

**Demystifying the database: The state's crafting of Cape
Town's housing allocation tool and its technologies**

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Abstract

The City of Cape Town's integrated housing database is used to manage the allocation of state housing across the city. It is a technical intervention in a contested and politicised context. On the surface, it appears to be an effective state tool that determines eligibility for housing assistance, and subsequently, the implementation of fair housing allocation practices. This veneer of technicality, however, conceals the complex state work involved in the production, maintenance, and use of the database. In the context of South Africa's transition from apartheid to democratic modes of governance, this research examines the database to engage with the state's work in producing tools for legitimate decision-making.

As a state tool, the database and its functioning has been largely rendered invisible, either dismissed because of the opacity of its functioning, or positioned as a political myth, a smokescreen that conceals the state's inability to deliver on its housing promises. However, a technopolitical lens challenges researchers to pay attention to the form, function and development of state tools; nuances that are too often overlooked. In this research I therefore examine the housing database as a legitimate state tool for fair housing allocations. Using archival material, I explore the making of the database. Based predominantly on interview material with key informants, I investigate the production of the data held within the database. I consider, through policy and document analysis, the use of the database and its data in the actual practice of housing allocation decision-making. In sum, the research tracks the ideological, political, bureaucratic, and technological shifts that have shaped the database over three decades of housing allocation reform. Through this analysis of the development, form, and function of the database, I substantiate the ways in which the database works as a mode of governance, crafted by the state, that builds and sustains housing allocation decision-making.

Demystifying the database as a state tool highlights its gradations, textures and contradictions. Its analysis makes visible the state craft that is key to its development, form, and function – what shapes the state’s housing allocation decision-making. This analysis opens up the South African housing crisis beyond the impasse where citizen need exceeds the state’s capacity to supply houses, and shifts the narrative away from an ambivalent, unwilling or uncaring state, to one that makes visible and describes the state’s craft on housing allocation decision-making.

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Chapter 1: Introduction

The housing database is a typically uncontested state tool in the broader, often politicised, realm of housing delivery in South Africa. Entrenched as a constitutional right, the democratic South African state has a responsibility to progressively realise its citizens right to 'adequate housing', and therefore is required to provide housing to those who qualify for assistance. This massive state project is characterised by extensive periods of waiting by housing applicants, contested decision-making regarding the allocation of these houses, and the politicised nature of where, when and how housing developments are rolled out across cities.

In South African discussions on housing delivery, this debate tends to focus on the citizen-state encounter. Less apparent is an examination of the tools that facilitate the implementation of policy in practice, particularly in relation to housing allocation. In a context where citizens' need for assistance far exceeds the state's capacity to address housing shortfall, the state has introduced particular tools that ensure compliance with the nationally-stipulated eligibility criteria, which assist in allocating housing opportunities to those most in need of assistance. In Cape Town, the integrated housing database is the tool through which housing allocation decisions are made. It is considered to be a transparent and fair technological intervention in a historically politicised, contested, and corrupted system of allocation. The City of Cape Town's integrated housing database makes sense of housing need across the city, collating and aggregating housing demand data from the apartheid era to present. It is a logical and effective tool used to determine applicant eligibility for housing assistance. Yet the workings of the database are opaque, its history and its contemporary form blurred by its technical rendering as a tool used by the state. Here, I shift from the citizen-state encounter to examine the practice of housing delivery through an instrument that is critical in the process of fair housing allocation,

adding a different perspective to debates on the contestations in housing delivery in South Africa.

Cape Town's housing database is purportedly the first of its kind in South Africa, and thus is an interesting case study to examine as an example of a state tool developed from existing material that has been reimagined to implement priorities of fairness in the democratic process. The bureaucratic and political arrangements that facilitate the functioning of the database are also noteworthy: the information held within this database is imported into the provincial housing database, as well as the national housing need register, rendering the database an important tool of governance in the state's approach to fair housing allocation practices. The functionality of this state tool, however, conceals the complex state work involved in the production, maintenance, and deployment of the database.

This integrated housing database is central in the process of housing allocation, yet it is typically framed as being invisible, its workings opaque to all but the few officials who understand its role and work hard to ensure its seamless functioning. A key instrument in housing allocation, the database has required considerable state investment to develop, manage, and maintain. The database is crucial for addressing historical injustices and political redress. Yet the database seems on the surface to be a banal state tool that is not usually examined in debates on housing governance. This banality of the database is intertwined with the invisibility of its workings, a framing that conceals the ways in which the database works as a mode of governance. Despite its central role and its powerful implications for the implementation of fair principles of decision-making in housing governance, how the database functions is something of a mystery, rarely questioned. More than simply a neutral, apolitical tool used by the state, I examine how political, administrative, historical and technical histories, rationales and imperatives, shape the database as a mode of governance that underpins housing allocation decision-making.

Here, I position the database, rather than the outcomes of its decisions and the complexities of the broader housing delivery project, as the object of study. It is ironic that the database is rarely used for the allocation of new housing developments, despite being invoked as a demonstration of the state's commitment to redress through fair allocation procedures, an indicator to the public of state procedure, particularly for those who are waiting for state assistance. Yet considerable state work is invested in the development and maintenance of the database. To consider its ambiguities as a key state tool, the "gradations, texture, and contradictions" (Charlton 2018b: 102) of the database need to be examined in order to make visible its work in housing allocation, as well as the state's work that produces and sustains its technical functioning. My first research question is thus centred around what the database is, how it has been developed, and its use in policy and in practice.

This research makes visible three aspects of the database that are critical to better understand its role as a mode of housing governance. First, the database appears to be a technical solution to a housing allocation administrative problem; a political response to a historical challenge of unfair and unequal distribution of state resources; and the state's tool to address the imperative for equity and redress in housing allocation. The database's public-facing positioning is essential. It brings into view the database as a tool of calculability and in so doing, the state's commitment to change through data-driven decision-making. Yet this public version of the database is just one layer of what is an ambiguous tool.

To dig into the database's inherent dramas (Star 1999: 377), I examine, second, what is typically concealed from public view, the database's form, its internal composition and logics that ensure its functioning. This research question focusses on understanding the data that comprise the database to explore their making, the unexamined and unacknowledged state work to produce and maintain functional application information that can be used to make a fair decision.

The third research question scales out to consider the database's resonance and referencing in the housing polycscape, showing the ways in which it embodies the state's aspirations for procedural, and fair, allocation practices, the state's commitment to bureaucratic procedure, as well as its work to produce a database that is capable of working in these aspirational and bureaucratically procedural ways.

Politicised and contested experiences of housing delivery in South Africa have shaped the academic debate in this field, which largely focuses on the citizen-state encounter around housing governance and delivery, and the lack thereof. Largely missing from this debate is an examination of the role of state tools, including those used for allocating housing. As a central state project of redress, the practice of housing allocation needs to be better understood.

As an entry point into theorising the database, I draw on literature that calls for a disaggregation of the state. Attending to the materiality and the dissonances of the database complicates traditional characterisations of a singular, monolithic and homogenous 'state', rendering it instead multiple and contested. Yet the notion of 'the state' continues to be invoked in policy and in officials' language, in contestations against its discourse and practices, a language that seeps through this thesis. A disaggregated understanding of the state produces, later in this dissertation, a generative vocabulary for 'seeing' the state's work, a practice that sits in tension with a continued invocation to 'the state'. This tension lies beyond the scope of this thesis. Rather, a disaggregation of 'the state', here, I propose, refers to considering the various governance actors that comprise housing allocation policy in South Africa, as well as the states tools, which tend to be overlooked when framed as technical instruments of state work that are seemingly devoid of politics. A disaggregation of the state in this way pays attention to the ways in which tools come to be modes of governance that shape the state's response to administrative, political, historical and technical challenges.

The database as a state tool looks technical, and therefore is overlooked, despite its critical role for fair allocation decisions. I argue that the database should not be dismissed for its seeming invisibility. It is not sufficient to assume the state's tools are simply technical, and therefore apolitical. Nor is it reasonable to infer that these tools act as a smokescreen for the state's incapacity to solve the challenges of redress. Rather, the tools used by the state need to be examined for their complexity – in this case, the database needs to be demystified, explored as an expression of state aspirations and commitments, for the internal dynamics that comprise it, and its functionality for making housing allocation decisions and the state's work to facilitate this functionality.

Through an examination of the development of the database, its form and its function, I establish that the database occupies a range of visibilities, from invisible at times to a tool invoked performatively at others, and variously in and out of view in between this spectrum. The range of visibilities of the database offers the state possibilities in the realm of housing allocation. These possibilities are technical, political, social and calculative, among others. They are not obvious without examination, and so require closer attention paid to them in order to be surfaced. To unpack the possibilities of state tools, we need to centre them as the focal point of research, even if the work they do appears to be technical or mundane.

A technopolitical lens pays attention to the politics inherent within technologies and makes visible the power that is displaced onto technologies. Drawing on Hecht's (2011; Hecht and Allen 2001) body of work on techno-politics, I show that the database is not merely "a tool of politics, but rather a mode of politics" (Hecht 2011: 2), and building on her framing, argue that the database is a democratic mode of governance that plays a critical, if often disregarded, role in the state's pursuit of fair allocation of resources. To articulate its materialities (in Hecht's language) – the database's development, form, and function in housing allocation – I employ a literature that debates the production of data and the processes of datafication, which shows

that data are not self-evident (Gitelman 2013) or objective, but is socially constructed, shaped by particular contexts that require situating (Dourish and Gómez Cruz 2018; Kitchin 2014; Jasanoff 2017). Bringing together these debates allows for a more nuanced description of this particular state tool.

I begin my examination of the materiality of the database by examining the state's work of navigating paradigm shifts, institutional and bureaucratic changes, and technological advances over 30 years of housing allocation. These shifts are examined through the development of housing policy, where I trace the state's work of integrating fairness into its allocation practice. There are multiple layers of fairness in relation to the database. In the case of housing allocation fairness is defined by the eligibility criteria established by and implemented at the national level of government. Here, fairness is equated with a standardised level of access to state assistance to housing. However, there are also aspects of procedural fairness and transparency, even-handedness, and dispassionate decision-making that surface in the state's broader understanding of fairness that arise in later chapters in considerations of housing allocation policy and practice shifts over the three decades examined here. First, I examine how housing allocation dictates the existence of the database as a way of making sense of housing applicants' data, through which the state makes fair decisions.

I then turn my attention to the form of the database, the data that comprises it, how this is collected and collated, cleaned and maintained in order to tell particular stories about housing demand in the city. Typically invisible in examinations of the database, data are central and pervasive, shaping how the state 'sees' housing demand and in turn allocates housing opportunities according to criteria it deems to be fair. As the confluence between applicants, allocation, and the state's intent of fair practice, the oft-invisible data held within the database determine much of the state's craft on seemingly apolitical state tools.

Finally, I examine the function of the database and the data within it. Operating within a contested polycscape, the database is framed by the state unequivocally as a tool for fair allocation decisions. Yet the functioning of the database is less determinate than this, invoked publicly as a demonstration of a state commitment to redress and legitimation of a coherent, functional and technical system deployed for fair decision-making, while in practice, is used infrequently to make allocation decisions. Instead, the housing database is superseded by claims to houses by existing tenants and informal allocations across generations of families, through the allocation of houses through court cases and emergency allocation procedures, and because there are few housing developments. Nonetheless, the state's investment in the production and maintenance of the database warrants an exploration of the fabric of the database; the state's production and maintenance of the data to ensure the database's functionality; and the use of the database in practice. In undertaking this research, I make visible the ways in which the database operates as a mode of governance, and the complexity of the state's crafting of the tools that make housing allocation decisions.

Using archival material, I explore the making of housing policy and the database as its tool for implementation, tracing the technology's development from race-based waiting lists of the apartheid regime, to desegregated place-based lists of the immediate post-apartheid period, to the implementation of a single integrated database as it exists presently. Based predominantly on interview material with key informants, I investigate the production of the data held within the database, to unpack the processes that shape the housing demand data so that it is functional in the database and applicable for allocation decision-making. I examine, through policy and document analysis, the use of the database and its data in the actual practice of housing allocation decision-making. In sum, the research tracks the ideological, political, bureaucratic, and technological shifts that have shaped the database over three decades of housing allocation reform.

Through this research I demystify the database and make visible the state's work to produce it and its workings across the scales and spheres of the state. I surface the aspects of the database that are not usually in public view, delving beyond the seemingly seamless technology to show the form of the database, the data that comprises it and that requires considerable state work to produce, maintain and support the seamless appearance of the database; as well as the functioning of the database in the broader context of housing delivery in the city and beyond.

This research shows that state tools may be technologies, but they are created by people operating within specific contexts, with accompanying logics, assumptions, rationales, priorities, and constraints. The state's work in crafting these tools tends to remain invisible, hidden behind the technical veneer of procedural efficiency. However, a closer examination of tools demystifies their workings. Paying attention to the development, the form, and the function of the database highlights the state work that sustains its technical rendering, and in so doing, the politics inherent within the database's role become more apparent. Surfacing the state's work in the creation of database, I offer a vocabulary for the state's crafting of its tools – the doing work that describes the processes of (re-)formulating, (re-)making, and (re-)rendering the housing allocation tool. In the case of Cape Town's integrated housing database, this demystification reveals the database as more than merely a tool of politics, but rather a mode of housing governance.

An overview of the chapters

This first chapter introduces the housing allocation tensions in the South African context and positions Cape Town's integrated housing database as the site of research as the local government's primary tool for formal housing allocation decisions.

The second chapter, the literature review, outlines the debates in which this research sits. It starts by echoing calls to disaggregate the state, and I suggest here that we extend this disaggregation of the state to its tools. This approach pays attention to the everyday practices of the state – its actors and the tools it uses to make decisions. In the politicised context of housing delivery in South Africa, the database is an essential tool for calculative governance and for implementing the state’s eligibility criteria. State tools like the database require a knowledge of citizens in order to function efficiently. I turn to literatures that debate how the state comes to know its citizens, and what this legibility requires and necessitates, and how this knowledge facilitates calculative decision-making. A techno-political lens argues for examining state tools for the politics by which they are shaped. This debate shows how the tools used by the state are not objective and apolitical and demands consideration of the displacement of state power onto seemingly technical tools. A techno-political framing calls for examining the materiality of technologies and suggests that the constitution of the tool is as important as the decision it makes. In order to describe the housing database tool, additional literature on the politics of data production is required. Here, I engage with debates that show that data cannot be assumed to be neutral or raw, but rather is shaped, produced and constructed with particular logics and rationales underpinning this shaping. I then open up the debate to show how I use this existing literature terrain to shape my research.

In chapter three, the methodology, I draw on the arguments from the literature outlined in the previous chapter to shape my analytical design. I start with the provocation that the database is both invisible and a boring thing in the greater context of housing delivery and argue that there is a need to delve into state tools like the database to make visible the work that they do, as well as the development and production of these tools. I make a case for why South Africa is a relevant site for this research. I then turn to the logistics of the research, and outline how I undertook this research, using archival research to understand the development of the database and its place in the broader housing allocation context; media analysis of newspaper articles

and reports, in order to grasp how housing allocation debates have shifted over time and with changes in allocation technologies; and qualitative interviews with key informants to understand the practices of using and making the database. I then outline my analysis of these empirical pieces of the database.

The fourth chapter begins the empirical component of the thesis by unpacking the development of housing allocation policy from the apartheid period to the present. It documents the vast array of housing allocation policies and practices that existed across Cape Town's 61 local authority bodies and demonstrates how the logics of fairness and transparency entered into housing policy debate for the re-configuration of ideologies, institutions and policies in the democratic period. This chapter considers this process at the microscale through an examination of housing policy review in a municipal entity. This illustration of the complexities of policy development in the immediate post-apartheid period shows how municipalities grappled with the merits of waiting lists, points systems, and need registers for making sense of housing need in the city. Finally, this chapter outlines the development of the existing, integrated housing allocation policy that is implemented across the city for fair housing allocation decision-making and positions the housing database as the tool through which fair allocation decisions are made.

The fifth chapter documents the development of the housing database from the housing allocation technologies that preceded it. It traces the process in moving from paper-based waiting lists, racially compiled, to the computerised lists denoting neighbourhood-level housing demand. The chapter documents the state's first attempts at computerising housing demand information, as well as the challenges and opportunities that accompanied this project. The chapter traces the processes of 'splitting the lists' at different points of institutional reform in the post-apartheid period and shows how the city orchestrated desegregation through waiting

list reform, and later, integrated the waiting lists across the city, thereby creating the integrated housing database as it is now known.

Chapter six turns to the constitution of the database and examines the data that comprise it. Here, I examine the making of data from the point of application to the point at which it enters the housing database. This requires following the data, first from the applicant's role, where the application form is completed and supporting documents are furnished to the state, and then to the state's role in capturing this information and entering it into the database. I then examine how this data becomes part of a relational database. The state's work on this data is the following subject, where the work of standardising the data, maintaining it, and ensuring that it is secured, is considered. Finally, I examine how the state processes the data for use in allocation decision-making by unpacking how the database is used in practice to fulfil the state's commitment to bureaucratic procedure.

In chapter seven, I unpack the visibilities of the database, showing that it is publicly invoked as a prized tool for fair allocation, a demonstration of the state's commitment to procedural fairness. Its actual form, the data that comprises it and the state work that produces and maintains its internal dynamics, is largely invisible. And its functioning in the broader policyscape is barely visible. Yet the database is an essential state tool for housing decision making, and in this chapter, I make visible the shifting regimes, institutions and technologies of governance that shape it. In doing so, I substantiate the ways in which the database is essential for enacting the state's housing policies.

In chapter eight, I argue that a new vocabulary is needed to make visible and substantiate the state's work in crafting its tools. This vocabulary draws on an analogy of crafting to articulate the work of the state in crafting its tools. I propose that this crafting involves careful processes of unpicking, stitching together and finishing off in order to construct a database that operates

seamlessly, efficiently, and therefore invisibly. This vocabulary makes visible the database and its various aspects; its public-facing position, its internal dynamics and the policyscape in which it sits. It also makes visible the state's work in shaping its tools. The vocabulary of crafting contributes to debates that call for understanding the state for its complexity, thereby disaggregating its practices. And, it offers a new entry point into South African housing debate, focussing not on the citizen-state encounter, but on the tools that facilitate these engagements.

Chapter 2: Inside out: From housing allocation to the politics of data

Introduction

The state's role in housing delivery in South Africa is deeply symbolic. As a visual indication of the democratic project, the state's provision of housing to those disadvantaged under the apartheid regime has been central to measuring the state's success in addressing the inequalities of the past. As a reflection of the state's commitment to redress and to the realisation of social justice imperatives, the rollout of housing projects has proliferated since the end of the apartheid regime, processes documented in a rich body of literature on South African housing delivery. In this body of work, the state's practice of housing allocation in South Africa is preoccupied with examinations framed through a state-citizen lens. In a broader housing delivery context where citizen housing demand far exceeds the state's capacity to assist all who need help, housing allocation decisions are often contested and politicised. Moreover, Cape Town's history as a segregated city complicates questions of fair delivery of houses across a landscape only recently integrated, if primarily in theory rather than in practice.

The South African housing debate is rigorous in its tracing of housing policy development. The literature demonstrates these interrelated topics, including the role of social and political movements as a means to effect change through shifting housing policies and practices (Mackay 1999; Parnell and Mabin 1995; Mabin 2020); the capacity of the state to implement housing policy in the democratic period (Tomlinson 1998, 1999a, 1999b); accounting for the design and function of the capital subsidy mechanism (Gilbert 2002); and critiques of the housing policy and its role in the transformation of the spatial and economic legacies of cities (Huchzermeyer 2001; Tomlinson 1999b). These debates shifted with the implementation of the revised housing

policy, 'Breaking New Ground', which changed the focus and discourse away from housing to human settlements to create neighbourhoods and communities, rather than simply housing development projects located in peripheral, often remote, locations (Charlton and Kihato 2006; Harrison, Huchzermeyer, and Mayekiso 2003; South African Cities Network 2014; Goebel 2007). More recently, policy-focussed debates have concentrated on the state's drive towards mega-projects (Ballard and Rubin 2017), reflecting concerns regarding the state's commitment to the integration of cities, with housing delivery once again shifting towards large-scale projects located far from economic opportunities and other social needs. From an overview of this literature, the state's commitment to changing the urban landscape is clear – millions of houses have been delivered by the state. Yet academic consideration of housing policy trajectories lays bare the challenges faced by the state in terms of the implementation of policy in practice.

