were here, they were probably not fabulous – K, resident in residential tower in Canary Wharf (60 storeys high)

It's part of living in London, there's always something going up around you... I want considered development... Surely not everyone wants to live in a high-rise block. – S, resident on the Isle of Dogs

Residents who had been on the Isle of Dogs for longer expressed an attachment to the various landmarks on the Isle of Dogs. Most often these were pubs or parks.

The Nelson pub... somebody knocked that down without permission and they were made to rebuild it stone by stone... I was quite happy about that. – P

In addition to being more accepting of development, K and R expressed an appreciation for high-rise buildings, particularly for both the view they provide on the towers, and when looking at the towers.

I do enjoy tall buildings, yeah... They're aesthetically pleasing. – R

The reflection of the light on rising sun, and the setting sun is quite special. – K

It is actually quite nice to have a more wide open view, I... quite like that about the towers – K referring to the view from his tower's rooftop terrace.

Amongst the other participants there were a mix of opinions on how high-rise typologies made them feel. A common statement was that the high-rise buildings created a sense of claustrophobia and overcrowding.

It can feel quite claustrophobic... I suffer quite badly from depression and the overwhelmingness (sic) of coming out of your building to be confronted by not only five years of construction, but then this whole new building, which is so high... - S

The lack of green space, the lack of blue sky because... you start to be more and more enclosed. – S

I don't want the Isle of Dogs to turn into a sea of concrete...They've gone so high, it feels like they're trying to pack every square inch. It feels so overdeveloped. – Z

I just like the different kinds of architecture, apart from that one (pointing at a high-rise building), apart from that one, it makes me feel a bit sick. It looks like it should fall over. – P

Residents also identified the area around North Quay DLR as being an example of poor design (Figure 7). It is the most highly developed area outside of Canary Wharf, and it's large amount of tightly packed high-rise buildings and large construction sites meant that participants felt it was one of the least appealing parts of the Isle of Dogs.

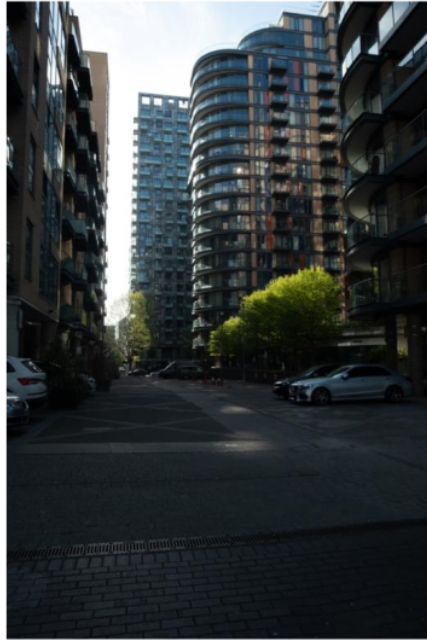


Figure 7. Road adjacent to Millharbour in North Quay. The typology here is typical to this part of the Isle of Dogs and was identified as the type of design that residents felt impacted them negatively.

Participant D expressed that to him the high-rise buildings were symbolic of a lot of systemic issues, particularly those to do with the UK's housing crisis.

If you walk up the road to Canary Wharf... they're investing in housing because that's a safe bet... but it doesn't change anything. It just sits the money in housing and blocks out people... to be a generation of slaves to mortgages and rent. – D

P however, felt that the Canary Wharf group had done enough to support the Isle of Dogs. She mentioned both the contributions the group had made to the local economy, but the grants they gave to community groups to host Christmas and Halloween parties.

Some people say... we're sick of all the rich people coming in... and we don't get any of the money. It's not completely true... because the Canary Wharf estate provides a

lot of apprenticeships in banking, business and insurance. And of course there is an amazing amount of shops in the mall. – P

The Canary Wharf estate are very generous in that respect... They prefer to spend money than hold it. – P

Several participants felt that without the development of Canary Wharf the Isle of Dogs would not have a lot of the restaurants, shops and public transport it has now. Even S who voiced a lot of disagreement to high-rise developments and Canary Wharf felt that Canary Wharf had added to the quality of life on the Isle in this way. Additionally, S felt that the development had made the Isle of Dogs busier and as a woman who often had to walk home alone at night, feel safer.

They wouldn't have had all this (referring to shops and restaurants). There was one bus. – P

There was nothing here. There were no takeaways. It was just miserable... Also the more people you have, the more safe you feel. – S

However, all participants voiced that they were supportive of development in theory, but just not in the way it was currently being done. Sometimes these views were conflicting, with participants not having a clear stance on what kind of development they supported.

I'd definitely pause on development. We don't have enough doctors or schools. Later in the interview: If we're not losing any green space I don't mind where they build. Even if they build next door. – P

It's part of living in London, there's always going to be something going up around you. But can we not take every inch of greenery and build on it? – Z

K and R make much greater use of the amenities at Canary Wharf than any of the other participants. However, most participants mention that they find the public spaces and built environment within Canary Wharf more organised, safe and clean.

I think this part of Canary Wharf... is a bit of a bubble, right? It's clean, feels secure.

As soon as you leave this little bubble, it gets quite messy'. – K

I quite like Canary Wharf, I like that it's well maintained and clean. – Z

We're spoiled for choice with restaurants [at Canary Wharf], I go often. – Z

I always used to bring my children to do the sculpture walk in Canary Wharf. – P

R mentions that Canary Wharf is now their primary destination for any shopping they need to do.

I could do my shopping, basically anything that I need within walkable (distance), 10-15 minutes (at Canary Wharf)... I don't have to go to Oxford Street anymore. - R

While several participants voiced their concerns about the increasing height of buildings and the effect this had on blocking out light and the sky, only one participant had strong opinions about other aspects of high-rise design such as light reflection, wind tunnelling and increased noise pollution due to the echoing effect of multiple skyscrapers. Several participants felt that the view of the Canary Wharf skyline from the Isle of Dogs was actually a positive, while only one felt it was a negative for symbolic reasons. Participants however were mostly disapproving of living in a high-rise themselves. Many said they preferred to have access to a garden or semi-public green space (e.g., a community garden or pocket park) near their house from the ground floor than to live in a high-rise tower.

What was clear from interviews was that while participants mostly felt negatively about high-rise typologies than terraced housing for example, they were far more negative about the increased density and the associated strains on infrastructure that came about with high-rise housing than high-rise housing as a principle. Many participants agreed that high-rise housing was not a traditional form of housing in the UK but accepted that it was becoming increasingly common on the Isle of Dogs. Many pointed to development sites where high-rise housing stood next to 1-3 storey buildings as negative examples of development and discussed how the potential of this happening to them being a significant stressor.