There is an equally rich literature that documents the lived experiences of housing applicants while waiting for state assistance (Oldfield and Greyling 2015). This research details the realities of living informally (Lemanski 2009; Ross 2010; Cirolia and Scheba 2019) while ostensibly waiting for assistance which presents a challenge to formal state policy processes (Huchzermeyer 2003; Huchzermeyer and Karam 2006; Pithouse 2009). In addition, resistance from and activism in protest of the state's practices is also documented, demonstrating how people reject the state's requirement for waiting, and instead live in 'grey spaces' (Yiftachel 2009), in informal settlements, occupied spaces, and thus beyond the boundaries of binaries of the in/formality, il/legality, black/white, right/wrong, patient/greedy (Lemanski and Oldfield 2009; Oldfield 2000, 2002; Rubin 2018; Ngwenya and Cirolia 2020; Levenson 2017, 2018). These rich accounts of lives lived in conflict with the state offer an important grounding to debates on policy, which tend to be removed from the quotidian experiences of those in wait of the state's assistance.

Shifting from those who are in wait of the state's assistance, to those who have benefitted from it, a growing literature examines the lives of those who live in state-provided housing. This literature demonstrates the effects of state assistance in the form of a housing asset (Charlton and Meth 2017; Lemanski, Charlton, and Meth 2017), from the benefits of improved quality of life, safety, and identity, to the challenges that homeownership brings. These rich debates on the work of the state on housing policy and the lived experience of waiting for state assistance demonstrate the central role of the state in the lives of citizens and speaks to the ways the citizen-state relationship is enacted. These debates, however, rarely align with calls to disaggregate the state, a body of work central to this research (and discussed below), which calls on researchers to shift away from theorisations of the state as a monolithic entity, to one that recognises its composition as plural in terms of actors, practices, fields of influence, and critically, tools. Examinations around housing delivery are less documented in the South African case, limited to Tissington et al. (2013) in relation to the housing database, Huchzermeyer (2003) on the capital subsidy, and Charlton (2018a)'s insights into state officials' understandings of the RDP housing programme. The specific roles of state tools in the implementation of housing policy, and particularly the instruments that the state uses to make decisions that comply with its definition of fairness in the context of severe housing need, are neglected in the South Africa case.

An examination of state tools, focused on the housing database, Cape Town's tool for determining fair allocation decisions, is the gap that this research addresses.¹ To make the database visible, I turn to literature on techno-politics and data to show the state's work of producing its tools, and thus the decisions that they facilitate.

¹ There is a growing body of scholarship on infrastructure and ways in which the state shapes its commitment to citizens through infrastructural provision (Lemanski 2020; Anand, Gupta, and Appel 2018; Millington and Scheba 2021). While the database could be framed as a tool related to the delivery of infrastructure – housing and its associated elements – it is not an infrastructure itself. It is instead a tool which sits within housing allocation processes, enabling decision-making related to infrastructures of housing.

The City of Cape Town's housing database is an example of an under-examined state tool in the realm of housing allocation. The database tries to make sense of the housing demand across the city, considering the injustices of allocation practices of the past, in order to produce potential housing beneficiary shortlists that are fair. The database offers the state a way of making decisions in a technical, and seemingly apolitical, fashion – it is a technical solution to an administrative and political challenge, and it offers a way of ensuring that decisions are made according to the state's commitment to redress. Yet the housing database rarely features in discussions on housing delivery and allocation. It is a supplementary component of decision-making in a politicised environment of housing delivery contestations.

Typically, the database is positioned as merely a tool used by the state and therefore unremarkable. In the first section of this chapter, I draw on debates that call for the disaggregation of the state to propose that we pay attention to state tools – those unremarkable, under the radar, 'black boxed', 'boring', technologies and infrastructures that facilitate critical state decision-making in circumstances of political, social, and economic redress.

In the second section of the literature review I consider the use of state tools for legibility and calculability. Here, the focus on governance through numbers becomes apparent in order for the state to 'see' its citizens, and likewise for citizens to be able to make claims from the state as part of the reciprocal citizen-state relationship. Read specifically in the South African context, which has a complicated history of enumeration for apartheid's segregationist practices, this literature is critical for understanding how states plan and govern through data and their representations of citizen need. I use this literature to show how the state uses calculative practices within seemingly neutral and objective tools for its decision-making.

I then turn, in the third section, to debates that recognise the politics within technologies and infrastructures, which are often overlooked as neutral, apolitical devices, rather than politically

inscribed instruments. Drawing on a literature on techno-politics, which recognises the co-constitution of technology and political rationales, I highlight this literature's assertion that technologies and tools are as important as their politics, and thus emphasise the need first for examining technological tools used by the state, and second, for describing the materiality, or the composition, of said tools. In relation to the housing database specifically, an examination of its materiality requires a new vocabulary of data and data politics.

The politics of data production and its use is the focus of the fourth section. Here, I draw on debates on the proliferation of data to show how data as a tool of governance cannot be assumed to be self-evident and neutral, and instead show how data are produced through processes of imagination, social construction, and maintenance. Here again, my focus is on making visible the state's work in the production of data, and the processes by which data in the database are imagined, shaped and produced based on historical and new housing demand data.

In the final section, I show how this approach offers a novel entry into the South African housing debate and shapes the analytical design for this research on the housing database, as a key but overlooked tool for fair housing allocation decision-making, which functions as a socially constructed and negotiated tool of decision-making, a key element of housing governance.

Disaggregating 'the state': From a focus on actors to its tools

The state is a significant actor in service delivery in South Africa. For those who require state assistance, the state's role is central and critical to everyday life, framing citizens' aspirations for better living conditions through its housing assistance programme. Yet despite its significant role in the day-to-day interactions of many actors, the state is not a monolithic, fixed, distinct, entity, and so cannot simply be theorised as 'the state'.

Gupta (2012: 45-46) maintains that the “materiality and solidity of the state dissolve under scrutiny”, and Mountz argues that the

‘state’ may not be knowable as a coherent whole because it does not exist as such. Like other institutions, the state is highly variegated, complex, and entwined in many relationships that are difficult to pry apart.

Mountz (2003: 637)

Instead, she contends that the state is an “everyday social construction” (Mountz 2003: 624). Similarly, Ferguson and Gupta (2002: 981) view the state as an imagined, constructed concept. Read through these lenses, ‘the state’ is ever shifting. In reconceptualising ‘the state’ as a social construct, the multiplicity of actors that comprise it become more apparent, as do the actors’ different, sometimes competing, rationalities and agendas (Corbridge et al. 2005). In order to reveal these different actors and their agendas, rationalities, assumptions, and logics that underpin what we conceive as ‘the state’, there are increasingly calls to pay attention to everyday state practices (Sharma and Gupta 2009; Painter 2006; Bénit-Gbaffou and Oldfield 2011; Bénit-Gbaffou 2018b), turning the assumption of ‘the state’ into a problem space that is ripe for examination and for a project of disaggregation.

These calls to disaggregate the state focus on examining not just the disciplinary power of the state, but also the practices of the state – “administration, regulation and delegation” (Bernstein and Mertz 2011: 7). Moreover, disaggregation of the state requires paying attention not only to the performative moments when states invoke their power, but also to their everyday routines. Everyday processes are a key site of micropolitics, which can be concealed within “mundane bureaucratic procedures” (Sharma and Gupta 2009: 11) that comprise everyday state practice. Painter notes that unpacking states according to their “prosaic practices reveals their heterogeneous, constructed, porous, uneven, processual and relational character” (Painter 2006: 754), and in so doing, we can start to see “the importance of the affective, the non-

rational, the non-cognitive and the practical” (Painter 2006: 763). Observing the everyday practices of state actors brings to the fore the different underlying assumptions, logics, rationales and ultimately politics that drive everyday decisions, but which typically escape attention.

Examining the everyday practices of states reveals some of the contestations between different state actors, demonstrating that ‘the state’, as we are often inclined to denote it, is in fact a misnomer. Yet despite the heterogeneity of state actors that exist under the ‘state’ umbrella, and the uneven ways in which ‘the state’ operates across time and place, the ‘state’ is still a critical actor in the governance of space and people (Bénit-Gbaffou and Oldfield 2011: 446). While the centrality of the state’s role is a critical point in South Africa, any attempt to disaggregate the ‘state’ should take the significance of the South African state’s role into account. Equally important, though, is the role of bureaucracy in the everyday lives of citizens seeking assistance from the state.

Bureaucracy is a key site for examining the prosaics of the state. The term bureaucracy encompasses the routine, technical workings of the state (Sharma and Gupta 2009: 11). While ‘the state’ is recognised as a political entity that wields power (Heyman 2004), the technical nature of bureaucracy appears apolitical (Sharma and Gupta 2009: 11) and rational (Chipkin 2011). While large state processes are scrutinised, the day to day routines of bureaucrats typically go unexamined. Sharma and Gupta (2009: 11) propose that “[m]undane bureaucratic procedures thus provide important clues to understanding the micropolitics of state work, how state authority and government operate in people’s daily lives, and how the state comes to be imagined, encountered and reimagined”. The micropolitics that underly everyday state practice become clearer when the mundane technicalities of quotidian state practice are examined. What seems to be technical and rational, formulaic and processual, may be more political, disjointed, cobbled together, or even arbitrary (Gupta 2012: 6) than initially assumed.

There is a rich literature on policy, policy analysis and policy development that speaks to the examination of everyday practices of the state (Patel 2006, 2009; Davison, Patel, and Greyling 2015; Mackay 1996, 1999; Tissington 2010). In the South African case, these discussions offer interesting insights into the long-term shaping of policies through international best practice, local adaptations, and the continuities and changes that accompany institutions in transition. However, while literature on policy development and analysis offers crucial insights into types of knowledges brought to bear on significant challenges addressed by state problems, it rarely considers the tools used to realize these policies, or the bureaucrats who wield them.

States are animated by their bureaucrats, and so examining the prosaics of the state inevitably requires analysing the practice of state officials. As part of the project of disaggregating the state, examining the bureaucracy for its component parts requires understanding that bureaucrats are heterogenous in their rationales, motivations, and practice.

While bureaucrats are often painted as the villains in tales of poor service delivery, it is not fair to assume that all bureaucrats are the same. Edwards (1994: 205) notes that “[b]ureaucrats are represented as if they were a homogenous set of persons with a shared ‘background’, common values and a mutual understanding of the social world. Yet individual members of ‘bureaucratic’ organizations are known to be helpful, empathetic and are seen to be working... towards a more just and less discriminatory society” (Edwards, 1994: 205). Similarly, Mountz (2003) recognises that bureaucrats are situated within contexts and experiences, rationales, agendas and social relations, all of which affect how they undertake their role. And Gupta reminds us that:

many hardworking bureaucrats [are] often frustrated by their inability to work effectively to bring about real change in the lives of the poor... no matter how sincere... the overt goal of helping the poor is subverted by the very procedures of the bureaucracy.

While bureaucrats hold power as a result of their position within the state machine, they are not necessarily detached from the struggles of citizens, nor are they inherently slow to mediate state procedures. Paying attention to the different actors that comprise the state demonstrates its fluidity and its lack of boundedness. Examining the actors of the state shows that it is not merely imagined, nor is it simply a product of bureaucratic practice. Instead, the state's actors deploy particular rationalities through particular tools.

Examining the prosaics of the state recognises that bureaucracy is as much about the people that comprise it as the craft of the state itself. While calls for the disaggregation of the state recognise the heterogeneity of the actors within state processes, this body of literature has rarely extended to a disaggregation of state processes.

The tools through which 'the state' crafts its policies, and the implementation thereof, are critical features used everyday in state practice. Yet these tools are often overlooked in the disaggregation of the state literature, which has tended to focus on the materialities of bureaucracy in the form of paper (Hull 2012); bureaucratic red tape (Gupta 2012); the significance of documents in the quest for legitimacy as a foreign national (Hoag 2011, 2014, 2010); and the requirement for legibility to the state in order to access healthcare (Vale et al. 2017). All of these examples of citizen-state engagement demonstrate a commitment to thick description of the materialities of governance. Less documented are the *immaterialities* of governance, the intangible tools of decision-making that are harder to observe. I propose, in this research, that the disaggregation of the state ought to apply to the tools used by the state, some of which work so seamlessly as to appear invisible and neutral, and to erase the everyday work of officials. The housing database is one such tool.

In this section, I have echoed calls for the disaggregation of ‘the state’, to reconceptualise the notion of the state as a power-wielding entity, and instead frame it as a socially constructed, porous organisation comprised of a number of actors, all with different motivations, rationales, logics, and assumptions. In contending that the state requires disaggregation, I propose the need to consider the work of bureaucrats at the microscale to understand the state’s work through their practice. I also argue the need to extend the disaggregation of the state to its tools, to better understand how these work in the pursuit of social justice. In the following section, I turn to the South African state’s central role in low-cost housing delivery and demonstrate how housing allocation is a critical site for the disaggregation of the state’s tools of decision-making.

State tools and calculability: Legibility for governance

In order to govern, the state requires particular tools to ‘see’ its populace and to implement its projects. State tools require citizen legibility in order to govern responsively. In this section, I explore a well-developed debate in academic literature on the topic of the state’s work of making citizens legible. First, I explore how the state uses quantification for developmental purposes. I show how numbers and data are easily represented as reflections of society, rather than as abstractions, and in this process of representation, become seemingly objective. Second, I examine how numbers and other calculative practices are used in governance. Finally, I explore how these calculative practices are used by the state to ensure a fair resource allocation process, critical debates for understanding the implementation of various housing allocation tools, and the shifting of these practices, in a formerly segregated Cape Town context.

Quantification for legibility

James Scott proposed that for states to be able to plan, implement and manage projects, they need to be able to ‘see’ their citizens, what he describes as making them legible. Tracing early state efforts at making sense of their populations, he suggests that “large organisations see

through simplified approximations of documents and statistics” (Scott 1998: 76-77). Rose (1999) and Murdoch (2000) agree, and in the local context, Breckenridge (2014: 28) asserts that “[w]e live in a world governed by metrics of every sort”. Posel (2000) has argued that South Africa has had a “mania for measurement” (see also Seekings 2006). In South Africa, the apartheid state’s quest for enumeration was political, and while the state’s project for making its population legible was widespread, Breckenridge points out that the state’s “meticulous control” and oversight was not evenly spread – he notes, for example, a “comprehensive disregard for Africans in the countryside” (2014: 214), and Benit-Gbaffou (2018a, 2018b) demonstrates that the state’s will to not know has allowed for an ‘unmapping’ of certain groups – a “deliberate resistance to hearing, seeing, counting and recording certain facts, groups, or areas” (Bénit-Gbaffou 2018b: 4).

Understandably, citizens were (and continue to be) reluctant to be counted (Vale et al. 2017), particularly when, as von Schnitzler notes, “such passions of measurement targeted, and indeed constructed, the black population as an object of intervention to be classified, moved, and recorded by statecraft” (Von Schnitzler 2016: 137). And yet in order to be a beneficiary of a welfare programme, citizens have to be counted in order to be legible to the state. The requirement for legibility for state assistance represented a serious shift for citizens in the post-apartheid era – legibility to the state was a prerequisite to be eligible for state welfare assistance. This legibility, what Street (2012: 14) calls “social visibility”, is critical for the state to be able to govern and deliver. In the South African case, social visibility became increasingly important in order to be considered for eligibility for state welfare programmes. Given that the post-apartheid state had a mandate for fair and equitable resource allocation, the state had to develop tools that would ensure that those with the greatest need would be assisted first.

Internationally, the state has come to rely on numbers – statistics and other data – to govern in a way that is, on the surface at least, neutral and seemingly technical, making decisions in ways

that are ostensibly dispassionate and distanced from both citizen and official interference. Numbers and other data render the complex realities of everyday life abstract. This simplification of reality, what Scott (1998: 76) calls “typifications”, assists bureaucrats with decision-making.

While this rich literature on state practice notes that these abstractions of complexity are reductions of reality, these provisos are rarely seen in the public domain, which means that statistics and other numbers are presented as fact, rather than a representation of reality which is inherently more nuanced. This debate is critical for situating the state’s knowledge of housing need and how this knowledge changes in the post-apartheid period when criteria for what constitutes fair allocation becomes a key project of the democratic South African state. In the following section I turn to the state’s production of numbers and statistics for governance as a way of reflecting on the calculative practices of the state.

Numbers and governance

...numbers make modern modes of government both possible and judgeable. Possible, because they help make up the object domains upon which government is required to operate... Judgeable, because rates, tables, graphs, trends, numerical comparisons have become essential to the critical scrutiny of authority in contemporary society.

Rose (1999: 197-98)

Nikolas Rose argues that numbers are ubiquitous in modern governance practices. As the previous section has shown, the South African state has a long history of using numbers for governance purposes, although in the apartheid era, the purpose of these numbers was predominantly for social and spatial engineering means.

Murdoch reminds us that “The collection of statistics – with its technologies for classifying and enumerating – allows civil domains to be rendered visible, calculable and, therefore, governable... In other words, numbers are key resources for the effective ‘conduct of conduct’” (2000: 506). Although practices of calculation (Breckenridge 2014; Donovan 2015; Von Schnitzler 2016; Borges 2006) are an emerging topic of enquiry, numbers and statistics often escape scrutiny, particularly in public documentation discourse, and certainly in the field of housing delivery in South Africa. Rose draws attention to the contradictions that exist in the use and acceptance of numbers in policy-making. He argues that:

Numbers... constitute the domains they appear to represent; they render them representable in a docile form – a form amenable to the application of calculation and deliberation. ...whilst numbers seem indispensable to politics, they also appear to depoliticize whole areas of political judgement. They redraw the boundaries between politics and objectivity by purporting to act as automatic technical mechanisms for making judgements, prioritizing problems and allocating scarce resources... Numbers are part of the techniques of objectivity that establish what it is for a decision to be ‘disinterested’.

Rose (1999: 198-99)

The apparent objectivity to which Rose directs our attention is a critical point. The democratic South African state has embraced the use of calculative tools of governance in order to ensure the fair distribution of resources. Reflecting on the South Africa state’s biometric registration drive, Donovan (2015: 817) notes that “South Africa has endeavoured to create equality of citizenship through imposing uniformity” and further notes that this “egalitarian ethos has militated against subjectivity in favour of rule-bound practices”. Through the state’s use of tools like statistics and biometric data, among others, resource allocation decision-making is made in a seemingly objective way. Yet the tools that enable calculative practices of governance are neither objective, apolitical, neutral nor purely technical.

It should be noted that savvy citizens are aware that enumeration and legibility are practices of calculative governance that can be manipulated, and systems can be 'gamed' so that they are advantaged. Rose (1999) notes that:

we should not think of these practices that make individuals calculable purely as technologies of domination, for they can also be technologies of autonomization and responsabilization. Numbers, and the techniques of calculation in terms of numbers... turn the individual into a calculating self endowed with a range of ways of thinking about, calculating about, predicting and judging their own activities and those of others.

Rose (1999: 214)

Borges (2006) makes a similar argument in relation to the allocation of housing plots in Brasilia, and illustrates applicants' negotiations of criteria known to improve eligibility for state assistance. In the state's quest for fairness, calculative tools of governance are premised upon definitions of fairness, eligibility and citizenship according to subjective and changeable criteria. In the following section, I turn to debates on what constitutes fairness in these practices of calculability.

Calculative practices and questions of fairness

Allocation that makes use of numbers, algorithms and calculations appeals to government officials because these tools are, at first glance, seemingly apolitical. The dispassionate nature of state tools implies a procedural fairness. And yet, calculative practices as tools of allocation can be considered as a technology of government, which is, following Rose:

an assemblage of forms of practices of knowledge, with modes of perception, practices of calculation, vocabularies, types of authority, forms of judgement, architectural forms, human capacities, non-human objects and devices, inscription techniques and so forth,

traversed and transected by aspirations to achieve certain outcomes in terms of the conduct of the governed...