4.2.4 Resignation and lack of agency

One factor in why participants felt like they do not have a say in how densification and development happens in their neighbourhood is that they don't feel represented or heard by their local authority. Almost all participants felt that the issues they had with development were the fault of the council for acquiescing to developer's requests and not being stringent enough when granting planning permissions.

I do not trust the council at all, they do not care about the community, they're just there to fill their pockets. – N

I think there is a spirit to the people in the East End and that's really good. But I think their voice needs to be heard. – D

Tower Hamlets [Council] is pretty screwed up, why do they give these developments permission? – N

I never thought it (the neighbourhood) would get to this stage [of] development. I never thought the council would allow it. I never thought the apartment buildings would be approved to be so high. – Z

They (Tower Hamlets council) have built a hell of a lot and they get a lot of money for it – S

At the moment Tower Hamlets has got £150 million that they claw back from all the big high rises but they don't spend it on the Isle of Dogs – P

Even though they say during the planning process they plan for it (negative impacts of high-rise) they clearly don't do the modelling correctly. -S

The scale and rate of development can be disconcerting and create a feeling of helplessness amongst residents.

This is where the printworks used to be, I've lost track of when they tore it down – S

I feel like they take forever to build our (son's) school. But these towers take just months to go to that height. – N

I never thought Asda would be developed. Now there are two tower blocks planned there. It's very stressful. What if we have to relocate... We see things all the time that weren't there before. – N

The landlord of the shop [I volunteered at] gave us 10 days to get out. It's a charity that upcycles furniture and gives people experience in woodworking. The landlord said 'you've got to get out' and the next thing it was all full of building works. - P

This is very intense, there are four to five active development plots at any given time. Especially in such a small area. The neighbourhood feels like it's a work in progress –
R

The rate of change means that residents find the Isle of Dogs difficult to navigate at times. Especially in the more intensely developing north side of the Isle.

Anywhere sort of north of here is literally impossible to google. You have to know your way around the roads grid... and when you come out to Canary Wharf, because everything's glassy it all looks the same. S

Participants also felt that the needs of residents were often ignored during development. In the case of the delayed Westferry Printworks development which several participants live close to, residents felt strongly that the development had been given permission to be built too high without respect for the Canal Club and the Millwall Docks which residents use to swim and do water sports. Additionally, the development site was meant to include a new secondary school for the neighbourhood. The delay meant that the school site had to be temporarily located at a former office building. Participants, particularly participant N whose child attends that school felt that it was unfair that her child's educational facilities should be punished because of issues regarding development.

We've been fighting for a new school for our son for a long time. They're still in a temporary school in a office building. They have to walk to the park to play and do PE.
– N speaking about the issues with the school site.

Because he didn't get leeway to add 40 stories the Printworks has come to a halt, and that's where there's meant to be a new secondary school! - P

Another contentious issue was the proposed development of the Isle's largest supermarket, Asda. All participants identified the Asda as the Isle's most popular supermarket due to its cheaper prices and larger availability of food. In September 2021 its redevelopment was approved by Tower Hamlets council. According to a news article, it received over 100 letters of objection (Lockhart, 2021). Many participants voiced their concern against it and felt aggrieved that they had been ignored.

So many of us protested against it (Asda redevelopment). So many of us signed petitions, but it's still going ahead. - N

The primary way in which residents engage with local politics and planning is through opposition to developments. Several participants mentioned the contentious Westferry Printworks development which was the subject of national scrutiny due to irregularities in the then Secretary of State's handling of its planning appeal as a key development they had protested against.

I've been involved in a bunch of planning meetings and campaigns. Mainly about cladding and the Printworks. - P

Most participants other than R and K had attended meetings or protests against development in the neighbourhood. They voiced that it was the only way they felt the community could truly gain agency over the changes they were seeing in their neighbourhood.

5. Discussion

Both the survey and the interviews showed that residents feel strongly impacted by high-rise development and densification in various ways. The survey clearly showed that residents have consistently strong feelings about the impact that stress on infrastructure and high-rise development has on them. This was apparent in the interviews which showed and expanded on the depth of this impact. Additionally, while the survey was not as clear on the perceptions of density within both the public and private realm, the interviews were able to show that there were concerns. Nonetheless, as in the quantitative survey, the primary concerns were linked to the two main issues, high-rise development, and the strain on infrastructure.

5.1 Measuring perceptions of density

A strength of the mixed-methods research approach adopted in this study was that it showed how the results from the different research processes can validate or challenge normative assumptions.

The survey results for the most part fit within the assumptions that residents on the Isle of Dogs would mostly feel impacted by density. The results also showed that for the most part, regardless of demographics, participants overall mostly felt impacted by density to a strong degree. This was supported by the interviews where participants felt impacted by high-rise development and densification regardless of their backgrounds.

The interviews, however, challenged the normative assumptions that density and densification are positives that can improve the neighbourhood. There are some positive aspects of density that were clear from the interviews. This included walkability, particularly access to various amenities within a 15-minute walking distance and public transport provisions. However, for

the most part, density and densification were perceived as negative factors. This was because they were linked strongly to negative impacts on the neighbourhood. These included stress on infrastructure and amenities, construction which created noise and air pollution, the increase in building heights with its associated effects, and the negative impacts of high-rise typologies that were identified in the literature review.

Strain on infrastructure and amenities of all kinds was the impact of density that was felt most strongly by residents. It was an impact that was felt by all participants regardless of class, race, gender, or tenancy type. This impact was also one that participants felt impacted them daily and had ramifications on their physical and mental well-being. Almost all participants felt that development should be stopped as it outmatched the pace at which infrastructure and amenities were being developed. The interviewees also questioned whether there was space to build new infrastructure, particularly schools on the Isle at all. Some participants expressed that new high-rise developments should not be entirely residential and should include new doctor surgeries, or schools. When informed of the London Plan's target for new homes on the Isle, some felt that there would never be enough room to accommodate the required infrastructure for the increased population. Many cited the already limited space for schools in the neighbourhood and closures of existing doctor's surgeries as evidence that the Isle had reached its full capacity.

Another main indicator of the impact of density was the high-rises themselves. Residents perceived high-rise development to be synonymous with densification. In the interviews participants used the development of towers and the densification of the neighbourhood interchangeably. This could be attributed to the fact that densification and density are academic terms, whereas the development of high rises is a very physical and obvious change to the neighbourhood. Participants who lived in high rises appreciated and accepted the economic

benefits for developers and the council to build high-rises, whilst other participants felt that the economic gains made from high-rises were done for the benefit of developers and councils and felt that it was unfair as none of the benefits went to residents who had to live with the impact of high-rise developments in their neighbourhood. A large part of this was that many participants were aware that the Isle of Dogs had a high proportion of London's high-rises and felt that this was also unfair as they did not see the benefit of these high-rises. This tied in with residents' perceptions of the council as a body that benefitted from high-rise development at the expense of residents on the Isle.