Rose (1999: 52)

Such an assemblage produces subjective decisions. Calculative practices of governance are shaped by peculiar rationalities, logics, and assumptions. Yet the complexities that underlie seemingly simple tools of the state, like statistics and other data, tend not to be visible. The objective and distanced nature of these technologies of government are attractive to policy- and decision-makers. Neylan points out that:

In bureaucratic settings this rigour of numbers and the characteristics of objectivity and standardisation they successfully create is advantageous for such priorities as honest government, fair allocation of resources and administration of justice. Bureaucrats must strive at all times to avoid accusations of subjectivity and bias in their administrative decisions.

Neylan (2008: 13)

Fair allocation practices are an international concern (O'Neil 2016; Eubanks 2018; Jasanoff 2017). Neylan suggests that "Bureaucratic obligations towards fairness and accountability, and perceptions thereof, make allocative techniques that feature systematisation and objectivity particularly appealing" (2008: 12). In the South African case, fairness in allocation is directly tied to whether applicants for social assistance meet the state-stipulated eligibility criteria. The fair, even-handed application of the eligibility criteria implies a just process of housing allocation. Yet the equation of just policy with procedural fairness is problematised in later chapters.

In this section which examined state tools, I have shown that states use a variety of techniques to make citizens legible, and how the post-apartheid democratic state has required wide-scale

legibility in order to address questions of social justice through economic redress. This section unpacked how states use numbers, statistics, and other calculative practices of governance to make allocation decisions in apparently objective and apolitical ways. The process of making populations legible through calculative practices conceals the subjectivities within data, a critical entry point for politics which is often overlooked by the assumption of unbiased decision-making.

In the following section, I turn to the use of technologies for decision-making, and show how tools, like the housing database, shape and are shaped by politics. A debate on techno-politics demonstrates how state tools are too often overlooked, and how this calls for the examination of the politics that underlie the form and function of these critical instruments of state work. Building on this literature, I go on to unpack the multi-dimensionality of technologies that seem to be merely technical and neutral.

Technologies and techno-politics: what shapes state tools

In the previous section, I examined the role of calculative practices for governance, and showed that tools used by the state have tended to be assumed to be objective. In this section, I turn to an examination of these tools, technologies of governance and decision-making that often appear to be objective, neutral, technical devices. I examine how technologies and politics are entangled and co-constituted. This examination shows that technologies are not simply tools of politics, but instead embody a “political sociology” (Lascoumes and Le Gales 2007) that shows them to be modes of politics (Hecht 2011), imagined and engineered with particular ends in mind. Finally, I demonstrate that to better analyse state tools, we need to look at their materialities, how they are produced and how they function.

Making the case for examining technologies

Technology has, for the most part, escaped the same extent of academic scrutiny as other aspects of development. Hecht points out that “scholars who unpack ‘development’ have tended to treat technology as an exogenous force whose ideology might be critiqued but whose material form remains largely unexamined” (2011: 2). She suggests that “...the result is that technology – when it appears at all – looks flat. Put another way, technology seems merely a tool of politics, rather than a mode of politics” (Hecht 2011: 2). Lascoumes and Le Gales (2007: 4) propose that state tools are “bearers of values” (2007: 4) and make the case for an examination of state “instrumentation at work” (2007: 6), through which a better understanding of the “political sociology of policy instruments” (2007: 4) can be generated.

Similarly, Star and Ruhleder (1996) and Bijker and Law (1992) argue that technologies have escaped scrutiny, particularly when they function as they ought. Bijker and Law remark that:

Most of the time, most of us take our technologies for granted. These work more or less adequately, so we don't inquire about why or how it is they work. We don't inquire about the design decisions that shape our artifacts. We don't think very much about the ways in which professional, political, or economic factors may have given form to those designs – or the way in which they were implemented in practice.

Bijker and Law (1992: 1)

These authors argue that we should examine technologies not just for their effects, but for their constitution. Hecht's examination of technologies places particular emphasis on moving away from 'flat', one-dimension descriptions of these tools. She shows that “the construction of a technological system is not an impenetrable, apolitical act” (Hecht 2009: 11). Instead, as a 'mode of politics', Hecht recognises the centrality of politics in the development and use of technology. She uses the term “techno-politics” to capture the entanglements between the two.

Hecht defines techno-politics as the “strategic practice of designing or using technology for political goals” (2011: 14), and notes too that techno-politics as a concept brings together the “forms of power embedded in technological artifacts, systems and practices” (2011: 3). Techno-politics is therefore interested in the ways in which technologies shape and embody politics, and vice versa. In the South African context, Edwards and Hecht (2010: 625) have described the apartheid project as a techno-political one based on the state’s reliance on “technologies of surveillance and control but also on technologies of transportation”. In more recent years, Von Schnitzler also uses the term techno-politics in relation to the state’s use of pre-paid water meters in Soweto. Drawing on Hecht and Mitchell’s framings, Von Schnitzler proposes that:

techno-politics may denote the ways in which large-scale engineering or infrastructure projects function as vehicles or expressions of larger political goals and forms of power, but it also and more broadly foregrounds the materiality of politics and political expression...

Von Schnitzler (2016: 10)

Techno-politics is a useful, and in the context of state housing delivery in South Africa, novel, framing of current state tools. Through a techno-political surfacing of the power and politics that are embodied within technologies of decision-making, state tools which initially seemed to be objective and innocuous, become worthy of our attention as sites of politics. As a result, the tools become sites of public discourse and debate. Technologies framed as ‘modes of politics’, rather than merely ‘tools of politics’, used for state practices like housing allocation, therefore become the site of research, not simply the invisible vehicle through which more interesting state processes occur.

While the politics imbued within technologies is a critical realisation and point of enquiry, the materiality of technologies is as significant. Hecht points out that a technopolitical focus should not overlook the technology itself by focussing solely on the politics that shapes, and is shaped

by, the technology. She notes that “the effectiveness of technologies as objects designed to accomplish real material purposes *matters*” (Hecht 2001: 257, her emphasis). In other words, the privileging of politics over the technology overlooks the effects of the technology itself – effects which are as significant, and often invisible. Hecht’s use of techno-politics is therefore different to Von Schnitzler’s (2016), who focusses more explicitly on the politics wrought through technology. Von Schnitzler’s use offers a way of understanding how the post-apartheid state has recast political questions as requiring administrative, and therefore technical solutions (Von Schnitzler 2016: 197-98). While this framing of techno-politics is useful for surfacing the politics imbued in technologies, Hecht’s positioning of the term demands paying attention not only to the politics embodied within the technology, but also to acknowledge and take seriously an examination of the materiality of the technology.

The materiality of the technology, or the ways in which it is constituted, is important. Bijker and Law propose that technology is shaped by its context. They show that:

Technology... is born of the social, the economic, and the technical relations that are already in place. A product of the existing structure of opportunities and constraints, it extends, shapes, reworks, or reproduces that structure in ways that are more or less predictable. And, in so doing, it distributes, or redistributes, opportunities and constraints equally or unequally, fairly or unfairly.

Bijker and Law (1992: 11)

As much as technology is shaped by its context, it equally sculpts how we come to understand what it represents. Datta and Odendaal point to the ways in which “[t]echnology removes the affect, emotion, morality and corporeality that are deemed to be embodied by the disorderly city and signifies how power works through supposedly objective instruments” (2019: 389). On the surface, technologies can appear to be objective, neutral devices devoid of politics. But to

examine the materialities of technologies starts to surface the power held within these supposedly neutral tools.

The materiality of the technology – all the contexts and relations that shape its development – are critical for understanding the modes of politics that it embodies. In the following section of this literature review, I turn to the question of how to examine the materiality of the housing database. While the techno-politics debate productively calls for an examination of the materiality of the technology, it does not provide a suitable vocabulary with which to do this in the case of the housing database, a tool that has material effects, but is essentially *immaterial* to all but a handful of officials who work with it. To address this gap, I turn to literature that examines the components that comprise the technology. In my case, this is a literature that delves into the politics of data, and the effects of datafication.

Delving into data and its roles in housing allocation

In the housing allocation debate, rarely is data the focus of academic attention. However, the nature of data is key in this data-driven decision-making space – the composition of the data, the collation of it, how it is aggregated for planning purposes, and how it is used to make fair allocation decisions. In the previous section, I showed how technologies of governance are not merely tools of politics, but also modes of politics. The presence and role of politics within seemingly technical tools of the state become visible when we examine tools of state decision-making that are typically relegated to the periphery of studies of housing allocation. Examining these tools with the intention of surfacing the techno-politics inherent within them requires observing their materiality, or their form and function. In the case of the integrated housing database, a different lens to the usual citizen-state encounter is required, one that considers the database's composition: its data. As such, I turn to debates on the production and politics of data

to better understand the ways in which data and databases are not neutral devices, but rather come to be constructed, imagined and used by the state for particular rationalities.

Problematizing data's appearance of neutrality

Housing allocation in South Africa is not usually examined through a data politics lens. Yet Cape Town's integrated housing database, the local government's tool for determining fairness in allocation practices, is comprised of, and functions through, data. Neylan points out the link between technologies for allocation and objectivity, noting that "Bureaucratic obligations towards fairness and accountability, and perceptions thereof, make allocative techniques that feature systematisation and objectivity particularly appealing" (2008: 12). The housing database is sidelined as one of the state's technical tools of decision-making, something so mundane as to be ignored. Taken for granted, seemingly as a neutral aspect amid the dramas inherent in housing allocation, the data are overlooked as a site of politics. This oversight is a shortcoming.

Data may present a "certain superficial neutrality" (Hacking (1991: 184) in Beer 2016: 3) which "lends them an air of authority which makes them so powerful" (Beer 2016: 3). Unchecked, the power of data can easily be assumed to be a utopian tool of governance (Halpern 2015: 9). The power of data resonates with the power of state tools for legibility, discussed earlier, where data "is seen to be a tool for governance that cannot be questioned or rivalled with subjective opinions" (Beer 2016: 7). Data are easily presumed to result in ethical, fair decision-making. Yet such an assumption fails to question the very basis upon which decisions are made: what are the data, how are they constituted, and are the data unbiased and fit to render a fair decision? This section explores how data are imagined, crafted and produced, collated, cleaned, maintained, and interpreted and represented, showing that there is a considerable amount of state work that goes into the production of data, which tends to be invisible to most observers.

The invisibility of the crafting that supports the use of data for decision-making silences the politics inherent within it.

The neutrality of data is problematised in a growing literature. Described by boyd and Crawford as embodying a mythology that gives data the “aura of truth, objectivity, and accuracy” (2012: 663), data are too easily assumed to be self-evident, and therefore a neutral tool for state decision-making. Gitelman (2013: 1) defines data as “units or morsels of information”. Kitchin (2014: 1) points to the process of abstraction that defines data, arguing that data are the “raw material produced by abstracting the world into categories, measures and other representational forms... that constitute the building blocks from which information and knowledge are created” (Kitchin 2014: 1). Yet the ‘rawness’ of data is a terminology that has been critiqued. Gitelman (2013) asserts that the notion of raw data are an ‘oxymoron’, and Bowker (2005: 184) further proposes that all data are ‘cooked’ to a certain extent. Jasanoff argues that “[t]he bare term ‘data’ tends to sanitize the world of observation, erasing from view the observational standpoints and associated political choices that accompany any compilation of authoritative information” (2017: 12). What she terms the erasure of observational standpoints is a critical point of departure for my research, which seeks to examine the contexts in which data comes to be produced and used for decision-making in order to present a positioned understanding of the landscape in which allocation decisions are made.

The spread in scope and concept of big data has given rise to a growing and vibrant debate on the role of big data in governance. While the debates for and against the use of big data in governance are beyond the scope of this research, some of the contributions to the topic are particularly useful for conceptualising data and bringing into view the politics within data. Part of data’s allure is its capacity for aggregation, which is useful to the state for planning and monitoring purposes. Yet Gitelman (2013: 3) cautions that data in aggregate form appear to be “before the fact:... the starting point for what we know”, rather than a situated form of knowing lived realities. How data come to be is often overlooked.

Before processes of aggregation are possible, however, data have to be produced. Gitelman (2013: 3) contends that the process of transforming information into data is one of imagination. Dourish and Gómez Cruz (2018: 2) call this process 'datafication' and argue that there are processes of "symbolic and imaginative work that underlie coming to think of 'data' in the first place". In other words, data are only data when we see them as data – useful for a particular end, rather than simply information. Therefore, if our understanding of what data are requires an imagination of data, then data are clearly not self-evident or transparent. The process of imagining data is itself "interpretive" (Gitelman 2013: 3). Data, in other words, are pieces of information that are considered to be useful in particular ways. Jasanoff asserts that:

...information is a social construct – not a mirror of the world but a human-made representation of matters in the world. Under this reading, the production of information for public purposes is embedded in social relations that raise their own challenges for democracy and legitimacy.

Jasanoff (2017: 5)

The social construction of data requires, then, "an act of seeing" (Jasanoff 2017: 2). This particular way of seeing the world is shaped with a particular purpose in mind. Halpern also reflects on the processes of producing data, noting that "our forms of attentions, observation, and truth are situated, contingent, and contested" (2015: 1). Yet she notes that because data are useful, it is seen to be beautiful. Yet she too cautions against the assumption that data merely exist: "[d]espite the seeming naturalness of data and its virtues, therefore, there is nothing automatic, obvious, or predetermined about our embrace of data as wealth. There is, in fact, an aesthetic crafting to this knowledge, a performance necessary to produce value" (Halpern 2015: 5). The performance of crafting data gives it utility, and therefore renders it beautiful. Within this utility lies the appearance of neutrality, objectivity and apoliticality.

By defining data as something that is shaped by its imagined usefulness, we surface the production of data. In doing this, we can see that data are not neutral, nor are they 'truthful' or self-evidently authoritative. Data, then, are not created in a vacuum – they are collected, mined, and interpreted in particular contexts, for particular outcomes, by particular actors. Drawing on Bowker and Star (1999), Gitelman (2013: 4) proposes that instead of looking into data, or through data, that we look *under* them “to consider their root assumptions”. In so doing, we question the “mythology” of data (boyd and Crawford 2012), that it is impartial, truthful, accurate, and objective, and can function in a decontextualised way.

The objectivity of data is questioned not in order to destabilise the possibilities of making good, fair, decisions, but rather to acknowledge the contextuality and situatedness of data and its production and use. Recognising claims to objectivity and questioning objectivity is important – Gitelman (2013: 4) argues that a recognition that objective claims are “situated and historically specific” is a way forward – rendering data useful for decision-making, but importantly, highlighting the contexts in which the data were imagined, collected, analysed and interpreted.

I borrow from this debate the recognition of data as constructed reflections of reality. I use this literature on the politics of the production of data to articulate the materiality of Cape Town's housing database, and I use it to delve into the making of the city's housing demand data. I extend the techno-politics debate using this literature, showing how data have been crafted in the post-apartheid context in order to facilitate fair housing decision-making. And I complicate narratives of housing delivery in South Africa by proposing that we pay attention not just to the politics that surrounds the citizen-state encounter, but that we position the database as an object of study and make visible its politics as a tool steeped in apartheid-era allocation legacies.

The datafication effect and the production of a patient applicant

South Africa has a long history of measuring its population and turning citizens into statistics, rendering them subjects of data. The process of becoming a subject of data is what Koopman (2019: 4) describes as becoming an “informational person”. The informational person, as he imagines it, is “inscribed, processed, and reproduced as [a subject] of data”. In this understanding, citizens become informational persons at the point at which they become a subject of data. Like Kitchin (2014) argues above, the informational person is abstracted from the complex realities that comprise their everyday life. This process of distancing people from the informational person enables the aggregation of people as data.

The creation of the informational person starts with the process of envisaging the kinds of information about people that might be useful for housing allocation decision making. The process of creating a data subject, then, begins with the conceptualisation of ‘data’. The conceptualisation of data, where information is organised in ways that are useful for particular purposes, is referred to by Dourish and Gómez Cruz (2018: 2) as the process of datafication. The datafication process refers not just to the technical transformation of the information into data (including the standardising, cleaning and maintaining), but also the transformation of a particular way of knowing a reality, into the assumptions of what ‘data’ represent (in particular their neutrality, apoliticality and objectivity). As a term, then, datafication captures both the processes of imagination, crafting, and ‘cooking’ to which information is subjected before it becomes useful in a particular way conceived by the state.

The term datafication is also intended to capture the problematic assumption of the acceptance of data as the answer to decision-making – what Nadim (2016), cited in Dourish and Gómez Cruz (2018: 2), terms “data fiction”. Part of the fiction of data as the answer to unbiased state decision-making lies in the notion that data exists – is a pre-given, stand-alone fact – rather than imagined and constructed. The work that goes into the production and use of data involves “a

complicated ontological choreography, as scientists and technicians work to make data ‘the same’ in a changing ecology of technologies, organizations, field sites, and institutional arrangements” (Ribes and Jackson 2013: 148). This “ontological choreography” requires considering the ways in which data are imagined, produced, shared, maintained and stored.

In this South African case, this “ontological choreography” is a key site of examination, the capturing of data from handwritten records to computerised systems, the removal of racist latencies, the standardisation and splitting of lists according to newly defined municipal boundaries, and ensuring that the data functions across different systems, decades and political rationalities. This choreography has been a significant state project for over 30 years, yet remains invisible to most, the production and maintenance of data concealed in order to maintain the database’s integrity as a fair and objective decision-maker based on seemingly technical data.

This section has shown that data cannot be presumed to be neutral devices. Like the technological tools in which they reside, data are socially constructed, shaped to tell particular stories about specific groups, at a particular moment in time. Recognising that data are imagined and shaped allows for a surfacing of the state’s work in doing these processes of imagining, shaping, maintaining, and storing data. I use this debate to show how the housing database is comprised, how its form is a production of state effort to ensure a technology that appears, on the surface, to be a coherent and seamless tool for decision-making that is beyond scrutiny. In the final section of this chapter, I show how this vocabulary of data and data politics can be used to speak to a local technology that is usually overlooked, or only examined for its outputs rather than its functioning.

Conclusion: A frame for researching the housing database

Through this literature review, I have shown that the South African housing literature focusses on the development of housing policy, the lived experiences of waiting for the state's assistance, and the challenges of housing delivery in a context where housing demand far exceeds the state's capacity to supply houses at scale. I have shown that this discussion on housing privileges the citizen-state encounter. This is logical, given that the South African state's housing programme is a significant marker of citizenship and political legitimacy in the democratic period. The interaction between the state and its citizens is a crucial site of power and thus contestation. However, this focus on the citizen-state encounter overlooks the state's use of tools for distributing these housing opportunities in a manner that is fair and transparent.

To build the research on the database in this thesis, I draw on literature that documents the quantitative techniques used by the state to 'see' its citizens. These processes of making citizens legible represents a social contract, making citizens visible to the state, but simultaneously making the state visible to its citizens. This has a particular meaning in South Africa, where populations were highly regulated and therefore known to the state in the apartheid period. Yet these practices of knowing were based upon racist premises, and so the apartheid state's calculative practices have to be understood within this context of entrenched formal segregation. In the post-apartheid period, the legibility of the state to its citizens is universal, and the rationale for using tools for calculative practices of governance is to ensure fair distribution of state resources to those who meet the state's eligibility criteria. These practices and their tensions are key elements that shape the database, its form and functions, what I track substantively in the body of the thesis that follows.

To understand the housing database, and other tools like it used by the state for calculative practices of governance, I build on a techno-politics literature that surfaces the power that lies within seemingly technical tools used by the state for decision-making. This literature suggests that these instruments for decision-making are not merely tools of politics, but modes of politics

(Hecht 2011), what prompts me to pay attention to the development and materialities of the database in this research, to track how its technologies shape, and are shaped by, politics. To describe the housing database's materiality, I also build from a body of work on the production of data and its politics, which substantiates the ways that technologies and the data that sit within them are socially constructed, shaped by the state for particular outcomes (Gitelman 2013; Dourish and Gómez Cruz 2018). Tools of the state, even those that are premised upon data-driven decision-making, are not neutral, objective, apolitical and unbiased (Star 1999; Bowker and Star 1999; Kitchin 2014; Jasanoff 2017). Instead, they need to be examined for their implicit logics, assumptions, rationales and premises that underpin their development, workings, and practices. These arguments are central to the analytical framework which I build on to research the housing database in this thesis.