A key aspect of the impact of density that was challenged by interviewees was that multiculturalism was mostly negative. It was one of the few statements that received a mixed response from participants. The participants interviewed were on the whole proud of the multicultural nature of their neighbourhood in terms of ethnicities and felt that the fact that their neighbourhood and the attendance at community events was composed of various ethnicities was a positive aspect of the neighbourhood. Multiple participants stated that the increase in East and South Asian supermarkets and the increased in restaurants serving food from various cultures made the neighbourhood more vibrant and made them feel like they were more likely to stay. However, aspects of cultural differences were often identified as negative, in particular those to do with class. Several participants voiced their displeasure at council and social housing tenants and associated those tenancy types with negative behaviours such as littering and drug use. Most notably these opinions were expressed by those who owned their houses but lived near council housing. This was recognised spatially during the walked interviews as participants identified areas of the Isle of Dogs which they viewed as lower income and therefore more undesirable.

Another negative point voiced by participants was the use of the Isle's public spaces and roads by people who they regarded as not living within the Isle. This related to their worries about strains on infrastructure and amenities. A common framing for this negative impact was that the improvements to the public areas gained from development of high-rises was then made detrimental due to its use by 'unwanted' groups from outside the neighbourhood. These negative feelings were not found by participants within Canary Wharf. They attributed this to the fact that the private security firms within Canary Wharf were quick to move on the types of visitors that the participants felt impacted the neighbourhood negatively, often younger people of colour. Many participants who voiced that they enjoyed the community they had created on the Isle of Dogs felt strongly that this community was under threat by outsiders. This included at times outsiders who had recently moved to the Isle. It was clear that the stress of development and densification meant that participants were not only beginning to harbour resentment towards local authorities and developers, but also more recent arrivals to the neighbourhood. This was often coupled with the earlier expressed dislike of lower income residents, but was also directed towards wealthier arrivals, particularly the more transient of those such as international students or corporate workers. These were two demographics that participants felt were not invested in establishing a community on the Isle. This was contrasted by R, a former student turned corporate worker who felt strongly that he had established a community in the neighbourhood.

5.2 Mixed views on high-rises

The interviews showed that a series of associations relating to high-rise development and perceived density are being made by residents. This is illustrated in Figure 8.

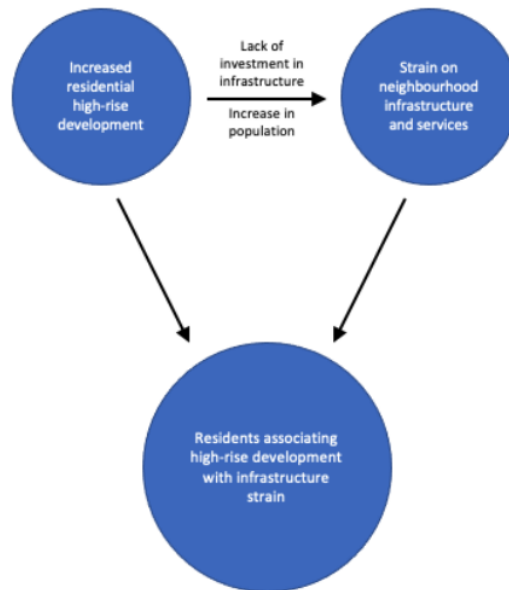


Figure 8. Residents' associations between high-rise development and perceived density (author's own)

From the conversation with participants in the interviews it seemed like these associations were the main reason for opposition to new high-rise development on the Isle. Therefore, addressing this association, in particular its roots could be key to addressing local opposition to high-rise development.

The clearest solution is to increase investment in local infrastructure and services. Particularly those most highlighted by participants, this included access to healthcare, road traffic, schools, waste collection, and green spaces. Increases in the number of amenities such as shops and restaurants has led to increased acceptance of Canary Wharf, but do not go far enough in addressing people's reservations about high-rise developments more locally.

Participants also all understood that the council collected some form of financial compensation from developers building high-rise developments. Participants felt that the nature of how these collected funds were spent was unclear, often resulting in an increased mistrust of the council. Greater transparency about how the funds gained from high-rise developments were spent, and how this benefitted the residents of neighbourhoods, such as where high-rise developments are spent, would be crucial to ensuring residents do not feel like they are being treated unfairly.

The benefits of high-rises are most often only experienced by residents within them. Participant K's positive opinion of high-rises contrasted strongly with other participants' own experience of high-rises. At the end of our interview K invited me to his high-rise building's rooftop terrace, from this terrace you could see in all directions for kilometres, including an unobstructed aerial view of the whole of the Isle of Dogs. He said this vista was a huge draw to him deciding to live in this location and that it was the reason he frequently visited the terrace. This contrasted strongly with participants such as D or S, who voiced that they constantly looked up at high-rises and saw them in a hugely negative light. This was primarily due to the impact their design had on the local area, casting shadows and causing wind tunnelling, but also because they symbolised a level of wealth they could not attain. In addition to just visiting the terrace, K also showed me several of the available amenities in the tower, including a free café on the terrace and a bar. He also pointed out the similar amenities available at other towers nearby, including gyms and pools. This level of 'free' and available amenities is something that was so often a stressor for other participants, yet for participants living in these high-rise towers such as R and K, was free.

5.3 Good and bad practice in the design of high rises

Developers and local authorities should consider the more positives of high-rise development on the Isle of Dogs. These include creating greater access to green and blue spaces and to large amounts of public space, and active streetscapes. I will discuss these below.

5.3.1 Access to green and blue spaces and public spaces

The Isle's access to green and blue spaces in close proximity to high-rise developments was a key factor in resident's ability to cope with increased development. This access to green and blue spaces is not something that is available in many other Opportunity Areas. However, it does echo the 20th century Modernist approach to building tower blocks, where towers were initially planned to be on the outskirts of London's parks to ensure residents had access to green space and green vistas from the towers. Areas like North Quay where this principle was not followed were identified by participants as the least appealing parts of the neighbourhood and often referred to as examples of what they would not like their local area to become.

5.3.2 Improvements to streetscape

Participants felt that developers often contributed positively to streetscapes in the long term. Improving routes through the Isle of Dogs, establishing pocket parks, and increasing permeability were identified as benefits of development. However, in the short term, participants disliked the impact of construction sites on the navigability and overall liveability of the area.

5.4 Density within the home

The one way in which participants did not feel like they were impacted by density was privacy and noise within their home, and interactions with their neighbours. Most residents felt that

they had large amount of privacy in their homes and rarely heard their neighbours. They also did not feel like they had issues with their neighbours, and in fact felt like they had many positive interactions with their neighbours. This was reflected in the survey where these questions scored more positively.