In sum, the housing database is a state tool developed for making fair housing allocation decisions. Yet it escapes scrutiny, rendered either invisible or mythological in public dialogues on housing allocation. In shifting attention from the citizen-state encounter of housing allocation to the tool itself, in this thesis I position the database as the object of study. Doing this allows me to examine the database for its complexity – its “gradations, texture and contradictions” (Charlton 2018b: 102) – to make visible not only the shape of this tool, what I refer to as its form. It also opens up questions of its in practice – its function, its development and reconfiguration through a time of significant social and political change in South Africa.

Chapter 3: Examining ‘boring’ things: The database and its methodological challenges

Introduction

Technology is sometimes considered to be a “boring thing” (Star 1999: 377), and the database is no exception. In the field of housing delivery and allocation, the housing database is an unexciting component in an otherwise often dramatic and contested site of state practice. It is a technology so mundane in its role and operation, it is easily disregarded. Yet the database is an important tool in the state’s work in making housing allocation fair and procedural. Cape Town’s database is considered by other local government officials to be an impressive example of technology working towards fair decision-making in contexts where corrupt practices of allocation derail carefully composed allocation policies. Ignoring the database and the rationales, logics, assumptions, and politics that drive its development and its varied uses overlooks a critical site of state work.

Rather than assuming the housing database to be invisible to all but those who work with it, I instead position the database as the object of my research and begin my examination by shedding light on its range of visibilities. In centring my study on the database as a tool of the state, I examine it for its multi-dimensionality. I do this by approaching the database from a range of perspectives to make visible the database’s form and function, its use in the broader polycscape of housing delivery. Through such an examination, the state’s work to craft of this tool becomes apparent. Methodologically, my research works to document the database, its development and the state’s work on it, the actors involved, and the tools and technologies which shape it.

Tools used by the state are critical sites of research precisely because of their apparent objectivity and their appearance of neutrality. As Larkin (2013) suggests, they occupy a spectrum of visibility, from “unseen to grand spectacles and everything in between” (Larkin 2013: 336). At times the technology that shapes state tools like the database may operate within a black box, removed from public view; at other times, the technology that shapes them is invoked by the state, performative, a symbol and instrument of for policy and change.

The integrated housing database is not an obvious entry into discussion on housing processes with officials, politicians or those waiting for homes. It is either considered to be unremarkable, a banal part of administrative systems, or so elusive that it is mythical (Tissington et al. 2013). Sometimes, the database is viewed as a political veneer, a public front concealing the state’s ineptitudes in housing allocation in practice (Tilley and Pieterse 2008). These readings of the database overlook not only its workings, but also the state’s investment in its development through decades of regime change which have reshaped the state itself, its housing allocation processes and priorities, as well as the technologies that facilitate the state project, the subject of this research.

In this chapter, I first introduce the analytical frame for its research, part of a broader project of disaggregating the state to focus on its statecraft. Second, I situate South African local government and housing allocation – in Cape Town specifically – as my case, an interesting context in which state tools have increasingly become technology driven, as well as critical sites for making material shifting state imperatives, in this case for redress and procedural equity in housing allocation decision-making. Changing state tools engage these questions. Third, I explain the shift analytically in focusing on tools for housing decision making, rather than the decisions of actors in the housing process, the context which drives most research and literature in the South African context. Fourth, I explain why research is critical for ‘lifting the lid’ on the database to make visible the politics and practices embedded and embodied in it, and in other

state tools that appear inscrutable or impenetrable on the surface. In this chapter I explain how I documented the database, its evolution and its varied uses, as well as the processes through which I pieced together material from archival research, newspaper articles and popular media, and interview material to understand the housing database as a state tool.

An analytical design to focus on state tools

This research began its journey as a response to calls to examine the everyday practices of the state. This literature recognises ‘the state’ as a problem space and call for attention to everyday state craft (Sharma and Gupta 2009; Painter 2006; Bénit-Gbaffou and Oldfield 2011; Bénit-Gbaffou 2018b). Moving away from conceiving of the state as a monolithic, fixed and distinct object, the state is now recognised for its multiplicity of actors, all with different, sometimes competing, rationalities and agendas.

Calls to disaggregate the state focus on examining not just the disciplinary power of the state, but also the practices of the state – “administration, regulation and delegation” (Bernstein and Mertz 2011: 7) – in order to better be able to see the micropolitics of state work that are often hidden in the “mundane bureaucratic procedures” (Sharma and Gupta 2009: 11) that comprise everyday state practice. Examining the heterogenous characteristics of states (Painter 2006: 754) enables a surfacing of “the importance of the affective, the non-rational, the non-cognitive and the practical” (Painter 2006: 763).

Examining the everyday practices of states reveals some of the contestations between different state actors, demonstrating that ‘the state’, as we are often inclined to denote it, is in fact a misnomer. Yet despite the heterogeneity of state actors that exist under the ‘state’ banner, and the uneven ways in which ‘the state’ operates across time and place, the ‘state’ is still a critical actor in the governance of space and people. As Bénit-Gbaffou and Oldfield (2011: 446) explain,

“even if it is not so powerful, [the state] remains at the core of representation and expectations, especially of lower income residents”. ‘The state’ is also a performative actor, in the case of housing, a of a singular actor towards the democratic promises. The centrality of the state’s role is a critical point in South Africa, particularly with regards to the formal distribution of state housing opportunities. An examination of housing delivery and allocation has to take seriously the state’s role in the execution of the democratic state’s imperative for redress through its national housing delivery project. The City of Cape Town is a critical state actor in the execution of this democratic housing project. Tasked with making housing allocation decisions according to nationally-stipulated eligibility criteria, the integrated housing database is the City’s tool for making procedurally fair allocation decisions.

While deliberations on the disaggregation of the state and research on everyday state practices shed light on the multitude of actors that comprise the state, each with their own agendas, priorities, logics, assumptions and rationales, this body of literature has rarely extended to a disaggregation of state processes. The tools through which the state implements its policies are critical features used in everyday state practice. Although there is a growing discussion on the tangible markers of state practice, for example, the paper materialities of bureaucracy in Pakistan (Hull 2012); the red tape that delays state action in India (Gupta 2012), and in South Africa, the significance of documents in the quest for legitimacy as a foreign national (Hoag 2011, 2014, 2010), and legibility for state healthcare (Vale et al. 2017), these studies rarely extend to the state tools that are intangible. Here, I extend the work of disaggregating the state to its tools, and look specifically at Cape Town’s housing database as the state’s tool for implementing fair allocation decision-making in the post-apartheid context.

To shape how I examine the housing database, I draw on literatures from emerging debates in both infrastructure and technology fields. While these are distinct discussions, there are overlaps conceptually and empirically. The housing database speaks to both tangible

infrastructure (housing) and technology (the database system). Both are material and aspirational, both represent the state's imperative for redress. In the shaping of my analytical design, I draw on infrastructure literature for making visible the routine, mundane, banal everydayness of state tools. And I use debates on technology to show how these tools are constructed and engineered as material infrastructures. The housing database can be conceptualised as an infrastructure of state decision-making, a technology that is designed to facilitate fair housing allocation decision-making using the available data – in this case, from housing application forms. Star (1999: 377) argues that infrastructures are often considered to be “boring things” that are “singularly unexciting”. She notes that “[i]t takes some digging to unearth the dramas inherent in system design creating, to restore narrative to what appear to be dead lists” (Star 1999: 377). Housing allocation is usually examined through a citizen-state encounter lens. This is logical: the phase at which housing allocation decisions are made public is unsurprisingly often contentious when the imbalance between citizen's need for housing assistance and the state's capacity to supply housing opportunities is taken into consideration.

Given the context of the considerable need for housing, coupled with a history of unfair allocation practices, allocation decisions are often met with claims of maladministration and corruption. Although the housing database is the tool used by the local and provincial state for allocation decision-making, rarely is it invoked in these contestations, its workings questioned by citizens who are unsatisfied with the state's decisions. The database's technical appearance renders it invisible. However, Star's provocation is a useful one. While the database may seem to be invisible and a neutral, apolitical tool, a project of digging to unearth the dramas within the database demonstrates that the database is neither simply invisible, or neutral, objective or apolitical in its functioning.

To conclude this section, I argue that to disaggregate the state, we need to examine its tools like we do its actors, to show the ways in which it is not a singular, monolithic entity. I propose that

we need to examine the seemingly boring tools like the housing database in order to understand the state's project of redress, and the ways in which it conceives fairness through its tools. In the following section, I turn to the challenges of examining a tool that is designed to appear to operate seamlessly and invisibly to make housing allocation decisions.

Cape Town as a site for research?

States around the world use technologies for governing – these tools assist with collecting and collating vast quantities of data, sorting this data, and making it useful for decision-making (Duminy and Parnell 2020; Eubanks 2018: 3; Redden 2018). The South African case is no different, equally reliant on data for implementing responses for social change, yet the South African context is unique. Apartheid history remains deeply entrenched in cities, where the scale of need for state intervention is vast, the legacies of past policies are still apparent spatially, economically and socially, and the institutional arrangements at all the levels of government are relatively young, with uneven pasts. This makes it an engaging place to research state tools that are ostensibly reasonably new in their implementation.

Hecht (2011: 2) has pointed out that “the seduction of revealing the hidden politics lurking in large systems all make it seem as though the most important stories remain grounded in the superpowers and in Europe”. However, hidden politics are not limited to lurking in large, northern systems. Emerging countries similarly embody politics in the day-to-day routines of state work. South Africa makes for an exciting place to examine the role of technology in decision-making precisely because of the state's past histories of inequality, and the democratic state's commitment to justice. It is arguably because of the apartheid state's dedication to othering through superficially rational, apolitical tools of the state that surfacing the politics that lurk beneath the surface of the democratic state's bureaucracy is an enticing, if potentially destabilising, project.

While there is a national housing needs register that is a critical actor in the allocation arena, my interest lies in Cape Town's integrated housing database. My interest in this particular tool started as a result of the database's opacity. In previous research on the lived experience of waiting, I tried to ascertain how the City's allocation decisions were made in the context where housing applicants place their faith and trust in a system of housing allocation about which they know very little. However, I made limited headway given the scope of my Masters research. Some years later, I returned to the database as something that I wanted to 'demystify', to unpack how it works in policy and in practice. The entry point to this research was personal and pragmatic – I live in Cape Town and have existing contacts within the local government who I hoped could help me to identify relevant respondents to interview. Analytically, the City of Cape Town is a critical actor in the development of allocation databases, with its integrated housing database shaping the form of the Western Cape province's allocation database, and the data captured within it. Of key interest to me was how the tool was developed, its history and its imagined future, how it functions, and how it does not. I wanted to understand the local government's allocation tool for its theory and its practice, partly to finally unravel my own database mystery, but also because Cape Town's database is considered to be a trailblazer and a sophisticated data-driven intervention in a contested and politicised context of housing allocation.

Paying attention to 'hidden politics' within this tool is not intended to undermine the South African state's commitment to change. The state's project of changing the materiality of cities and its undertaking to implement fairness in state practice is apparent in public discourse. When these principles of democracy are contradicted, the state is publicly and vociferously criticised. However, an examination of the everyday practices of officials and the tools through which they operate demonstrates the ambiguities upon which these tools are based – despite the appearance of neutrality, rationality, and technicality. In a context where there is a long history of intertwining politics and power, anything remotely political is always carefully

observed by the public. Considering the relationship between power, politics and state tools, the following section explains why we need to examine the tools used by the state in their own right.

Database as the case? Researching the ways state tools work

Often overlooked in examinations of state processes, Hecht (2011: 2) notes that when technologies “appear at all” in research, they often look “flat”. This apparent one-dimensional nature of state technologies employed to make sense of complicated state information therefore gives the appearance of being neutral devices, technical interventions for political and bureaucratic challenges. However, Hecht contests the characterisation of technology as one dimensional, ‘flat’ tools, and instead suggests that we should rather broaden our consideration of technologies not only as simply tools of politics, but also modes of politics. Lascoumes and Le Gales (2007: 4) offer a different language for the modes of politics embodied within and through technologies of the state, what they refer to as the “political sociology of policy instruments”. Like Hecht, they note that what they refer to as policy instruments:

are not tools with perfect axiological neutrality, equally available: on the contrary, they are bearers of values, fueled by one interpretation of the social and by precise notions of the mode of regulation envisaged.

Lascoumes and Le Gales (2007: 4)

The modes of politics embodied by technologies like the housing database require paying attention to the context(s) in which the tool was developed, including the timing, the actors involved, the rationales, assumptions, logics and imperatives that inform the development and use of the tool. It is the examination of these modes of politics – or the political sociology of the tools – that this thesis examines in relation to the housing database and its role in housing allocation.

This research engages with the ways in which the tools used by the state to implement the neat, typically acontextual policies operate as modes of politics, rather than simply tools of politics. The debates that respond to calls to disaggregate the state do so by paying attention to the everyday routines of state actors. Such an examination enables the surfacing of the ways in which state actions, processes, and practices are not rational, technical, or procedural, but instead are situated and contextual, embodying particular rationalities. Extending this attention to the instruments and tools used by the state for implementing social justice imperatives similarly allows the unveiling of the politics that accompany even seemingly unimpressible systems of operation. Reconceptualising the technologies that do the state's work as modes of politics, rather than merely tools, enables us to see the ways in which these technologies are neither flat nor dull, but rather operate with, within, through, around, under, and over other systems, all of which encompass power and politics, whether this is overt or implicit.

Examining the interaction of technology with its context – historical, political, and institutional – is critical in order to see the politics inherent within state practices. In this case study, an examination of the process of housing allocation requires an unpacking of the housing database and the housing allocation technologies that preceded it. In order to do this, it also demands an examination of the data through which allocation decisions are made, and how the database and the data held within it operate with the broader allocation polycscape.

This is a study of state process, of state practice and the state's work to create a tool for fair housing allocation decision-making. Stories of housing allocation have tended to focus on the end point of the state housing journey, either on the contentions that arise through seemingly unfair housing allocation practices, or the opposite, celebrating the handover of keys and sometimes deeds, and in so doing, contribute to narratives of home as recognised by those who have received houses from the state. In these typical narratives of housing allocation, the focus point is the very end of the process after application – the receipt of a house. This is an

examination of the product (Bowker et al. 2015). But what about the state's process to produce this decision? The housing database functions as a repository for housing demand data, through which the state can sift through to identifying eligible housing applicants. For the most part, housing allocation process is bound up within the local state, inaccessible even to officials who do not work directly on matters of housing allocation. In the public domain, the specifics of the database's functioning to make allocation decisions are not divulged, rendering its logics invisible.

The housing database cannot be theorised singularly as invisible. Its workings may be opaque, but it is referenced in policy and comes into public consciousness at particular moments. National, provincial and local government officials are aware of its existence, but it is an unremarkable tool to most – unless working with the housing information specifically, a task reserved only for a few officials trusted with access to the database and the data within it, officials do not have access to either the application data or the data that can be generated by the database for planning purposes. It transpired that interviewing officials about the database itself was tricky. While I assumed that most officials who work in the housing field, either at the neighbourhood level or at the City level, would have some degree of access to the database, this was not the case. Unsurprisingly, these officials could not reflect animatedly about a technology that they cannot access. The database is also inherently undramatic in the context of housing delivery and allocation decision-making, and often officials were more interested in these sites of contestation, rather than the technological system that facilitated this decision-making. The database, in this understanding, was a banal aspect to research when there are more obvious sites of contestation.

The database is also only a small component of officials' everyday jobs. It operates alongside and underneath the day-to-day tasks of a handful of officials who deal with the public-facing housing application process. The database is therefore not a priority in their day-to-day

undertakings. Those who have greater access to the database are able to explain more about how it functions, but these few people are very aware of how highly politicised the database's decisions are, and are therefore protective about sharing how the database functions and the kinds of access they have to the data within it. This reticence to reflect on the database by senior officials, however, points to the importance of the database's role in the allocation of housing. But how does one go about lifting the shrouds from these technologies, particularly when they are as protected as the housing database? That has been the challenge through the research phase of this thesis. In the following section, I outline how I undertook this research.

Lifting the lid: Methods to research technologies designed to be impenetrable

Previous experience in trying to understand how the database functions hinted that this was not the easiest topic for examination. Tools of the state are rarely examined for their politics, and the database was elusive – mostly missing in academic texts, missing in public discussions on housing allocation and its contentions, and almost impossible to discuss in an interview context. In starting this research, I had anticipated that the majority of my research would comprise of semi-structured qualitative interviews with City of Cape Town officials to unpack the database's logics and workings. After presenting my proposal to my department and obtaining ethical clearance from the department's faculty, I commenced the research process by undertaking exploratory interviews with two academics who had worked closely with the state in the field of housing allocation policy development. These interviews helped to figure out the turf of my research, to test out some interview questions, and, critically, to identify and even introduce me to key respondents.

Through a recommendation from these initial interviews, I made contact with the first official that I hoped to interview at the City of Cape Town and was informed of a new institutional requirement, the need for research permission from the City. I followed the application

procedure, sending to the official, as requested as part of the permission application, a copy of my research proposal (which had been approved by the Environmental and Geographical Science department at UCT), the confirmation of ethical clearance (which had been obtained from the Science Faculty's ethics board at UCT), and a letter from my supervisor confirming that interviews were a requirement of my thesis methodology. I later provided, after a follow up email, additional details on who I would interview and the nature of the questions that I would ask. Three months after applying, I was granted permission to continue with the research process. The permission came from the Directorate of the Mayor.

Of course, the requirement for permission from the City was a stumbling block for the research, meaning that I could not continue with interviews until I had permission. While waiting for the state to process my application for research permission (the irony of waiting was not lost on me as a tiny and insignificant insight into the waiting experienced by housing applicants), I turned to the archival component of this research. The archival research turned out to provide critical insight into the housing allocation tools used by the local authorities prior to the database, as well as provided much-needed insights into the complexity of the local government arrangements in the apartheid and immediate post-apartheid era. The time spent in the stacks in the Government Publication section of the UCT library, devastatingly since lost to the fire of April 2021, meant that when I could commence my interviews with officials, I had a sense of how the database had come to be developed, along with a notion of how the housing terrain, challenges, and imperatives in Cape Town had changed between the mid-1980s and the present period. Together, the archival research and the interviews with officials enabled me to trace the tools of housing allocation, and to start to see some of the sites of politics within these tools. The intention of this research approach was to “strip away” “the veneer of a seamless, transcendent entity...to reveal the processual, messy and ever-contingent reality of everyday state action” (Herbert 2000: 555) – in my case, through the database as a lens on state practice.

While this was not strictly speaking an ethnography, and rather more of a fluid interpretation of qualitative research, I embraced aspects of ethnography to better get to grips with the challenges of the state's task of fair housing allocation. Inspired by Mountz's (2003, 2010; Billo and Mountz 2015) approach to an institutional ethnography of the state, I wanted to offer a similarly nuanced understanding of what comprised 'the state' in the context of Cape Town's integrated housing database. While an institutional ethnography per se was not possible due to my limited access to the state, I wanted to pay attention to how "[t]he state' does not exist outside of the people who comprise it, their everyday work, and their social embeddedness in local relationships" (Mountz 2010: xxiv). This became an ambitious task when it transpired that the database, while central in the state discourse on housing allocation, and fundamentally integrated across the three spheres of government, was in reality only familiar to a handful of officials who work on the data held within it, who imagine and improve its functioning, and who understand its ins and outs.

Instead of an institutional ethnography, I embarked on what would become an ethnography of the database as a tool of the state. Borrowing from Sharma and Gupta's (2009: 13) calls to pay heed to everyday state practices as a way of surfacing power and making visible the recognition, production and reproduction of 'the state', I turned my attention to the everyday state practices in which the database was invoked, imagined, described, made, maintained, and deployed. I tried to get a better understanding of the work undertaken by the officials who imagined, unravelled, and remade the database. I paid attention to the everyday work that facilitates the development and maintenance of the database and the data within it. And I examined how the database and the data within it are embedded in the local, provincial, and national contexts.

To build such an ethnography of the database as a tool required immersing myself in housing allocation discourse, including examining the tools through which housing allocation takes place (the database, housing policy and practice guidelines), analysing how housing allocation

appears in public discourse (in press releases and newspaper articles) and discussing how housing allocation is understood by the officials who work in the field on a day-to-day basis.