However, most participants did feel that their homes were too small. Many voiced that this would be a potential factor in forcing them to move out of the Isle of Dogs, particularly those who had young families or were looking to start families.

5.5 Division between Canary Wharf and the Isle of Dogs

There was a clear division between the participants who lived in the new high-rise towers, participants R and K and the rest of the interviewees. Both R and K had moved to the Isle a lot more recently than the other residents and lived in or near Canary Wharf. They and the people they associated with were much more likely to use the amenities in Canary Wharf. They themselves acknowledged that their social sphere contained very little overlap with people who lived in the more low-rise, southern parts of the Isle of Dogs. This was echoed by the other participants whose social spheres were the exact opposite of R and K. All residents voiced that there was a divide between the newer and older residents of the Isle, often equating the newer residents as richer or of a higher economic class. This was despite the fact that many of the participants that felt like this owned their own homes and were financially comfortable.

Residents other than R and K also felt there was a significant geographical divide as well on the Isle, with the areas to the north, Canary Wharf, Blackwall, and North Quay being labelled as highly developed, high-rise areas, and much more undesirable to live in compared to the rest of the Isle.

Canary Wharf has bloomed into a commercial district that is busy at all times of day with visitors to its shops and restaurants. However, for many of the participants interviewed (other than those living in the newer high-rises), these are not spaces that they find welcoming or use often. This can be attributed in some cases to the occupations of the residents of the tower, R and K who worked in high paying corporate jobs and potentially have more spending money. Other participants on the Isle of Dogs, even those who owned houses expressed that they felt priced out of using the amenities on Canary Wharf. Some mentioned that they may shop at the Waitrose in Canary Wharf, but only on some occasions as they found it too expensive. While the participants did not disclose their financial situations, many of the homeowners shared that they had bought their houses between 10-22 years ago, when they were less expensive than they were now.

Residents pointed out that as street life improvements had occurred on Canary Wharf, an overall decline had been seen on the Isle. Pubs, shops and foodbanks that had been part of the community for many years on the Isle have been gradually closing, with no similar institutions opening to replace them. This had been accelerated by the pandemic, participant D showed me that around his flat there were 6 restaurants that had closed permanently over the pandemic with no replacement. Participants R and K who lived in high-rise towers in and near Canary Wharf were very supportive of their immediate area's development. They pointed towards pop-up cryogenics facilities, urban farms, and new food markets as innovative, while other participants felt that these facilities were frivolous and unnecessary. Canary Wharf, on the other hand, has continued to market itself as an 'urban village' and '15-minute city' with new amenities constantly opening up. This all points towards a growing divide on the Isle between the wealthier residents in and around Canary Wharf, and those less wealthy living to the south.

Ironically though residents in Canary Wharf are to an extent more transient than residents in the south of the Isle of Dogs. Participant K, a renter said that he and many other of his neighbours who were also renters were being forced out by increasing rental prices. This was not something echoed by the other participants interviewed in the southern part of the Isle of Dogs who often owned their homes and were therefore not at risk of being pushed out by rental prices.

This divide between the high-rise towers, the economy they create and the social groups that use them, and the rest of the Isle is something that is getting more and more apparent. While not all aspects of this development are disliked by residents on the Isle of Dogs, there are very clearly two distinct groups of residents on the Isle of Dogs that are growing further and further apart. These groups are not entirely separated by aspects such as wealth or race, but there is an element that suggests that the newer residents are wealthier, or at least more likely to spend money on more costly amenities.

6. Conclusion

The aim of this research process was to understand and explore in detail how residents experience high-rise development and density at a neighbourhood level. This aim was met with the quantitative and qualitative results showing the strength and nuances of the residents' feelings and perceptions of density. It also confirmed the views held by the majority of literature covered, that density is multi-faceted and context dependent.

A key aspect of the conversation about high-rise development and densification is if they can be used to create and impact positive change in the city. This is a crucial aspect of answering questions regarding housing supply and increasing populations within cities, but also with answering wider global issues to do with resource use and sustainability. This research has not looked to answer these technical questions about development and densification, but rather examine their social impacts.

During the interviews, densification and high-rise development were not introduced as negative aspects of neighbourhood change. However, participants were quick to associate development and densification as highly negative topics in relation to their context. This was distinct from how they felt about densification as a concept, which they were more ambivalent about. This is an important distinction as it addresses what is a common dismissal of the opposition to development as NIMBYism or Not In My Backyard -ism, where residents are resistant to any sort of change in their local area. While aspects of this were observed in some residents, particularly with regards to class, participants on a whole felt that they would not mind the addition of new developments to the neighbourhood if there was also an equivalent increase in the provision of infrastructure and services. It would be of interest to explore this in more detail, analysing the amount of infrastructure provision provided on the Isle of Dogs currently, and how it compared to historic numbers.

The research also showed that residents are much less concerned with physical measurements of density compared to their perceptions of density. Residents did not have numbers to hand about population increases, or new high-rise towers built. They did, however, have an intuitive feel that their neighbourhood was becoming more crowded, and its infrastructure more stressed. None of the participants were engaged with local or neighbourhood plan processes and none of them knew about the London Plan, or that the Isle of Dogs was an Opportunity Area. This shows that policy and planning is failing to include residents in its development processes. However, it was also clear that understanding how their neighbourhood was a site of strategic importance for the Local Authority and city government did not make residents any more positive towards future development. It in fact had the opposite effect, with residents expressing that the London Plan was imposing unfair pressures on their Isle without addressing the needs and requirements of residents.

Participants were not engaged with or aware of these planning processes. Instead, they engage with the planning system on a case by case basis, in opposition to developments near or around their homes, place of work, and places of leisure. This method of engagement with the planning system has left residents feeling defeated and untrusting of local authorities and the planning system. They often feel that planners are not working to support residents, instead feeling that they are agents for private developers and other profit-makers. There is clearly much work still to be done in order to address these obstacles in the implementation of high-rise development and densification. Policies to curtail the negative impacts of development such as the High-Density Living Supplementary Planning Guidance published by Tower Hamlets in 2022, or the London Plan (2021)'s policies on tall buildings were not known by the residents, and do not seem to have been able to prevent residents from being impacted by densification and high-rise development.

Development on the Isle of Dogs has engaged seriously with common urban design critiques yet for many residents this does not make up for its shortcomings. Its streetscape has been activated with mixed-use developments, innovative street furniture, and pocket parks. However, residents found these street level interventions confusing and often they were placed in poorly thought-out locations, such as in between towers, or near large roads or noisy train tracks. The residents' expression that they found the developments as a whole disorientating suggests a failure of developers to create a cohesive streetscape for the neighbourhood as a whole. This brings into question the ability of multiple developers to create successful neighbourhoods when working on high-rise developments in close proximity to each other without a comprehensive plan in place. Many participants also felt that these street level items, even when they are well maintained or well-designed, do not make up for more serious failings of the neighbourhood. This primarily includes the strains on infrastructure, but also includes other issues such as rising rents and service charges.

Development on the Isle of Dogs was associated with a loss of community by the participants. This is through a myriad of ways, including rental increases, demolition, and loss of community hubs. This brings into question the purpose of development on the Isle of Dogs. Its impact on long-term residents of the Isle is clear, and many feel aggrieved that a place they have called their home for so long can be changed so drastically so quickly. In particular, the loss of community hubs such as foodbanks, charity shops and pubs has made residents feel that developers and the council are either ignorant or unconcerned with the importance of these amenities to residents.

The research also challenged normative assumptions about densification and high-rise development. It showed that indicators of density in the public and private realm were far less impactful than indicators of density relating to stress and infrastructure and the development

of high-rise buildings. Within the Isle of Dogs this is possibly due to the generally high quality of public and private spaces. A contrast to neighbourhood infrastructure, which residents feel is overburdened, and the overwhelming number of high-rise buildings being developed. The research also shows that the link between high-rises and perceptions of density can be separated to a certain degree, with residents perceiving high-rise developments negatively because of the impact of stressors on infrastructure, as opposed to anything intrinsic about high-rises themselves.

This exploratory research using the case study of the Isle of Dogs has shown that residents are increasingly being impacted by high-rise development and densification. Planners and local authorities should engage with residents in a more transparent and honest basis, on a far greater scale than they are currently. As shown in the discussion above, local residents increasingly feel that blocking development through protest or planning appeals is their only option to engage with the planning system as a whole. Increased engagement and addressing of residents' needs will not only smoothen out these obstacles to developments, but also create more liveable high-density neighbourhoods. Neighbourhoods where densification and high-rise development can turn from being emblematic of oppressive and negative development, into the positive, sustainable solution to our housing and climate crisis.

7. Limitations of study

This research has several limitations that will be detailed in this section.

7.1 Limitations of survey

The survey could have been distributed more widely in order to get more participants. The demographics of the survey were not necessarily representative of the residents of the Isle of Dogs. Using data from the 2011 Census, white people, and in particular white women, and in particular white women, were overrepresented in the survey (ONS, 2011). Amongst the participants there was a low number of people in the age range 18-39, and no children represented in the survey. In terms of gender identities, the majority of my participants identified as men or women, with only one agender participant and no other gender identities represented. These are all limitations of the small sample size of the survey, and the fact that the survey was primarily filled out via posting on online social media groups.

The statements relating to perception of crowding in public and private spaces need to be refined as the findings indicate that participants are responding to these themes in an inconsistent manner with high level of variation in response in this group of participants.

7.2 Limitations of the interviews

The interview was successful in getting seven participants, one more than the intended target of six. However, the demographics of the participants was not reflective of the local area. For example, a high proportion of the participants interviewed were homeowners. This may have contributed to participants overall feeling like they would like to stay on the Isle as they had financial ties to the neighbourhood. The one participant who rented privately was the least attached to the Isle of Dogs and was the one participant who felt that they would likely leave the Isle of Dogs soon (within the next two years), compared to all other participants who wanted

to stay on the Isle for the foreseeable future. Additionally, the one social housing tenant interviewed had a much more politicised perception of density, with different opinions on Canary Wharf, and how the housing situation in London had impacted the neighbourhood than other residents. It would be beneficial for future studies to interview a wider range of tenancy types on the Isle to understand if there were clear differences between perceptions of density of residents of different tenancy types.

Furthermore, literature on the development of the Isle of Dogs notes that by the 90s a wave of gentrification occurred on the Isle, pushing out original residents on the Isle (Butler, 2007). The participant who had stayed on the Isle the longest, S, had lived there for 22 years. This meant that the research did not manage to interview any residents who had moved to the Isle of Dogs earlier than this first wave of gentrification although these residents were represented in the survey.

These limitations point to issues in the way participants were contacted. Participants were primarily reached via emails that were collected using the survey. The majority of survey participants (43) were collected online via neighbourhood Facebook groups, while a few (3) were contacted in person by approaching residents on the street and other public spaces in the Isle of Dogs, the remaining (3) were contacted via word of mouth. Most participants in interviews were initially contacted online, while three were notified about the survey by friends and none were from the group approached on the street. The participants therefore were likely to reflect the make-up of the online neighbourhood groups that the survey was posted within. These groups are not always indicative of the demographics of the wider neighbourhood and can often comprise of as little as 10% of the total neighbourhood residents (Afzalan & Evans-

Cowley, 2015) and can often exclude residents from low-income backgrounds (Evans-Cowley & Hollander, 2010) or those with less technical literacy (Afzalan & Muller, 2018).

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Appendices

Appendix 1 – Initial survey information page including ethics agreement

How do residents and workers perceive density and densification on the Isle of Dogs?

Dissertation title: How do residents perceive density and densification in their neighbourhood?

Researcher name: Gianluca Cavallaro-Ng

Contact details: [REDACTED]

Supervisor's name: Dr. Michael Short

Details of study: As part of my research I am looking to gauge how residents on the Isle of Dogs interact with the neighbourhood's density. The scope of this study is limited to people who currently live or work on the Isle of Dogs and is limited to their perceptions of the Isle of Dogs. The Isle of Dogs is the name for the peninsula enclosed to the North by the South Dock/Canary Wharf, and in all other directions by the Thames.

The Isle of Dogs has been chosen as a research area as it is the area in the UK with the highest population density. Surveying its residents will expand our understanding of how population density impacts residents.

If you are completing this survey you should either work or live in the neighbourhood. Your participation in this research is completely voluntary, and if at any point you wish to stop completing the survey you may do so. The survey will take approximately 15 minutes, feel free to ask for any clarification with regards to any questions you'd like.