Dourish and Gómez Cruz (2018: 5) make a case for using ethnography to study data, arguing that “ethnography proceeds not just by telling stories but by tracing them, analyzing the spread of ideas, expressions, attitudes and ways of thinking through organizations, communities, and cultures”. By tracing the development of the database as a tool used by the state for decision-making, I adopted this approach that privileges and foregrounds context, critical in the examination of a contentious topic such as housing allocation. I also wanted an approach that examined an object not only for the decisions that it makes, but for its development, the components that comprise it and its positioning and resonance in policy. Dourish and Gómez Cruz (2018) note that an ethnographic research approach is useful because of

...its attentiveness to the processes by which inert objects are enlivened, and particular things – objects, places, practices and ideas – are made to ‘live’ within cultural settings... ethnography sets about unpacking those practices by which meanings are produced at particular times and in particular places.

Dourish and Gómez Cruz (2018: 5)

An ethnography-inspired methodology therefore enabled me to better understand housing allocation through the primary tool used by the state to allocate houses according to the principle of fairness. Below, I outline specifically the methods that I used to gather the empirical evidence to produce this research.

Archival research to situate the database and its development

While waiting for permission from the City to conduct research with City officials, I turned to an examination of institutional archival documents related to the housing field. Inspired by Hull’s (2012) descriptions of the roles of documents in the production of bureaucracy and governance,

I sought to trace the database in the state's records. Initially, I started by researching the City of Cape Town's online records, scouring the website for any mention of housing allocation and the database. I discovered an overwhelmingly comprehensive collection of minutes, agendas and other supporting documents for every portfolio committee² at the City.

The portfolio committee meeting minutes capture detailed accounts of the debates that took place in monthly meetings and are available online from 2004 to present. I undertook a detailed search of these records and looked at the agenda, minutes and any attachments for every meeting. In doing this, I hunted specifically for anything relating to housing allocation – particularly trawling for discussions on waiting, on the database, and on the legacies of the technologies of allocation. I also noted trends of key items of debate and took note of any particularly detailed or frequent matters arising. In doing this, I developed a better understanding of the state's commitments at the time, of the shifting debates at the local level, and the progression of various state interventions into streamlining the housing development and delivery process.

Hunting through these records was a slow process, and initially I thought was just busy work while I waited for permission to commence interviews. However, the more minutes I read, the more interesting the material became. The meeting minutes were a rich source of information about housing allocation generally and sometimes the database specifically. Moreover, I gained a better understanding of how the local government worked, who the actors were, and the key debates that were shaping the department at the time.

² Portfolio Committees are grouped around the City's departmental areas (including human settlements, energy and climate change, transport, etc), and play an oversight role regarding the City's "budgets, policies, rendering of services, strategic objectives and priorities and by-laws" (City of Cape Town 2021: 46). Comprised of a chairperson and councillors, these committees debate critical issues arising within their areas of interest. Meeting minutes therefore offer useful insights into debates on matters of concern.

A systematic review of these minutes also provided some insight into higher-level political and policy debates – for example, the shifting in name of the portfolio committee from ‘Housing’ to ‘Human Settlements’ in September 2011 was a reasonably late reflection of National Government’s revised housing policy of 2004, which committed to a shift in direction from that of building sustainable neighbourhoods, rather than isolated houses on the peripheries of cities.

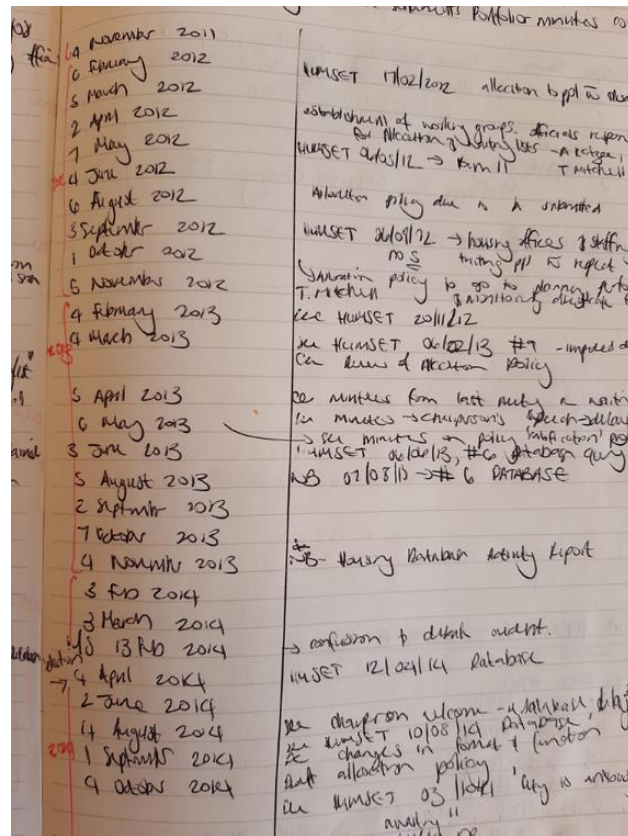


Figure 3.1 My records of City of Cape Town portfolio meeting minutes

And in February 2017, the name of the portfolio committee changed again to reflect the City’s new ‘transversal’ management approach, as implemented by then mayor Patricia De Lille, intended to facilitate engagement that departed from the previously ‘siloe’d’ departments which operated in isolation from other relevant city stakeholders. The new name, the Transport and Urban Development transversal committee, reflected the realignment of reporting structures across the local government. In so doing, matters of human settlements were joined with a

much wider portfolio, which meant that from a research perspective, fewer details were recorded in relation to matters of housing allocation and the database.

This archival search provided a fine-grained, micro-level of detail that is not similarly detailed in either policy or strategic documents. For this reason, these portfolio committee meeting minutes provide a useful insight into the day-to-day functioning of local government departments. However, these records do not exist online for the period prior to 2004, although similar records are available in other archives. The University of Cape Town's Government Publications library held one such archive of local records. Although far from exhaustive, the library had records from some of the local authorities of the time, including the housing portfolio committee meeting minutes of the Divisional Council of the Cape, a provincial authority that governed the areas formerly classified as coloured.

Given the quantity of the binders that I requested to examine and the limited staffing in this section of the library, I was permitted into the usually-restricted access library stacks, where I paged through records from 1983, searching for information relating to questions of housing: housing waiting lists, housing shortages, housing development, and housing allocation (see Figure 3.2). I didn't really know what I was looking for, and also was not familiar with the library's filing system of these records. Having already been in contact with a key respondent who told me about the computerisation of the waiting lists commencing in 1984, I started my search a year prior, hoping to trace the start of the computerisation process. Figuring my way through this material was a case of trial and error, and being allowed to sit in the stacks for hours at a time, paging through the dusty indices and searching for the corresponding minutes and reports meant that I could figure out what I needed as I went. What became quickly apparent from this search through the library's records was the implications of the different local authorities of the apartheid era, and how these different entities resulted in a segregated

city not only in terms of who was allowed to live where, but also in terms of the management of space.

In the Government Publications stacks, I was able to examine the copies of the Divisional Council of the Cape meeting minutes from 1984 to 1987, before the authority was dissolved. The library also had access to annual reports from the Divisional Council for 1982–1983, 1984–1985, and 1985–1986, which presented information quite differently to the meeting minutes – the latter of which were not for public presentation, whereas the former were prepared for a different ‘data public’ (Ruppert, Isin, and Bigo 2017).

An alternative resource to consult were the annual City of Cape Town City Engineer reports, which reported on the various infrastructural commitments undertaken by the then White Local Authority. Like the annual reports, these documents were also written as engagements with the public and were useful to demonstrate the acknowledged City-wide challenges of housing backlogs. There were available from 1982–1989. Also consulted was a small collection of records from the Regional Services Council of the Western Cape, which succeeded the Divisional Council of the Cape. In addition, there were patchy records from the city’s seven municipal entities of the immediate post-apartheid period, which gave me some insights into the administration of housing allocation in this moment of change towards a consolidated local government, when the housing application data were still being amalgamated and redivided into the new local government configurations, and the integration and streamlining of housing allocation policy across these different municipalities was debated.

A further archive that I hoped to consult resided at the National Library of South Africa. Unfortunately, upon approaching the reading desk to request access to their records, I was informed that they were in the process of being moved and were not available for inspection. The timeline of this unavailability was unclear. However, on closer inspection, many of the non-

governmental reports and discussion documents that I had hoped to examine were available through UCT's library network, with both the African Studies and Built Environment libraries holding valuable documents for my research. The Western Cape Archives and Records Service, which holds municipal records, provided further insights into City of Cape Town processes around housing.

An obvious omission in the archives across these various institutional bodies was for the areas previously managed as Black Local Authorities. Very few records existed for these areas in relation to housing allocation, with the exception of the odd oblique reference. To (partially) address this gap, I turned to published theses to better understand the local government configurations of the 1980s era, and in particular how housing allocation took place in Black Local Authorities.

Zweig's (2005) thesis provided a detailed account of housing allocation in Ikapa, one of the BLAs in Cape Town, which she had written through interviews and the use of archival materials. Zweig notes in her thesis that these local authority records were due to be destroyed, because they were considered "ostensibly trivial and unimportant", and therefore did not warrant the "critical archival space" (Zweig 2005: 10). Fortunately, Zweig's research was comprehensive, and I could draw on her work to better understand housing allocation practices in these areas.



Figure 3.2 UCT's Government Publications library stacks

The archival research component was overwhelming and sometimes also frustrating, with huge amounts of information that I did not necessarily want, and a lot of digging through this metaphorical haystack to first figure out what I wanted, and then to find it. It was a process that helped me to figure out the bounds of my research focus, sharpened by a looming presentation of my research-in-progress at a PhD workshop organised by my supervisor. For this event, I was forced to write a narrative version of my findings, and I worked hard to piece together the story

of the development of the database, from the waiting lists from the mid-1980s to present. This was an early version of what would become Chapter 5.

From writing this working document, and trying to trace my way through the archival research, the complexity and vastness of Cape Town's former institutional terrain in relation to housing became apparent, with 61 local authorities operating across the city alone in the 1980s. It soon became apparent that developing an understanding of housing allocation across all of these, as well as the institutional configurations that preceded them, was beyond the scope of this research – the point was not to provide an overview of housing allocation across Cape Town over a 30 year period, but rather that I wanted to understand the housing database as it functions today, and to do that, needed to trace its development back through the previous tools of allocation. This became clearer when I stumbled across the makings of the first single waiting list, the precursor to the database, in minutes from the South Peninsula Municipality in 1998. These minutes included analysis of the weighting of various criteria for allocation decisions. This attention to the minutiae of policy drafts later prompted a textual analysis of the current housing application form, and a tracing of how the information it requires of applicants becomes the data held within the database.

Once I had exhausted the state's documentation on matters of housing allocation, and reports and documents compiled by research units working in the field, I turned to newspaper articles to better understand the ways in which housing allocation surfaced in the media.

In the media: Slivers of contestation

Consulting media sources of information offers a counterpoint to the institutional records of events or recollections from respondents. I examined popular media published between 1983 and the present, searching for articles relating to housing allocation and the housing database.

Here, Sabinet's SA Media database provided an invaluable source of material, yielding thousands of newspaper articles loosely related to housing allocation in Cape Town.

This process was intimidating to approach – my searches either yielded virtually no results, or thousands that I would need to sift through in the vague hope that it would generate something interesting about the development of the housing database. This hunt through the newspaper articles turned out to be as crucial as the preceding archival research. I gained a sense of debates in the housing allocation field across Cape Town, as well as the ways in which national policy shifts were reflected at the local level, written in a way that reflected beyond the institutional architecture that had framed the archival research. Most apparent in this media search were the contestations in housing allocation, the less-than-subtle accusations of corrupt officials and processes. The contestations that implicated the state would become invaluable for understanding the state's imperatives when designing the database.

Media search 14 Nov 2017

'housing + waiting lists' + 'Cape Town' 1984-2017

1980s/ back years bring waiting list	4 Dec 2012	Cape Times	21 years and Taddy is back on the waiting list	2 Aug 2009	Sunday Argus
Seek to be we for names, officials urged	31 March 2005	Cape Times	condition of list: system, state intervention	3 July 1998	Cape Argus
Govt housing policy needs overhaul, deon PA	5 May 2005	Citypress	Reserve family market into state	8 Aug 2001	Cape Argus
City's housing list years out of date	7 March 2005	Cape Argus	housing market plan to stamp out queue creep	2 Aug 2006	Cape Times
Housing list to be updated as welfare faces	5 May 2005	Cape Argus	DA rejects housing figures for election	4 Nov 2003	Cape Argus
South plan new fire	12 Sept 2007	Sunday Argus	Call on city to stop election issues	12 Dec 2005	Cape Argus
Fire on the Victoria jump housing queue	15 Feb 2005	Cape Argus	How it was planned for housing crisis	7 Nov 1997	Cape Argus
Fire on the Victoria jump housing queue	15 Feb 2005	Cape Argus	less than 2% of list will get a proper place	25 Sept 2005	Sunday Argus
City's housing list will cause fire housing list	25 Nov 2009	Cape Times	Groups mustering on anarchic housing waiting list	24 Feb 2009	Cape Times
New housing backlog figures shock Mayor	2 August 2006	Cape Argus	Thousands wait: city to housing cash by meeting	28 Sept 2011	Sunday Argus
Local take now our housing list	21 July 1998	Cape Argus	Housing for poor needs a total overhaul	26 April 1999	The Argus
Small families lose out under housing policy	26 Sept 2005	Star	Waders may be pushed to bottom of the	28 Aug 2009	Cape Times
Private denies race claim	3 March 2008	Cape Times	City housing tax bomb *NB for APF	25 Feb 1998	Cape Times
Joe Storr empties remaining from list	20 Sept 2007	Mail & Guardian	Point pay to be put in the, warns MEd	10 Sept 1994	Weekend
MEd's policy on housing delay had mixed impact	18 Feb 2005	Cape Times	Housing list fails to get off the ground	1 June 2009	Cape Times
Legislation for housing waiting list a huge success	15 Feb 2006	Cape Times	The housing crisis must end	11 June 2009	Cape Times
Housing for all essential	9 August 2009	Sunday Argus	For us poor - housing crisis is not ending	20 Oct 1997	Cape Times
Hope on housing list will get bank deal, says Zille	7 June 2007	Cape Argus	No end in sight to housing crisis	1 Sept 2011	Cape Times
Hours for public scandal hits city	7 August 2001	Cape Argus	City aims to high cost after 60 years	12 Dec 2005	Cape Times
DA alleges ANC uses for 'youngster bank'	15 Feb 2006	Cape Argus	Waiting list fails to get off the ground	2 Oct 2011	Sunday Argus
Company dean on vexed housing list	10 Dec 2008	Cape Argus	The housing crisis must end	24 Feb 2005	Mail & Guardian
DA proposes houses to those who've been waiting	2 Feb 2006	Cape Times	For us poor - housing crisis is not ending	5 Feb 1997	The Argus
Under city housing policy many cases remain	7 March 2005	Cape Times	No end in sight to housing crisis	13 Sept 2005	Cape Times
and reasons behind housing project 7 months old	12 June 2009	Cape Times	City aims to high cost after 60 years	11 May 2005	Business Day
City's housing firm gets building list used	27 Oct 1999	Cape Argus	Waiting list fails to get off the ground	1 Feb 2007	Cape Times
Under house firm meddling	4 March 2005	Cape Times	The housing crisis must end	20 March 2008	Cape Times
Officials meet to discuss housing list in Deff	21 Oct 1997	Cape Argus	For us poor - housing crisis is not ending	7 Feb 2006	Cape Times
City crisis as list shows 40000 need houses	23 August 2006	Cape Argus	No end in sight to housing crisis	4 Nov 1995	The Argus
Houses bring joy after years of waiting	9 Oct 2008	Cape Argus			

Figure 3.3 My notes on newspaper articles downloaded from Sabinet SA Media

Like in the archival research, I read and catalogued these many newspaper articles according to broad themes of interest and the dates of publication, making notes of the key debates outlined in these articles, which would be complementary to the themes that arose from the institutional archives and interviews. I would supplement these records with more contemporary newspaper articles during the process of researching and later writing the thesis. Keeping an eye on debates about the housing database and policy revisions in the media helped me to follow matters arising around its maintenance. Having a sense of the broad debates in housing allocation, and to a lesser extent, the database, I was better equipped to begin interviews once the permission from the City was granted.

Qualitative interviews with designers and decision-makers

My first interview that was directly related to the database was with a former official of the City of Cape Town and the Provincial Government of the Western Cape. This was a contact made through one of my colleagues. Receiving his response to my email requesting a meeting was an exciting moment in what had otherwise been a fairly difficult research process. In his reply, he provided some background to his experience with the database, and in so doing, I was furnished with more information on the development of database than I had managed to find throughout the research process thus far. A long-standing civil servant, this official had experienced the changes in local government in person and had been key in the process of navigating the standardisation of housing allocation tools. Our meeting was enlightening, and he became my most important respondent in this process, his interview forming the basis of what I knew about the database: its evolution from the previous allocation tools, the types of data held within it, and the extent of the work required to ensure that the database functions as it should. He made some recommendations for who else I ought to interview, and some of these overlapped with names already suggested by colleagues.

Once I had permission from the City, I approached an official who worked on housing allocation and policy development. She was a critical entry point into the City and put me in touch with her colleagues who worked more closely on the database. As her interest was on policy development, she could speak to the challenges of housing allocation policy and the difficulties of ensuring principles of fairness in practice, despite the careful debates around eligibility criteria that precede the approval of shifts in policy. This first interview with a City official made apparent the challenges of researching the database: despite her central role in the development and implementation of allocation policy, she had limited familiarity with the database technology, despite it being the tool through which the policy and its prescripts are implemented. However, this point became a useful thread later – it illustrated the extent to

which the database is securitised, and also highlighted that a very small number of officials actually understand its workings.

This was confirmed in my next interview with a senior official tasked with the management of the database. As a last question, I asked him if I should speak to anyone else, and his reply was no – careful to emphasise that this was not his ego talking, but just that there are very few people who work on the database, and that I had already spoken to all of them (essentially two people). While this was perhaps a slight overstatement, I took his point that the database and the data within it is limited to only those with clearance, a small number because of the personal and private nature of the data held within it, and the political implications if the data were tampered with or breached in any way.

Later, when I was trying to understand the siting of the database in the City, I interviewed a long-standing neighbourhood housing office official. This dynamic, straight-talking woman had worked in multiple housing offices across the city for all her working life. As the interface between citizens and the state, her role is hands-on, and she reflected this with a detailed knowledge of the challenges of housing across neighbourhoods. Her insights demonstrated the challenges of fielding housing application forms in a neighbourhood context where council housing rental stock is rarely re-allocated, and there are limited opportunities for new housing developments in the pipeline.

Shifting to the Province, another interview with an official set the scene for understanding the embedded nature of the City's database, and the ways in which it interacts at the regional and national scales. This official, deeply invested in processes of policy standardisation for fair allocation across the Province, could equally reflect on the importance of the data held within the database, although his interest was at the provincial scale. This interview provided a sense

of the significance of Cape Town's database in its own right and in terms of the development of the Province's database.

Other interviews supplemented the data generated from those outlined above. One with a former official who had worked as a housing project manager, who could talk to the challenges of working in the field of housing delivery where there is limited delivery taking place. Another with an NGO-based researcher involved in the practice of housing delivery. He helped me to understand what my focus was and was not in this research. Two interviews with academics, one a former NGO-based researcher, who helped me to figure out institutional boundaries and overlaps, and the other engaged in processes of policy revision at the Provincial level, and therefore in tune with the actors and debates in the housing allocation realm. In addition, I spoke with a researcher who had examined processes of housing allocation in Cape Town during an earlier period of interest. She pointed me in the right directions for archival information, and also was a useful sounding board for what I thought might be my broad thesis argument at this early stage of research.

These interviews took place across the city. From the lounge of the former official, where he cleans and maintains the data; to coffee shops around the Southern Suburbs and the city centre to talk about the challenges of housing allocation in the past and in the present; one in the bureaucratic space of the Civic Centre, one of the main office complexes for the City of Cape Town, my meeting taking place many floors above the hubbub of everyday City administration. Another took place in the Northern Suburbs, where I was ushered through the security door of the public housing information office, past housing applicants making enquiries about their status on the 'waiting list', and into the office space where most the work on the database takes place. And finally, in a neighbourhood housing office, which, I was later informed, had witnessed a gang shootout across the parking lot just the week before. Each of these interviews provided

some insight into the database, the processes that formed it, the work that sustains it, and the social imperative that drives its use.