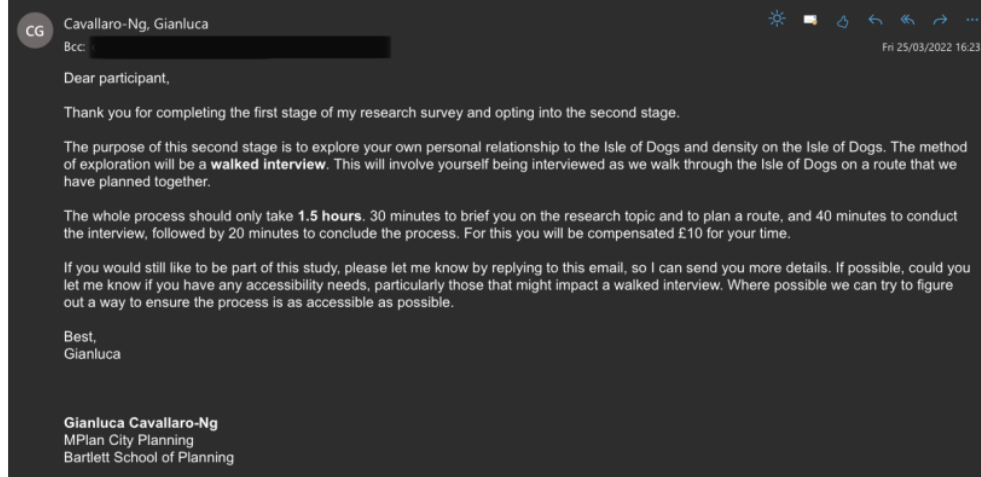
Your responses are entirely confidential, and I will not collect identifying information such as your name and telephone number. Part of this form is the collection of some of your personal information, including race, income, employment status. These are purely for research purposes and will not be passed to anyone else, neither will they be linked to your name or identity. If you do not wish to answer any of these questions you may skip them. If you wish to withdraw your answers you may do so by requesting this via email to the contact details left above.

This research has a second stage which includes a longer interview to discuss some of the topics covered by the survey. This interview will look more closely at your relationship with the neighbourhood and how it has changed over the years. The interviews will take place in 1-2 months and will take 1-2 hours of your time. If you are interested in participating in these please indicate this at the end of the form.

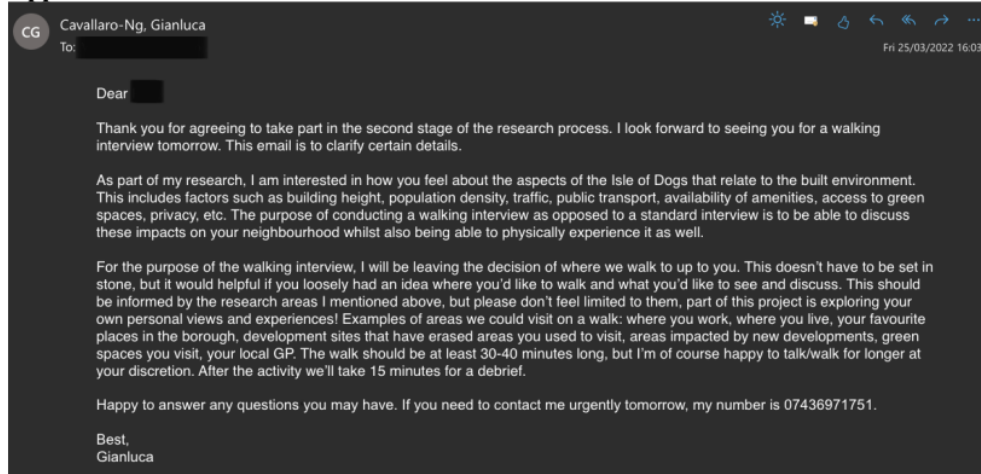
Please feel free to ask any questions via the email listed above if you are unclear or unsure about any aspect of the survey or project.

All data will be collected and stored in accordance with the Data Protection Act 1998.

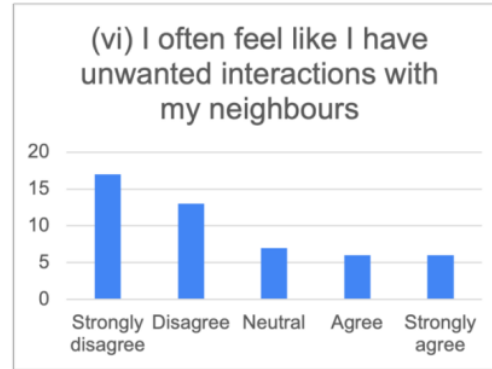
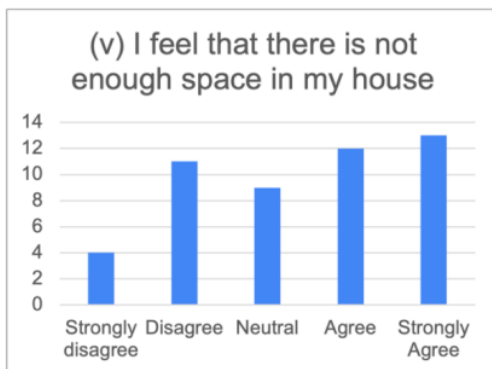
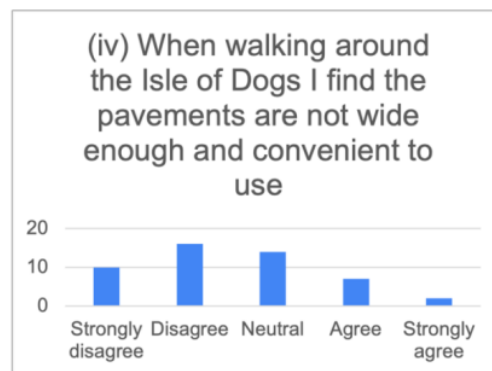
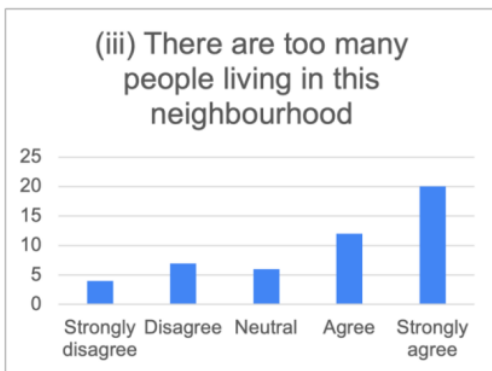
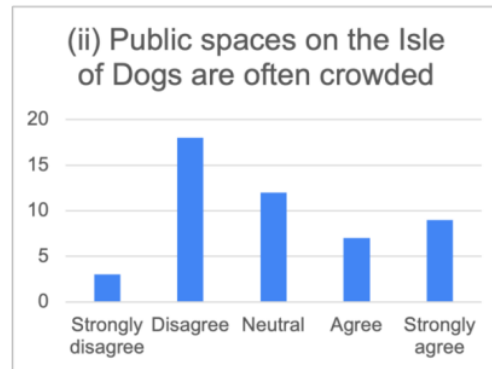
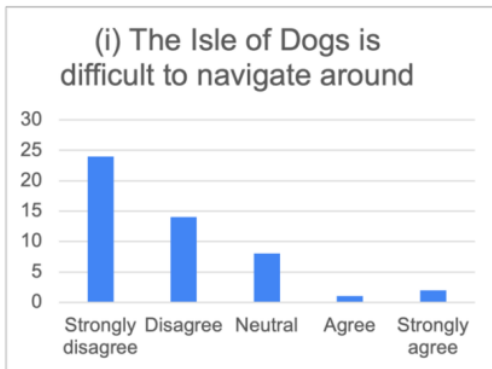
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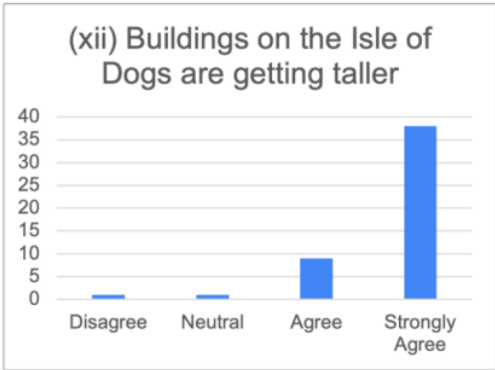
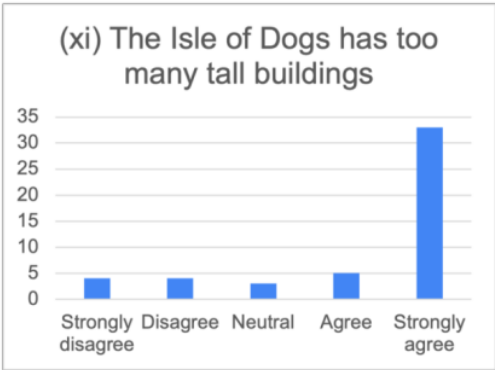
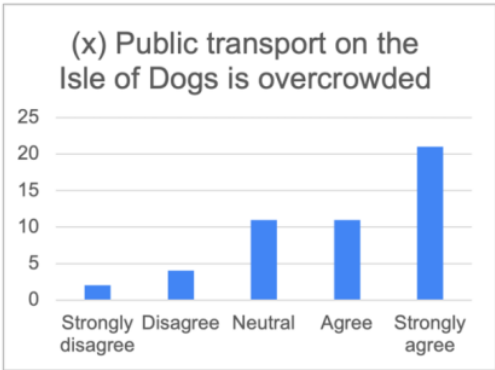
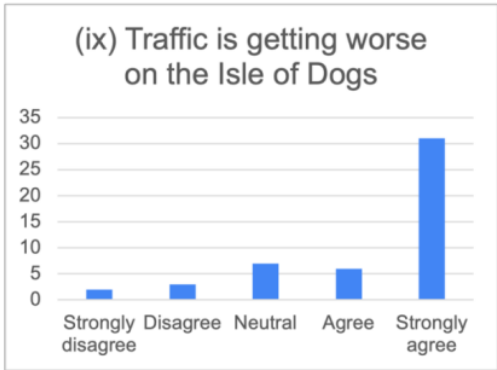
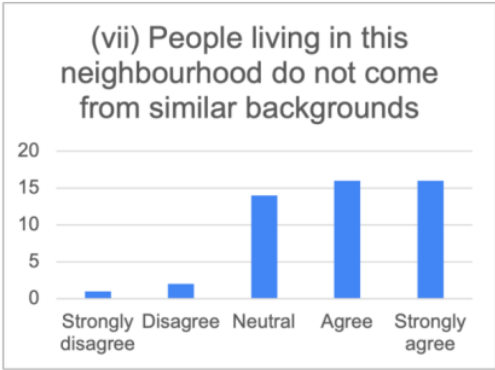