Each interview was conducted in an open-ended and conversational manner. When possible and appropriate, I recorded these interviews for later transcription. Each respondent was briefed on the intention of the research and was asked to provide consent for the interview material to be used for this research.

Integrating the database and its empirical pieces

The collation of data for this research happened slowly and iteratively, allowing me to address when possible arising gaps or additional questions of clarification. I analysed my data a number of times along the journey of writing this thesis, starting with broad thematic analysis as I figured out the direction the research was taking, and later re-coding for more specific themes that emerged from the research. Throughout my PhD process, the ethics of the research process were at the forefront of consideration. While the database may have appeared to be a 'boring thing', a technical tool devoid of too much emotional attachment, it sits within a complex, contested and politicised terrain of housing allocation. Not wanting this research to come across as an expose of the state's workings (or the lack thereof), I was always careful to couch my findings in nuanced contextual specificity, to emphasise the partiality and the limits of my findings. Having sifted through what I would come to consider as the history of the database, the shifts in policy over time, and the long-standing process of making and re-imagining data for purposes of fair allocation practices in the Cape's context that I outline in the following chapters, I wanted to show the considerable bureaucratic work that is entailed in the production of the database, a tool that is all too easily side-lined because it is not used as often as intended. Instead of focussing on the problems in housing allocation, I wanted to tell the ethnography of the database as a state tool, the nitty-gritty of its production.

This ethnography was produced through iterative writing approaches. In relation to the archival research, I collated what I considered could become valuable data for my research in electronic and physical files and created a handwritten log of these materials with notes on the broad themes of interest contained in each (see Figure 3.1). I did the same with the Sabinet SA Media search, similarly handwriting a record of each article of interest and annotating this log with the crux of each article (Figure 3.3).

With regards to the interviews, I conducted all of these myself, and later transcribed those that I had recorded myself too, where I started the process of identifying themes and early analysis as I was typing. I could also identify missed question opportunities and other gaps, which I then was sure to include in following interviews. Other interviews that were not recorded were more exploratory in style and guided the interview trajectory and thematic analysis of subsequent interviews. Following the transcription, I coded the interviews thematically. The process of coding took place at several points in the writing up phase of this thesis. I drafted initial broad strokes documents on themes, and later recoded the research material iteratively, often when inspired by reading new material and seeing my research in different ways.

Similar inspiration came from feedback from colleagues and peers. I presented my research at several conferences and workshops. Each of these occasions offered new ways of understanding what I was researching, and often new ways of articulating what I was *not* doing as part of this PhD. These encounters with audiences both familiar and less so with the local context enabled me to figure out how to talk about data and databases in the context of housing, where the dominant narrative is typically citizen-centred, with roll-out a key concern. The conversations following these presentations helped me to realise the scope of this research, and my entry point into the contested field of housing allocation.

Conclusion

This chapter has reflected on the methodology that I used to examine the housing database, a critical but unexamined tool used by the state to allocate housing. Framed as a tool of the state, the database appears to be neutral and apolitical, a predictable technology for formulaic decision-making in a field of contested allocation decisions. This apparent neutrality of the database renders it invisible in a terrain of considerably more interesting and exciting processes and decisions to examine from a research perspective. Yet, what I have shown in this chapter, and continue to demonstrate in the following empirical chapters, is that the database cannot simply be characterised as an invisible tool in the state's quest for fair housing allocation decision-making. In this chapter, I have explained not only why it is important to examine tools like the database that facilitate day-to-day state practice, but also why projects that surface the power inherent within these tools are critical in South Africa, with its history of overtly racist policies and practices.

In the following three empirical chapters, I trace, through archival research, first the development of fair allocation policy, told here through an overview of the shifting institutional configurations, from apartheid-era institutions to the process of consolidating local government, and later the integration of local government into a single metropolitan municipality, all with their own versions of allocation policies that required re-imagination – as well as a housing allocation tool – to integrate a city fragmented by race and space. This chapter stems from a need to understand the policy context that demanded the development of the database for fair housing allocation decision-making.

Second, I examine, based on piecing together of interview material and information garnered from local government meeting minutes, the development of the database as the tool through which the state implements fair allocation decision-making following the housing policy's

criteria of eligibility. This chapter charts too the technological developments that enabled data-driven decision-making, from early shifts from handwritten records to computerised records, and later from spreadsheets and lists to an integrated system that operates across the city. This chapter reflects, through newspaper articles and other public debates, how the database was shaped through dominant narratives in public discourse. Here, I chart the state's shift from dominant narratives of first-come, first-served allocation techniques, to better understand the database's functioning as a technological intervention in what was a contested practice of queue-jumping.

Third, largely through interview material, I make visible the data held within the database and the state's work to imagine, produce, clean, maintain and process the data so as to be able to make decisions that are fair and transparent. This chapter documents this state work – the importing, cleaning, standardising and making uniform the data from 'legacy systems' into the database – the considerable investment into producing and sustaining a technology like the database, that appears to be technical but is shaped by officials who work hard to maintain its seamless functionality.

Together, these empirical chapters demonstrate how the database is more complex than the technical, seemingly apolitical tool, as it is sometimes framed. Paying attention to the complexities of the database's form and function, I make visible the state's commitment to the production of this tool.

Chapter 4: Fragmented to integrated: The making of fair allocation policy

Introduction

This chapter traces the development of housing allocation policy from the 1980s to the present. Through this period of tumultuous political regime change in South Africa, shifting institutional configurations have required the frequent re-imagining of housing allocation policy across a landscape racially and spatially fragmented.

This chapter begins by documenting the vastly different allocation practices in the various and multiple local government bodies that existed in apartheid Cape Town. I show how these institutions began to approach changes in allocation policy in the late 1980s and show how a discourse of fairness and transparency in housing allocation enters debate in the early 1990s, when apartheid ideologies, institutions and policies were in the process of being abolished and reconfigured to democratic practices.

I then examine in detail the negotiations of a Local Metropolitan Council's process of developing housing allocation policy. This section demonstrates the complexity of making sense of existing housing allocation practices across a newly configured municipal entity, where legacies of the previous institutions' housing administration shape the allocation practice within this area. This examination of the negotiations of housing policy development, and in turn the tools through which to implement this policy, demonstrate how the state has grappled with the merits of the waiting lists, the imperative for integrating historical registers, undocumented as a result of racial exclusion cases of housing need. This section highlights the state's juggling of existing administration of housing allocation, pressing political and public investment with new democratic social imperatives and the associated definitions of fairness.

Finally, I examine the process of integrating local government and the development of a single housing policy to be applied across the Cape metropolitan area. Here, I show how the integrated policy has shifted between 2004 and the present period, tracing through this the alignment of local policy with national imperatives and the associated shifts in discourse and practice. I finish by showing how the state's move towards integrated housing policy necessitated an integrated tool for ensuring fair decisions through the housing demand data.

Fragmented and differentiated: Housing allocation policies across the city in the 1980s

Cape Town is a useful example of the complexity of housing allocation processes in the apartheid period. In 1983, there were 61 local authorities across Cape Town (Watson 2002: 73). The 61 local bodies were comprised of 19 white local authorities; “six local councils... [which] covered semi-rural (white) parts of the metropolitan areas and fell directly under the Regional Services Council” (Watson 2002: 78); seven Black Local Authorities; and 29 coloured Management Committees (Watson 2002: 79) (see Figures 4.1 and 5.1 for a map of these areas). The different categories of local authorities had different capacities and capabilities, from political mandates to financial capabilities, which affected their ability to house their constituencies. In addition, the types of accommodation available differed racially, from hostels to rental housing, single rooms to more spacious houses, each required a different way of organising how applicants waited for homes, and how any potential homes were allocated.

Local government transition in Cape Town, 1994–2001

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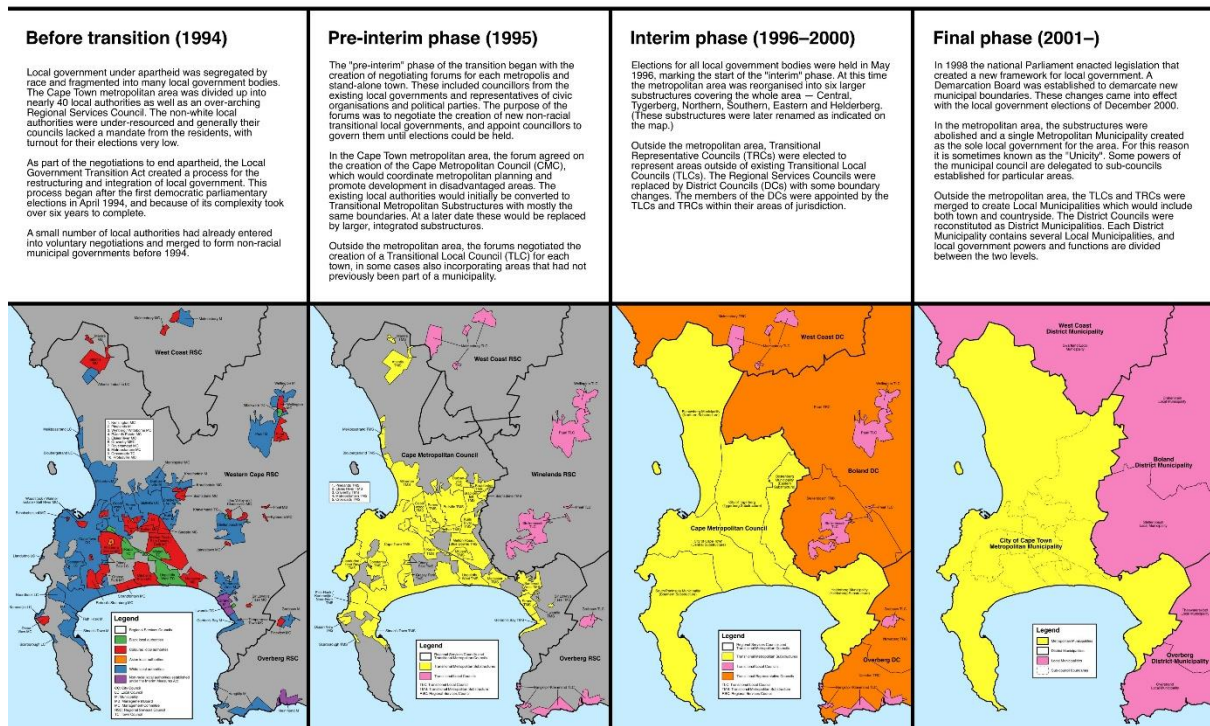


Figure 4.1 Cape Town's local government transition, from many local authorities in the 1980s, to 2001 (Map by Adrian Frith, accessed 11 May 2022)

The conceptualisation and running of housing waiting lists for housing allocation was the task of the local authorities, entities that Watson described as a cornerstone of late-apartheid policy, because they “embod[ied] the principle that different racial groups should ‘govern themselves’ and [in effect] support[ed] the idea of spatially segregated residential areas” (2002: 73). As local authorities were racially configured, so too were their waiting lists. And although Black Local Authorities had been introduced to “concede some measure of power to local African communities in governing their own areas” (Zweig 2005: 2) and theoretically, had the same level of power as the other authorities in their own areas, in reality, they were constrained by a lack of income as a result of their poor tax base (Black Sash 1988: 9). As a result, many of the local authority entities had limited or no funds for providing housing, which meant that if waiting lists existed in these areas, these were most likely only in name.

Access to cities during the apartheid era was differential, depending on a variety of measures intended to perpetuate segregated development. This differential access was implemented, in part, by state housing allocation policies, managed at the local authority (or neighbourhood) level. Housing allocation methodologies were therefore multiple. The most common methodology for allocating housing, at least in Cape Town, was the first-come, first-served method, which placed time spent waiting on the list as the most important factor in determining eligibility. However, other methods of housing allocation also existed, with many informal allocation methodologies at work behind the scenes too.

Zweig (2005; Oldfield and Zweig 2010) documents housing allocation practices in Cape Town in the 1980s, when Black Local Authorities were established to govern black areas in cities. The structure and functioning of the Black Local Authorities echoed those of white local authorities. Formal institutions with councillors and an election system, they might have been under-resourced, but they did have some powers, in the areas that Oldfield and Zweig (2010: 139) describe as the “most unpopular aspects of government policy”. Yet a significant difference between the different authorities lies in the lack of financial support for housing development and other infrastructure and amenities.

Zweig’s research reflects on the ways in which housing allocation in practice differed from the national government’s allocation prescriptions, through the adaptation of “regulations procedurally and substantively” (2005: 141). These changes in allocation practice were ad-hoc, with the possibility of housing applicants purchasing houses from corrupt officials and the reallocation of housing after the death of the formal occupier to another family member (rather than the house being reallocated to the next eligible person on the waiting list, which is what the policy would have required). But it also demonstrates the extent to which housing allocation policy was a challenging task to undertake given what Zweig (2005: 100) describes as the “daily confusion of rules and paperwork” that plagued officials working for the BLA.

In between these different ways of allocating were many other informal practices, including unprocedural practice by officials, who entertained bribes from hopeful housing applicants in exchange for preferential treatment in the allocation of houses. Although such practices of fraud might have been common across the city, Zweig is careful to show how officials in Black Local Authority neighbourhoods were exasperated by the “system fraught with inadequate resources and unrealistic policies and unfair practices” (2005: 141). Such challenges were not limited to Black Local Authorities: in neighbourhoods across the city, housing allocation was beleaguered by claims of fraud, from nepotistic practices to corruption. Despite allegations of improper housing allocation from applicants and other officials, housing allocation continued to take place, and waiting for housing from the state, however it was allocated, remained a sensible thing for applicants to do in the absence of viable alternatives for accommodation.

By 1986, the strict controls that dictated who could live in cities were slowly loosening, largely thanks to the repeal of the pass laws and the weakening of the apartheid segregation ideology in the wake of widespread civic protest action and international boycotts.

A report to the Divisional Council of the Cape’s Housing Committee, a local authority that was an umbrella administrative body for the more peripheral metropolitan areas, in September 1986, demonstrates a request for shifting responsibility from the City of Cape Town, a White Local Authority, to the Management Committees, which governed areas classified as Coloured. The report documents a request by Management Committees to become directly involved in housing allocation in these areas. The report notes the request regarding the allocation of “existing dwellings which become vacant because of either action taken by Council or, alternatively, through tenants electing to vacate the properties of their own accord” (Divisional Council of the Cape 1986). The report points out the differences between what was written in policy and the housing allocation practice, stating that

the allocation of dwellings is in fact a prescribed function and responsibility of Management Committees... However, Council as a matter of policy, has always retained the responsibility of this function because the general waiting list has always been kept strictly in date order, irrespective of the applicant's place of residence.

Divisional Council of the Cape (1986b)

The request by the Management Committees was successful, with the report concluding with the recommendation that the "Council acceded to the Management Committees' request to allocate all relets in respect of the waiting list for their individual areas of jurisdiction". In so doing, the policy outlined in this recommendation report noted that the re-allocation of a council rental house needed to be undertaken "by resolution of a properly constituted meeting of the Management Committee and that no individual Management Committee member be authorised to make any allocation on an ad-hoc basis"; that the re-lets be made "strictly in accordance with the sequence of the waiting list". Finally, the report warns that "Should the Management Committee fail to comply... Council shall retain the right to allocate any relet which becomes available" (Divisional Council of the Cape 1986). This illustration of a shift in practice, rather than policy, of rental housing allocations, required the commitment of the local authority to ensuring compliance with the housing policy and its provisos regarding the order in which housing units would be allocated. This is one example of the housing allocation practice shifting in formerly coloured areas in the late apartheid period. It also highlights the state's insistence that the Management Committees adhere to the allocation policy requirements.

The complexity and confusion of housing allocation policy and practice becomes apparent when considering the multiple segregated neighbourhoods of Cape Town, some formerly racially classified white governed by White Local Authorities, others segregated African and governed by Black Local Authorities, other areas racially classified Indian and Coloured administered by the Divisional Council of the Cape, part of provincial government (Watson 2002; Turok 2001;

Cook 1991). A product of apartheid segregation and long histories of fragmented local government, the scale of the challenge of housing allocation policy generated neighbourhood-specific lists and vastly differentiated and racially segregated forms of housing access and housing administration. The implications of these different forms of housing access and administration are unpacked in the following section, which turns to the post-apartheid aspiration for integrated housing policy across the city.

Aspiration for an integrated housing allocation policy in the 1990s

Clearly this vast array of neighbourhood and local authority specific approaches to housing allocation was not sustainable or sensible for the post-apartheid period. By 1990, the City of Cape Town Planners' Report was published which documented the regime, institutional and political shifts afoot. The report, titled 'A City in Transition', noted the challenges faced by South African cities generally:

South African cities face great challenges for several reasons: provision for the shelter, employment and other settlement needs of the country's urbanising people has been severely retarded by past policies which rejected black urban permanence; changes in the physical, economic, and most significantly, political structures of our cities represent not simply expansions or extensions of current structures, but a total 'rethink'; and cities are having to deal with the challenges of urban growth and change at the same time that the national political framework is being re-negotiated.

City of Cape Town (1989/90: 1)

The significance of the changes underfoot at the local government level echoed those occurring nationally, with increased pressure through boycotts and protest action both locally and internationally. In terms of housing provision, the report outlines the challenges in addressing housing need in the context where the provision of housing for the black population, those

classified then both 'coloured' and 'African,' was not previously the responsibility of municipalities, run instead, respectively, by District Councils in areas segregated coloured and by Black Local Authorities in areas segregated African, areas of the city which were governed by the apartheid-era central state, located afar spatially, in Pretoria, and thus distanced from the challenges of multiple allocation policies across the fragmented city. The report notes that "The provision of low-cost housing is dependent upon two factors, suitable housing land and low interest finance". The report notes further that:

Although the City should be building at least 7 000 dwellings annually for its poorer coloured citizens, it has averaged only about 1 000 a year for the past six years. This situation has inevitably led to a massive increase in overcrowding in existing residential areas, but within the existing houses and in informal back yard housing.

(City of Cape Town 1989/90: 20)

The backlog noted in this report would only increase as a result of the increasing formal expressions of housing need in cities once access was no longer limited by racist laws and segregation. This backlog also was an indicator of slow housing development and thus delivery processes as a result of limited financial support for housing developments from the central government, and thus a need for the local authorities to rely on private sector partnerships to build houses (City of Cape Town 1988: 15).

By 1993 when political reform was well on its way towards the first democratic elections, the City of Cape Town had compiled a proposed housing policy framework document. This document noted that "No coherent housing policy exists at present within Council" (Cape Town City Council 1993: 3), and attributed the lack of coherent policy for the city to the fragmented metropolitan government, noting that "the fragmentation and duplication of the housing delivery process, is probably both ineffective and cost inefficient" (Cape Town City Council 1993: 10).

Motivating for a shift in policy practice, the same report asserts that:

...the allocation of housing to homeless families and individuals must be equitable and fair. The housing allocation process must also be transparent and subject to continuous review. Housing allocation must be cognisant of existing local authorities' waiting lists.

Cape Town City Council (1993: 11)

In the archival material surveyed, this is the first mention of the need for housing allocation to be equitable and fair, and while these terms are not defined in the report, the application of equity and fairness in relation to the city metropole as a whole is important as an early indicator of Cape Town's commitment to democratic principles. Similarly, the call for transparency is also noteworthy, as is the request for cognisance of the existing housing waiting lists, which were, as Chapter 5 illustrates, neither fair nor transparent. Although this proposed housing policy framework document presents little detail on the realisation of a just policy for housing allocation, the discussion was continued by academics and non-governmental organisations, who examined proposed housing policy in relation to the needs of the diverse population which policy was intended to serve.