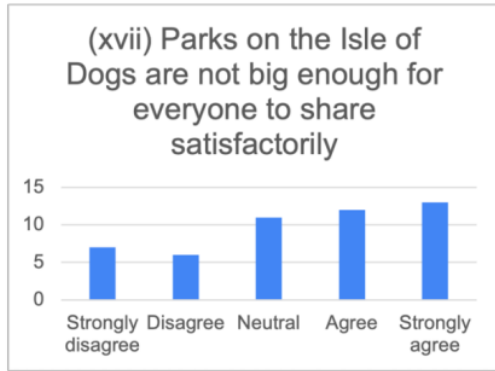
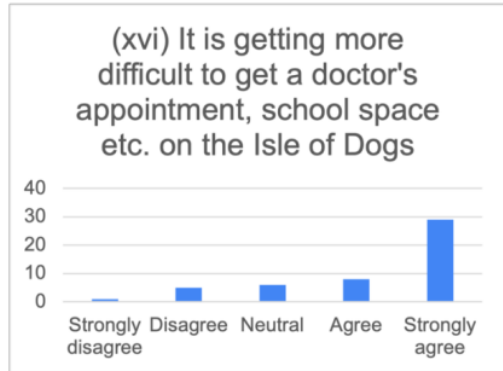
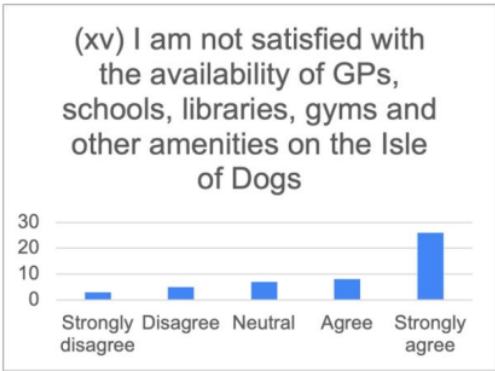
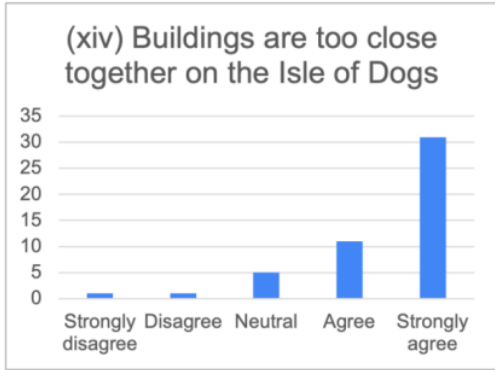
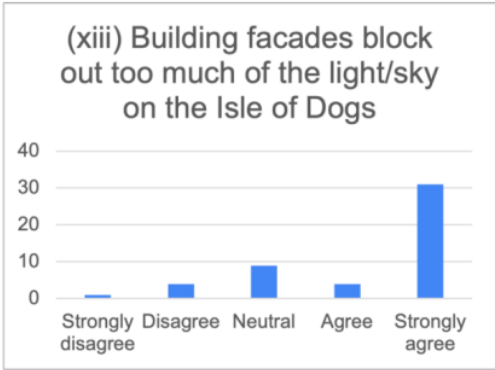
Appendix 3



Appendix 4







RISK ASSESSMENT FORM FIELD / LOCATION WORK



The Approved Code of Practice - Management of Fieldwork should be referred to when completing this form

<http://www.ucl.ac.uk/estates/safetynet/guidance/fieldwork/acop.pdf>

DEPARTMENT/SECTION BARTLETT SCHOOL OF PLANNING

LOCATION(S) UNIVERSITY COLLEGE LONDON & VARIOUS LOCATIONS IN THE ISLE OF DOGS, LONDON

PERSONS COVERED BY THE RISK ASSESSMENT

Gianluca Cavallaro-Ng

Research participants

BRIEF DESCRIPTION OF FIELDWORK

Walking interviews of about an hour in length in the Isle of Dogs

Consider, in turn, each hazard (white on black). If **NO** hazard exists select **NO** and move to next hazard section.

If a hazard does exist select **YES** and assess the risks that could arise from that hazard in the risk assessment box.

Where risks are identified that are not adequately controlled they must be brought to the attention of your Departmental Management who should put temporary control measures in place or stop the work. Detail such risks in the final section.

ENVIRONMENT

e.g. location, climate, terrain, neighbourhood, in outside organizations, pollution, animals.

The environment always represents a safety hazard. Use space below to identify and assess any risks associated with this hazard

Examples of risk: adverse weather, illness, hypothermia, assault, getting lost.
Is the risk high / medium / low ?

Walked interviews can face issues such as adverse weather, risk of getting lost, risk of assault. Furthermore, as the Isle of Dogs is near water, there is also the potential for falling into the Thames.

For risks such as weather this can be avoided by using weather forecasts to schedule the interviews, aiming to avoid adverse weather. In the event that weather such as rain, snow or high temperatures occur, I will ensure that both myself and the participant are dressed appropriately.

To avoid getting lost I will ensure that my phone (with GPS) is fully charged before beginning interviews, and will bring a portable charging pack to ensure that I will not run out of battery.

For issues such as safety I will attempt where possible to conduct interviews during the day. As the Isle of Dogs is quite built up I do not think we will have issues of entering secluded areas.

Routes will be planned beforehand, and this will also give both myself and the participant opportunities to safety check the route before going on the walked interview.

CONTROL MEASURES

Indicate which procedures are in place to control the identified risk

| | |
|-----|---|
| no | work abroad incorporates Foreign Office advice |
| yes | participants have been trained and given all necessary information |
| no | only accredited centres are used for rural field work |
| yes | participants will wear appropriate clothing and footwear for the specified environment |
| no | trained leaders accompany the trip |
| yes | refuge is available |
| n/a | work in outside organisations is subject to their having satisfactory H&S procedures in place |
| | OTHER CONTROL MEASURES: please specify any other control measures you have implemented: |

EMERGENCIES

Where emergencies may arise use space below to identify and assess any risks

e.g. fire, accidents

Examples of risk: loss of property, loss of life

In the event of a serious emergency both myself and the participant will have a phone with which emergency services can be contacted.

CONTROL MEASURES

Indicate which procedures are in place to control the identified risk

| | |
|-----|---|
| no | participants have registered with LOCATE at http://www.fco.gov.uk/en/travel-and-living-abroad/ |
| no | fire fighting equipment is carried on the trip and participants know how to use it |
| yes | contact numbers for emergency services are known to all participants |
| yes | participants have means of contacting emergency services |
| yes | participants have been trained and given all necessary information |
| yes | a plan for rescue has been formulated, all parties understand the procedure |
| yes | the plan for rescue /emergency has a reciprocal element |
| | OTHER CONTROL MEASURES: please specify any other control measures you have implemented: |

Appendix 6 Ethical clearance form

Ethical Clearance Pro Forma

It is important for you to include all relevant information about your research in this form, so that your supervisor can give you the best advice on how to proceed with your research.

You are advised to read through the relevant sections of UCL's Research Integrity guidance to learn more about your ethical obligations.

Please ensure to save a copy of your completed questionnaire BEFORE hitting 'submit' (you will not be able to access it later).

Submission Details

1 * Please select your programme of study.

MPlan City Planning : MPlan City Planning

2 * Please indicate the type of research work you are doing.

- Dissertation in Planning (MSc)
 Dissertation in City Planning (MPlan)
 Major Research Project

3 * Please provide the current working title of your research.

How do high-rise development and densification impact residents at a neighbourhood scale?

4 * Please select your supervisor from the drop-down list.

Short, Michael : Short, Michael

Research Details

5 * Please indicate here which data collection methods you expect to use. Tick all that apply.

- Interviews
 Focus Groups
 Questionnaires (including oral questions)
 Action research
 Observation / participant observation
 Documentary analysis (including use of personal records)
 Audio-visual recordings (including photographs)
 Collection/use of sensor or locational data
 Controlled trial
 Intervention study (including changing environments)
 Systematic review
 Secondary data analysis
 Advisory/consultation groups

6 * Please indicate where your research will take place.

UK only : UK only

7 * Does your project involve the recruitment of participants?

*Participants' means human participants and their data (including sensor/locational data and observational notes/images)

Yes No

Appropriate Safeguard, Data Storage and Security

8 * Will your research involve the collection and/or use of personal data?

Personal data is data which relates to a living individual who can be identified from that data or from the data and other information that is either currently held, or will be held by the data controller (you, as the researcher).

This includes:

- Any expression of opinion about the individual and any intentions of the data controller or any other person toward the individual.
- Sensor, location or visual data which may reveal information that enables the identification of a face, address etc. (some postcodes cover only one property).
- Combinations of data which may reveal identifiable data, such as names, email/postal addresses, date of birth, ethnicity, descriptions of health diagnosis or conditions, computer IP address (of relating to a device with a single user).

Yes No

Yes No

9 * Is your research using or collecting:

- special category data as defined by the General Data Protection Regulation*, and/or
- data which might be considered sensitive in some countries, cultures or contexts?

*Examples of special category data are data:

- which reveals racial or ethnic origin, political opinions, religious or philosophical beliefs, trade union membership;
- concerning health (the physical or mental health of a person, including the provision of health care services);
- concerning sex life or sexual orientation;
- genetic or biometric data processed to uniquely identify a natural person.

Yes No

10 * Do you confirm that all personal data will be stored and processed in compliance with the General Data Protection Regulation (GDPR 2018)?

- Yes
 No
 I will not be working with any personal data

11 * I confirm that:

- The information in this form is accurate to the best of my knowledge.
 I will continue to reflect on, and update these ethical considerations in consultation with my supervisor.

You **MUST** download a copy of your responses to submit with your proposal, and for your own reference.

To do this, use the print screen function of your web browser, and print to PDF in order to save.

How do residents experience high-rise development and densification at a neighbourhood level

GRADEMARK REPORT

FINAL GRADE

/100

GENERAL COMMENTS

Instructor

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