In a report published by the Urban Problems Research Unit based at the University of Cape Town, Smit (1994: 18) noted that a significant challenge in housing policy was that there were "major misconceptions upon which [the policies] are based". Considering the state's shift from the allocation of rental stock to the allocation of new-built homes for eligible citizens, the misconceptions around which new housing policies were based included "the assumptions that all households are standardised nuclear families... and that a significant number of households migrate from rural to urban areas with the intention of owning a home and permanently remaining in the urban areas" (p. 18). He showed that these assumptions were problematic because they pre-supposed particular modes of urban dwelling. The effects of these

assumptions, he wrote, were that “it [wa]s clearly unrealistic to expect that standardised selection and allocation criteria and the provision of standardised units can take care of what are often diverse needs” (Smit 1994: 19).

Further assumptions regarding housing policy are raised in an additional working paper by the Urban Problems Research Unit. While not focussing on housing allocation specifically, the report outlined the challenges in the context of housing delivery in the metropolitan area. Behrens, Watson, and Wilkinson (1998) expanded upon Smit’s housing policy assumptions. Further assumptions included the acceptability of housing located on peripheral land. They noted too that the housing policy that assumed a cut-off of state assistance after R3500 income, was problematic, suggesting that “For those who earn too much to qualify for state assistance but not enough to enter the private sector housing market, housing options are very limited” (Behrens, Watson, and Wilkinson 1998: 29). Working on the state’s assumptions upon which the proposed housing policy was based, the authors noted that:

For at least some of the families who attempt to fit the model of shelter on offer, the outcome is a stretched budget and perhaps a sacrifice of other basic necessities, inappropriately small accommodation which they cannot afford to expand and often a location on the city periphery, far from work and other opportunities.

Behrens et al. (1998: 29-30)

While the desire for a housing policy that was specific and also took into account the different needs for housing that existed across the city, this level of detail would not make its way into policy. However, in terms of housing allocation policy, municipalities expressed interest in establishing housing need based upon more criteria than simply time spent waiting on the waiting list. These criteria would be debated in the Metropolitan Housing Forum in relation to the allocation of new build houses, but their implementation persisted as municipal-specific decisions.

In the late 1990s, there were seven municipalities across what is now the metropolitan area of Cape Town. To share the nuance and specificity of housing allocation debates at this micro-municipal scale, and their entanglement in policy debate and injunctions at other scales of government, in the section below I examine the negotiation of shifting housing allocation policy and practice in one of these seven municipalities, the South Peninsula Municipality. Archival material documents a complex and compelling illustration of the development of housing allocation policy and the tools through which the policy was implemented in the South Peninsula Municipality. Here, legacies of previous iterations of housing allocation policy and its tools, the implications of frequently shifting municipal boundaries, and the internal municipality debates around the allocation of housing in this Metropolitan Local Council illustrates the considerable negotiations of changing policy and practice.

In practice at the micro scale: Grappling with complexity

In terms of housing allocation, by 1997, the seven newly-constituted municipalities that comprised the broader Cape Town metropolitan area, were tasked with deciding how best to go about allocating any houses that did become available. One of these Councils, the South Peninsula Municipality, documented in meeting minutes the process of agreeing a new housing allocation policy that was fair and transparent.³

In meeting minutes from 1997, the South Peninsula Municipality reports that:

One of the urgent tasks which the [Metropolitan Housing] Forum is currently busy with is the controversial issue of integrating the Housing Waiting List in order to equitably accommodate those members of the population who through past policies were denied access to the Waiting List.

³ While the other municipalities were most likely similarly engaged in complex negotiations, these were not as substantially documented as they were for the South Peninsula Municipality, hence the focus here on this municipality, rather than the others.

South Peninsula Municipality (1997: 99)

This is an example of the state's work on integrating housing demand data across the city in order to re-align racist allocation policies of the past with equitable practices of allocation in the post-apartheid period. The re-interpretation of the city's housing waiting list is the focus of significant attention in this particular report, and points to the complexity for housing delivery wrought by the changes in political regime and shifts in institutional mandates and capacities. The report outlines the background of the housing waiting list, noting that:

Historically the waiting lists which were inherited from the [Cape Town Municipality] and [Cape Metropolitan Council] catered only for the coloured, white and indian [sic] population groups. Housing for blacks was the responsibility of the Provincial Administration. Since the repeal of the Group Areas Act and the dissolution of Province as a local authority for former black areas, local authorities may no longer be selective in terms of the provision of housing.

South Peninsula Municipality (1998: 109)

The opening up of the waiting lists to those previously denied access to the list meant that the demand for housing in Cape Town increased significantly. The meeting minutes reported that the Cape Metropolitan Council:

maintained a single computerised data base which facilitated the generation of separate lists for different transitional metropolitan substructures... In July 1991, the CMC resolved to close its waiting list in view of the lack of housing development during that period. Supplementary registers, containing limited information, were however established in respect of persons who enquired about accommodation after the waiting list had been closed.

South Peninsula Municipality (1998: 108)

The report notes too that the Cape Town municipality also “closed its waiting list in 1987 for the same reasons as the CMC. Similarly, they also created a second waiting list after this date” (p. 109). The proliferation of various waiting lists, which had been unevenly accessible to those in housing need, presents a convincing rationale for why housing allocation policy needed to be reformulated in a more equitable way – and why the waiting lists as the instruments through which housing allocation was done, had to be reconsidered.

Meeting minutes, accompanied by an overview of housing allocation in practice across three areas within the South Peninsula Municipality, explained further why the housing waiting lists needed to be integrated.

During the pre-interim phase of the Local Government Transitional Process, these areas [Hout Bay, Grassy Park and Ocean View] fell under the jurisdiction of separate transitional metropolitan substructures and each transitional metropolitan substructure adopted their own policies (criteria) regarding the allocation of their housing units. Although a uniform approach was supported, minor variations were adopted by the different councils.

South Peninsula Municipality (1998: 107)

The political and bureaucratic imperative to adopt a new, integrated housing allocation policy was led, in part, by the need for a fair and equitable process, which was not supported by the existing status quo, where the allocation criteria policies of the different metropolitan substructures remained “binding” and continued to be implemented despite the different governance of the areas (South Peninsula Municipality 1998: 107). The complexity of dealing with various allocation criteria within a single MLC was illustrated through the examples of Grassy Park, Hout Bay, and Ocean View.

In Hout Bay, allocation of housing related to the re-letting of council housing stock, and in this case, the report notes that preference was given to “existing tenants who, as result of their changed housing needs, require[d] larger accommodation... **their length of original tenancy** determines the order of priority for assistance” (p. 107, bold text in original). The smaller housing units that were then vacated would be allocated to “General Waiting List applicants in date of application order” (p. 107). In Grassy Park, the policy was similar, although the report notes that “Very few units have become available in Grassy Park in the past couple of years, either as a result of internal transfers to existing family members living in the units or because of the high incidence of illegal occupations” (p. 107). Regardless, the minutes noted that should any allocations take place, this was undertaken through “date of application order and not in accordance with the length of tenancy” (p. 107). The report noted that the same policy adopted for Grassy Park applied to Ocean View, although “less [sic] problems are being experienced in implementing the policy in [Grassy Park]” (p. 108). In other areas within the South Peninsula Municipality, allocations were “done in date of application order. Every fourth vacancy that occur[ed] is allocated to an applicant – in date order – with a medical problem” (p. 108).

This example of the different housing allocation policies within a single of the local metropolitan councils gives an insight into the complexities of managing housing allocation within a single area, where legacies of previous policies and instruments were still in existence. Extrapolating such complicated arrangements across the metropole, it is unsurprising that the Cape Metropolitan Housing and Urbanisation Forum called for a single housing allocation policy for the metropolitan area. Although the meeting minutes note that the agreed upon method of implementation would still however be a “local matter” (South Peninsula Municipality 1997: 99-100), the quest for a single housing policy that would be applicable across the city implied a standardisation in housing allocation practice, even if the implementation would remain at the discretion of the local metropolitan councils.

Standardising housing allocation: From first-come, first-served, to a points system of allocation

Several months later, the matter of integrating the housing waiting lists, while taking into account the historically differential access to the lists, was still on the South Peninsula Municipality Housing Committee's agenda. The minutes report that "the formulation of a metro wide allocation policy [w]as one of its primary tasks" (South Peninsula Municipality 1998: 106).

Intertwined within the call for a single housing policy was the need for an integrated method of establishing housing need. The minutes of this meeting also noted that:

...it is being proposed that the waiting list in its present form be scrapped and replaced with an allocation policy (points system) and metro data base. It must be pointed out that these are merely proposals at this stage and all MLC's [sic] will be fully consulted before a final decision is taken by the Forum.

South Peninsula Municipality (1997: 100)

Rather radically, the report considered the scrapping of the waiting list, described as it was as "nothing more than an instrument of false hope" (South Peninsula Municipality 1998: 109). The report noted that the waiting list had become a contentious topic and highlighted that it was "perceived that it can be abused and manipulated" (p. 109) and that allocating housing in terms of date of application order "fail[ed] to take **need** into consideration" (p. 109, emphasis in original).

The report is one of the few places where the merits of the waiting list are debated. Here, the report deliberates between the public's need for the list, and the bureaucratic challenges in managing the list. It noted that:

Suggestions have been made in the past to scrap the waiting list as it is seen as nothing more than an instrument of false hope given the few houses that become available for

re-allocation each year. It is further perceived that it can be abused and manipulated especially if the new person on the list does not get the next vacant house. On the other hand for those who have either been assisted or are near the top of the list and assistance begins to look like a real possibility, the waiting list is seen in a totally different light. Notwithstanding, the waiting list remains a contentious issue but attempts to have it scrapped are likely to be vehemently opposed, and not only by those persons on the list.

South Peninsula Municipality (1998: 109)

The opposition to the scrapping of the waiting list system for housing allocation is an important point, and the wording implies the political consequences of abandoning a well-entrenched, if complex, differentiated and flawed practice of allocation across the city. The report points out the problematic nature of the state's reliance of the date of application for making allocation decisions.

One of the major flaws in allocating housing in date of application order i.e. on a first come first served basis is that it fails to take need into consideration. As a consequence priority waiting lists need to be established from time to time to deal with specific cases requiring urgent consideration... Priority allocations are invariably subjectively based.

South Peninsula Municipality (1998: 109)

The report recommended considering additional eligibility criteria in order to establish a household's housing need. A points system was proposed as an alternative way of allocating housing. The points system, the report noted, was

designed to provide more objective measurements of housing need... the main advantage of a points system is that it removed the danger of subjective judgement in making allocations and provides accountability.

South Peninsula Municipality (1998: 109-10)

The report qualifies this statement, however, by noting that

too great an emphasis on establishing standardised criteria could lead to a degree of rigidity, unless an element of discretion is retained to allow Council to respond to unusual or exceptional circumstances.

South Peninsula Municipality (1998: 110)

While the report is careful to reflect on the timing of implementing new housing allocation policies and tools, it does note the need to address housing allocation in the municipality while waiting for the Housing Forum to deliberate the policy shifts across the metropole. The meeting minutes reflect the disjuncture between the simultaneous need to deliberate and the need for allocation practices in the meantime:

...in the spirit of co-operative governance, it would be imprudent at this juncture for the [South Peninsula Municipality] to independently develop its own allocation/waiting list policies which may be at variance with that applicable to the rest of the metropolitan area. However, Council is under increasing pressure to accommodate families in dire straits but particularly those with medical problems. The current method of allocation gives the impression that Council is insensitive to the plight of these families.

South Peninsula Municipality (1997: 100)

The municipality was particularly concerned with establishing housing need, given that the first-come, first-served methodology of housing allocation was unfair in the context of unequal access to the waiting lists in the past. Instead of the prevailing first-come, first-served methodology, the proposed housing policy, which was, the report notes, discussed by all of the MLCs, offered three different approaches to housing those on waiting lists. These three allocation tools were put forward in a report to the committee.

The first method of housing allocation related to existing housing rental stock. For allocations in these cases, the date order system would prevail, and the former municipalities' waiting lists would be integrated. Because this would not take into account all those who had been denied access to the waiting lists, a

separate allocation list [would] be created in respect of those persons who ha[d] previously been denied access to the waiting list through past government policies and that the length of stay in the area of jurisdiction of the [South Peninsula Municipality] be taken as their dates of allocation subject to the necessary proof being obtained.

South Peninsula Municipality (1997: 103)

Applicants living within the area of the municipality would be given preference for housing assistance. It was decided too that "allocations from the two lists be on a proportional basis on a two to one ratio and in accordance with area preference" (p. 114), and that "priority allocation for medical reasons be granted and that Council's existing policy in this regard be endorsed, i.e. every 5th vacancy be allocated to an applicant with a chronic medical problem in date order of applications" (p. 114).

For new houses funded through the capital subsidy programme, it was decided that a points system would be operated. In this case, a points system meant that "an aggregate number of points are awarded for various factors be adopted" (p. 115). These factors include the length of work or residence in the area; chronic medical condition; present living conditions (in terms of physical structure of the abode as well as other conditions, such as access to water, electricity, sanitation and overcrowding); income, and adverse conditions (unspecified) (see Figures 4.2 and 4.3).

FACTORS		WEIGHTED RATING		RANKING (whichever is applicable)	TOTAL POINTS
Length of work/residence in SPM area (from date of marriage or age 21 whichever is earlier)		4.6	X X X X	4 = 15 to 20 years or more 3 = 10 to 15 years 2 = 5 to 10 years 1 = 0 to 5 years	
Chronic medical condition		4	X X X X	4 Director of Medical Services will determine priority based on his findings of applicants condition 3 2 1	
Present living conditions (each case to be thoroughly investigated by officials of SPM to confirm status of conditions)	(a) Physical	3.7	X X X	4 = None 3 = Structure 2 = Conventional	
	(b) Other	2.8	X X X X	4 = No water 3 = No sanitation 2 = No electricity 1 = Overcrowding	
Income		3	X X X X	4 = 0 - 800 3 = 801 - 1 500 2 = 1 501 - 2 500 1 = 2 501 - 3 000	
Adverse conditions		4	X X X	4 The merits of each case will determine priority 3 2	

NOTE: Factors have been rated by councillors of the Housing Services Committee on the basis of a five point scale (i.e. 1 being the lowest priority and 5 being the highest). The scores per factor have been combined and divided by the number of councillors involved to obtain the average weight per factor.

Figure 4.2 The South Peninsula Municipality's proposed housing allocation points system (1997)

The functioning of the points system is illustrated in Figure 4.3, which shows how a hypothetical housing applicant's housing need would be established using the conditions as specified in the schedule in Figure 4.2.

The third case where a housing allocation system had to be implemented was in the case of allocations to residents of informal settlements. Here, the proposed policy outlined that "in the event of the provision of formal housing opportunities (i.e. in situ upgrade) preference be given to existing legitimate families permanently living in the particular informal settlement"; "that the identification of beneficiaries be undertaken in consultation with the informal settlement community"; that the beneficiaries qualify in terms of the Housing Subsidy Scheme"; and "that the selection of beneficiaries in respect of any additional housing opportunities provided when

upgrading an informal settlement, (i.e. over and above that provided for the existing families) be on the basis of the points system... and subject to beneficiaries being on the waiting list” (p. 105).

EXAMPLE :

APPLICANT PROFILE			WEIGHTED RATING	X	RANKING	TOTAL POINTS
Length of work/residence in SPM area	10 years		4.6		3	13.8
Chronic medical condition	Terminal illness		4		4	16
Present living conditions	Physical	None	3.7		4	14.8
	Other	No water	2.8		4	11.2
No sanitation		2.8		3	8.4	
No electricity		2.8		2	5.6	
Income	820		3		3	9
Adverse conditions	None		4		0	0
						78.8

Figure 4.3 Establishing a housing applicant's housing need using the points system - an illustration presented by the South Peninsula Municipality (1997)

The challenges of this particular allocation system seem considerable – from how to determine what constitutes a ‘legitimate family’, to the genuine consultation of the informal settlement community (which includes determining how to define ‘community’). The need for informal settlement dwellers to qualify in terms of the Housing Subsidy Scheme is noteworthy in that this requirement is not mentioned in relation to the other cases of housing allocation (either new build allocations or re-lets of council stock).

Thus, housing allocation policy was realigned with what the Councils considered to be a negotiated approach to fairer ways of making allocation decisions in the context of multiple policies and practices. While neither the logics behind the weighting of the means test’s scores, nor how or who had established the criteria by which applicants were evaluated to establish

their housing need, the points system was deemed to be more transparent and fairer than the first-come, first-served method of allocation. Significantly, the date of application was still considered in the weighting of the scores, and so, politically, the 'vehement opposition' envisaged by the scrapping of the lists, was avoided.

The development of the means test was an early example of the housing database as we know it to exist currently and was directly related to the development of a single policy to guide allocation across the metropolitan area. The report notes that:

Although their initial brief was to identify a uniform policy which would address the issues of integrating waiting lists and the method of allocation of housing opportunities, the committee also identified the need for a mechanism whereby Metropolitan Councils could network with each other prior to allocating houses to beneficiaries in order to eliminate dual allocations. It was suggested that the data base be established for this purpose. The database could also be used to establish the extent of the housing need within the Metropole.

South Peninsula Municipality (1998: 117)

The report also noted that "Although this existing allocation system is fraught with problems, a total scrapping of this system would prove unacceptable to those on waiting lists" (p. 118). The points system, also referred to as a means test, was proposed as the successor to the waiting lists. Although the criteria on the means test would remain consistent across the metropole, "Each MLC would attach its own weights to the criteria" (p. 119). The report also notes that the advantages of the metropolitan database would be to: "establish the need for housing in the Metropole; to provide a linkage between various MLC's [sic]; and to serve as a control mechanism so as to eliminate dual allocations" (p. 119). The disadvantages were also outlined and included the "cost implications which would increase depending on the functions it is to

perform; [the database] will have to be maintained on an ongoing basis; [and] there might be more cost-effective ways of establishing the need within the Metropole” (p. 119).

Despite the disadvantages imagined about an integrated database for fair housing allocation decision-making, it was proposed in this report that the establishment of a Metropolitan database be investigated further. The subsequent development of the database is the subject of the following chapter. This section illustrates the complexity of the process of creating policy in that works around significant shifts in political ideology, multiple changes in configuration of local government institutions, and the shifts in technological capabilities for making sense of housing demand in a single municipality. The case of the South Peninsula Municipality shows how processes of allocation were caught up in a narrative of waiting, of first-come, first-served methods of allocating houses in a context where not everyone who needed assistance could express that need through the formal processes due to racial exclusion. Equally, the section demonstrates the political will for new, less contested ways to allocate houses fairly, but also demonstrates the political investment in the time spent waiting by applicants, and the potential protest implications of ‘scrapping the lists’.

The complex realities of managing housing allocation across different institutional bodies, was, not surprisingly, a pressing imperative to consolidate local government, to restructure once again to merge this array of local authorities into a single metropolitan municipality for the Cape Town area. An imperative for efficient governance, in this debate and the processes that shaped it, the creation of a single housing policy was equally crucial, the focus of the discussion that follows.

Integrating local government, integrating housing policy in the 2000s

The intricacies of the process of the housing allocation policy development process in the South Peninsula Municipality echoed the processes experienced in Cape Town's other local councils. The imperative for a consolidated local government (van Donk et al. 2008; Parnell et al. 2002; Khan and Thring 2003) with a single allocation policy was apparent to those working in the field of housing allocation. The imminent institutional reconfiguration into a single metropolitan municipality required the housing departments across the metropolitan area to evaluate their strengths and weaknesses in relation to the administration of housing generally.

The Oostenberg Metropolitan Local Council, another of Cape Town's seven municipalities, published a Housing Strategy in November 2000, which focussed in particular on the strengths and weaknesses of the MLC's housing department in light of the amalgamation with the other MLCs during the creation of the Unicity, the integrated metropolitan municipality that would come into effect in late 2000. The report notes that the creation of the Unicity presented opportunities such as the "more efficient utilisation of resources such as personnel and equipment;... more co-ordinated and spatially integrated strategies; more co-ordinated service delivery (e.g. one policy on matters...); [and] more equitable allocation of resources" (Urban-Econ 2000: 50-51). While the timing of a housing strategy document is strange given that the municipality was about to be integrated into the Unicity, the fact that the pros of being amalgamated with the other departments is noteworthy, particularly that they pertain to the equitable allocation of resources and improved coordination for better service delivery across the city.

A year later, once the Unicity had been constituted, a draft housing allocation policy had been formulated for the metropolitan municipality the City of Cape Town.⁴ The draft noted that “allocation of housing assistance presently occurs in a random and mostly problem-induced fashion. It leads to a patently unfair and un-transparent process” (City of Cape Town 2001: 22). Recognising the shortcomings of the allocation practice at the time, the policy aimed to situate housing allocation at the local level in terms of the “context of changing national policy” as well as the “role and functions of local government in housing” (p. 22).

The draft policy set out quite different ways of undertaking housing allocation in comparison to how it had been done by the Metropolitan Local Councils of the past. The draft outlined the different housing opportunity types – new housing (through the project-linked capital subsidy); institutional/social housing; in situ programme support; serviced sites; and council-owned stock – each of which would have different allocation policies and procedures associated with them. The policies proposed for these included, for new houses and serviced sites, a pre-application process and the composition of beneficiary lists based on the target community, open on-site marketing, municipal submissions, and ward councillor submissions of names of potential beneficiaries. For in situ upgrading, a project register was proposed which would list the target community based on those who qualified for national housing subsidy assistance and those who expressed interest in relocating. In terms of council-owned housing stock, the draft policy proposed that the existing waiting lists be used for the allocation of vacant council homes, but that ultimately, waiting lists should be closed and phased out.

The draft policy shows the complicated terrain of managing the allocation of different housing solutions across the metropole in the context of shifting national policy and practice. By 2004 and the adoption of the City’s housing allocation policy, the policy approved by the Mayoral

⁴The City of Cape Town is referred to interchangeably as ‘the City’ throughout this dissertation. This refers to the current metropolitan municipality, rather than the iterations of the previous local authorities. I use ‘city’ to denote the urban area governed by the City of Cape Town.

Committee was similar to that proposed two years prior, with the exception that it reflected a change in the National housing policy with regards to the requirements of individuals to contribute towards their National Housing Subsidy (a feature of the previous housing policies for new-build structures). In light of the requirement of applicants to save towards their national housing subsidy, the policy recommended the development of the Cape Town Register, which would hold the names of applicants who expressed an interest in accessing a subsidy. While the Register as described in the policy seemed very similar (in terms of the types of information collected by the City) to the single database for housing need that had been discussed prior, the Register was not a reworked waiting list – the policy specifically noted that the “names appearing in the Register are in no order of priority” (City of Cape Town 2001: 4). In addition to the registration process, a project application process would be implemented to inform an initial project list.

Once a project had been identified, those who had expressed interest in being housed in the area in the registration process would be notified, and applications would be received from anyone in the Cape Metropolitan Area who were eligible for a housing subsidy – eligibility included residence in Cape Town for longer than 2 years, as well as meeting their savings contributions in full (City of Cape Town 2001: 3; 5). The other housing options remained similarly allocated. In relation to the allocation of council houses, the policy emphasised that:

Councillors, SubCouncils and NGO's [sic] shall play no role in the procedures of re-allocation. Only the Executive Mayor, in consultation with the Mayoral Committee members, plays a role approving this kind of allocation decision.

City of Cape Town (2001: 8)

The City's Housing Allocation Policy was revised in 2009 as a result of the publication of the National Housing Allocation Guidelines by the National Department of Housing (City of Cape Town 2009b). National shifts in discourse around the entrenched nature of informality was also

reflected in the revised policy, which “advocate[d] a specific balance of beneficiaries between backyarders and people living in informal settlements” (City of Cape Town 2009b: 5). The revised policy importantly outlined the institutional arrangements in the allocation of housing, and outlines the stakeholders involved in the “identification, selection and approval of beneficiaries in new housing projects, amongst others” (City of Cape Town 2009b: 6). These actors included the allocation committee (comprised of officials from local and provincial government), the project steering committee (officials from the City, representatives from the beneficiary community, councillors and sub-council, and project consultants. Together, these stakeholders would make recommendations regarding the potential beneficiaries to the Executive Director of Housing, and later would be ratified by the Mayoral Committee member for Housing. Also included in the institutional arrangements was the City’s Housing Database Information section, the Provincial Department of Housing, the National Department of Housing, and the project manager.

The 2009 revised policy shifted to a less restrictive allocation policy in terms of the allocation of council rental stock, and the allocation shifted back to a date of registration on the housing database as the primary eligibility tool, followed by the applicant’s preferred area. In terms of new housing developments, an important change in policy was the discarding of the saving requirement component of the new development eligibility criteria for applicants. As a result, the distinction between a housing register and a housing application was removed, with the implementation of the integrated housing database fulfilling the function of applicants registering their interest in receiving assistance from the state, as well as a tool for organising allocation decisions.

Furthermore, a greater emphasis was placed on allocating housing fairly between those living in overcrowded conditions and those living in informal settlements and backyards. The policy brought into effect the notion of a percentage based on a determined radius in which applicants

ought to reside, and from there, would take time spent waiting on the list into account. The policy also introduced the requirement that “The approved beneficiary list recommended by the Project Steering Committee for a specific project, must be made public for a reasonable time in the affected community for comment before submitting for approval to Province” (City of Cape Town 2009b: 12). This would allow residents to view the process of housing allocation as more transparent, and would enable appeals from those who had been omitted from the list (albeit if based “only on the grounds that due process had not been followed” (City of Cape Town 2009b: 12)).

The policy was revised in 2012, and again in 2013. The 2013 version outlines in considerable detail the roles and responsibilities of the various role players involved in the housing allocation process. It also includes a far wider array of stakeholders involved in the housing allocation process – including the Housing Allocation Oversight Committee, which would oversee the following of due process as exercised by the Project Steering Committee. The role of the Housing Information branch is also explained in far greater detail than in the 2009 version of the policy – and in so doing, demonstrates the significance of the role of application data in the allocation of housing. Two additional stakeholders are included in this list: the subsidy administrators, who manage the subsidy application process, and the applicants themselves, who in this version of the policy, are tasked with registering their need for housing assistance on the database and ensuring that their particulars remain up to date on the database.

Although the allocation policy is currently once again under review (Cape Argus 2020) the current housing allocation policy was approved in 2015, and acknowledges that the allocation of subsidised housing units is “an area of contestation” and that the matter requires a “clear, open and transparent policy where affected parties takes [sic] part in setting criteria for selection is required to ensure fair allocation of housing opportunities” (City of Cape Town 2015: 8). The policy outlines its strategic intent, and it is apparent how the policy sits in

conversation with higher-level strategic documents that guide the City's development trajectory – from local, provincial and national processes.

Similar to the previous policy of 2013, the allocation policy outlines the various stakeholders involved in housing allocation, as well as their roles. It also outlines the housing application process. The most noteworthy aspect of this section of the policy is the inclusion of a clause that stipulates that “At the time of assistance with a housing opportunity, applicants must also meet the general national qualifying criteria” (City of Cape Town 2015: 14).

This section shows the complexity of housing allocation policy and its implementation in the post-apartheid period, the insertion of practices of equity in the state's allocation of houses, and the debates around the best tools for ensuring fair allocation practices. The section shows how the making of a metropolitan municipality is entangled with the making of the City's integrated housing allocation policy, and how national directives on fairness and equity in allocation of scarce resources are implemented into policies at the local scale.

Conclusion

This chapter has traced the development of housing allocation policy across a fragmented landscape. The intertwined processes of regime change, institutional reconfiguration, and the associated shifts in policy regarding housing allocation demonstrate the extent of local government's role in the delivery of housing.

The chapter charts the shift from multiple methods of housing allocation through processes of institutional integration and the associated development of a single policy for housing allocation across the city. The state's pursuit of just allocation practices is demonstrated through its investment in the housing allocation policy document, the deliberations around the most

efficient, politically palatable and publicly acceptable methods of doing housing allocation. Yet the tensions of allocation persist, and the questions of time spent waiting and the other criteria that guide eligibility remain part of the housing allocation debate, as is demonstrated in the more recent versions of housing allocation policy since the constitution of the metropolitan municipality. These questions of fairness necessitate the development and use of the housing database, the tool through which the state implements allocation practices that are fair.

The following chapter turns to the development of Cape Town's integrated housing database as a way for the state to execute the nationally stipulated eligibility criteria through which the state determines fair allocation decisions. Within a context of political and institutional change, the next chapter also examines technological advances and the implications of these on the development of the database as the tool through which housing demand data is collated and housing opportunities are allocated.

Chapter 5: Waiting lists, registers, and legacy systems: The making of the database

Introduction

This chapter traces the development of the integrated housing database in Cape Town as the tool through which the integrated housing allocation policy, outlined in the previous chapter, facilitates fair housing allocation decisions. The chapter starts to unveil how housing allocation technology in Cape Town shapes, as well as is shaped by, the context in which it operates.

Because the housing database was developed from numerous different housing allocation technologies, this chapter details the development of the housing database through an examination of its predecessors. Starting in 1983, this chapter outlines the computerisation of housing application information, which up until this point had been paper-based, with different methods for allocating houses for each of the 61 local authority bodies across the city. The chapter examines the process of computerisation, the rationales behind it, and the effects that computerisation had for housing allocation at the time and in the years that followed. Intertwined with this story of computerisation is a narrative of shifting local government institutions during the late 1980s and 1990s, a state drive to reconfigure local authorities into more fairly sized and equally resourced municipal bodies.

Through significant regime change from segregated apartheid development to democratic principles of equality, effected through various institutional shifts for the governance of the Cape Town area, housing allocation technologies also changed, echoing the political intentions of the time, as well as the different data requirements for decision-making. This chapter shows how the integrated housing database as we know it in the present day was developed through

the navigation of these challenging political, social and economic contexts, the re-formulation of practices of housing allocation, the repurposing of significant components of housing allocation tools and data, and the rendering of the database as a technical, efficient, functional and aspirational tool for fair decision-making.

Waiting lists: From paper-based to early computerised lists

This section documents the process of computerising housing application information. The narrative starts by explaining the process of collecting housing demand information prior to the existence of computer programmes. Although documentation of physical evidence is scarce, housing demand data existed in haphazard ways, in handwritten books that held detailed records of families' housing requirements. The computerisation process began with the capturing of the 144 handwritten waiting lists of the former Divisional Council of the Cape areas. The section examines the reasons why the Divisional Council wanted to computerise the information, and explores how this was achieved, through the motivation for computers and printers, through to the computer programme design. Following this, the process of computerisation is considered alongside the analysis of the types of information that were retained from the handwritten records. This section illustrates why the computerisation process was attractive to officials, particularly for reporting and planning purposes.

Computerising application data

In the early 1980s, housing applications all resided on paper. Applicants' details would be recorded in books and updated over time. The books, of which there were many, comprised the different handwriting of various officials. Officials would update the details contained in the housing application; they would add new additions to the family, as well as notes regarding any unacceptable behaviour, or extenuating circumstances that might move an applicant higher up the list. These books were purely operational and could not easily be used to extract data for

reporting or planning purposes. Regardless, these housing applications were used to create housing waiting lists for many of the local authorities in Cape Town during the 1980s for both new housing as well as rental housing owned by the state.

The Divisional Council of the Cape, a local authority that was an umbrella administrative body for the more peripheral metropolitan areas (see Figure 5.1), decided in 1983 to computerise its waiting lists. Officials working for the Council recognised that their job could be made easier by embracing what technological advances could offer. A former official explained that:

we had all these waiting lists, and you're doing your annual report and things like this, and people want to know how many [are] on the waiting list, you've got to go to each one and count them all up, and then you don't know whether that same person is on multiple lists...

retired housing official, CCT and PGWC, 29 November 2016

As the former official pointed out, the paper-based waiting lists that were used at the time did not facilitate an easy reporting process and were also subject to flaws in the application information, particularly errors incurred through the duplication of applications across the different areas and different housing options available. For this reason, it made sense to consider computerising the applications, which would make reporting a simpler process.

At the time, there were 144 waiting lists for the Divisional Council areas alone (retired housing official, CCT and PGWC, 4 November 2016). Any kind of reporting was thus a significant, “totally unmanageable” (retired housing official, CCT and PGWC, 29 November 2016) task, rendered even more challenging by the handwritten records.

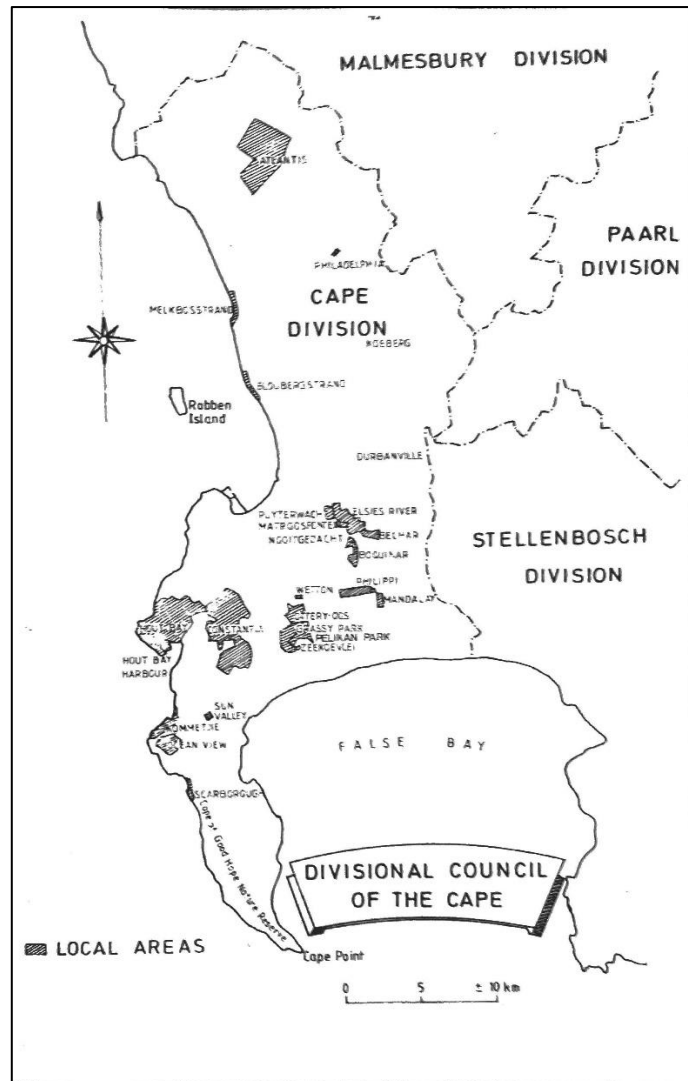


Figure 5.1 A map of the municipal extent of the Divisional Council of the Cape, 1985, including the local areas (Divisional Council of the Cape 1986a)

Moving from paper-based waiting lists to a computerised approach required the capturing of housing application information as standardised data. This first stage of transcribing handwritten notes in housing applicants' files into a computerised format proved challenging.

Computerising the waiting lists was not a small undertaking and being allowed to purchase the technological tools with which to do this was in itself an achievement, given that the technological equipment required was not readily available to all officials at this time. Officials in the housing department motivated at a housing portfolio meeting for a computer to use to capture all the records, after which it took around six months to receive the "mini computer,

three terminals and a printer” (Divisional Council of the Cape 1985). The computer system, which a respondent believed to be the first computerisation of the waiting lists in South Africa, was conceived by an official working for the Divisional Council at the time, and was written by a programmer, which took a further five months.

At this stage, the waiting list captured 19 data fields about each applicant. Figure 5.2, an extract from a report to the Divisional Council Housing Portfolio Committee meeting, shows some of the types of information that the computerised programme captured from housing applications (Divisional Council of the Cape 1985). Other fields included “disability or infirmity”; employment status (employed/receive a grant/pensioner/unemployed); applicants whose employer offered some form of financial assistance, bond guarantee or housing subsidy; where applicants lived at the time of application; and in which housing estate applicants wanted to reside (although this wasn’t explicitly asked on the application form). While the extraneous – arguably political – details like any found under the ‘bad behaviour’ section were captured, what was more important to officials working in housing allocation at this period was having a standardised set of information for every applicant.

of all Coloured applicants on Council's waiting list as at 24 July 1985:-

1.	Total number of applications on hand	14 890
2.1	Applicants earning R800 per month or less	14 424
2.2	Applicants earning over R800 per month	466
		<hr/>
		14 890
3.	Average household size	5 persons
4.	Average monthly income of breadwinner	R370
5.	Average monthly income of the remainder of the household if other members of household work	R109
6.1	Number of households where the breadwinner is the sole provider	9404
6.2	Number of households where other members do work	5486
		<hr/>
		14 890
7.	Each application is assessed on what size letting accommodation they would qualify for if they had applied for a letting unit. The following is reflected:-	
	2 roomed letting	- 2785
	1 bedroom or 3 roomed letting	- 4132
	2 bedroom or 4 roomed letting	- 5061
	3 Bedroom or 5 roomed letting	- 2238
	4 bedroom or 6 roomed letting	- 578
		<hr/>
		14 794
		<hr/>

Figure 5.2 This figure is an extract from a Divisional Council of the Cape Housing Committee meeting, and shows some of the fields of data that the computerised housing waiting lists collected (Divisional Council of the Cape 1985)

The following year, capturing all the relevant details of housing applicants into the computer began. The data capturing was undertaken by "Council staff and partly by temporary staff such as students and punch operators which were employed specifically for this purpose" (Report submitted for the Divisional Council meeting, October 1985). It was noted that the data were captured from "application forms onto special data input forms" prior to the "actual computerising of the data" (Divisional Council of the Cape 1985).

Even at this early stage in moving from a paper-based system to a computerised system, challenges arose. A report to the Housing Committee notes that there was a backlog in capturing the entire waiting list - 10 000 applicants (retired housing official, CCT and PGWC, November 2016) - and that the lack of knowledge of those doing the capturing meant that there were

“many inconsistencies, errors and omissions in the whole data capture process” (Divisional Council meeting minutes, October 1986). These oversights would become increasingly more apparent in years to come, when the housing waiting lists were amalgamated – this is documented in the later sections in this chapter.

The shortcomings of the data captured during this initial process are unsurprising given the extent of the notes gathered on each applicant and their families up until this point. Details about dependents were documented, as was the household’s previous living arrangements. In addition, ‘bad behaviour’ was also noted – for example, foul language, swearing at officials and drug use (retired housing official, CCT and PGWC, 29 November 2016).⁵ Finally, attempts to reach the applicants were noted too. One of the key people involved in the computerisation process pointed out that when the programme was developed, senior officials did not want to lose any of the details of applications, and so all of these notes were captured (retired housing official, CCT and PGWC, 29 November 2016).

As a result of these detailed applicant notes, capturing applications into a computerised format was more time consuming than anticipated (Divisional Council of the Cape 1986b), and therefore was an expensive pursuit. But the benefits of capturing data directly into a computer programme have stood the test of time, and some of the details mentioned above continue to be documented in the housing database as it operates today. More significantly, because the database is the successor to this early computerised version of the housing waiting lists, many of the notes captured in this early version of what would become, through a series of technological and political interventions, the integrated database, continue to exist in the details

⁵ While these notes may still exist on applications in the current programme used by the City, they are no longer considered before deciding whether or not an applicant is eligible for housing from the state. However, this is an interesting topic to explore in terms of how the apartheid state had an ideal recipient in mind: one who was patient, submissive to authority and imbued a sense of respectability (see Ross 2010 on 'ordentlikheid' (respectability)).

of applications from that time. The implications of the persistence of data will be considered in later chapters.

Computerisation for simpler housing allocation

The ability to report to the Committee more frequently meant that matters of housing backlogs and allocation grew in significance in Housing Committee meetings. For each meeting, schedules of the numbers of housing applications were reported upon. As illustrated in Figure 5.3, these schedules were organised by race. In a report submitted to the Housing Committee, it is noted that “the statistics which have become available have proved to be extremely interesting and will assist in the future planning of projects” (Divisional Council of the Cape 1985). Also of interest is the direct reference to specific housing projects underway in the Divisional Council of the Cape’s jurisdiction, in this case, the Elsie’s River development project and the Atlantis ‘Industrialists’.

Records from the late 1980s demonstrate how the computerisation of the housing waiting lists enabled the use of this housing need information. Primarily, the computerisation of the housing waiting lists enabled simpler allocation of houses. The computerised lists were able to “list on the screen or on a printout those applicants who compl[ied] with all of certain selected criteria drawn from the above 19 data fields” (Divisional Council of the Cape 1985: C3). This enabled officials to make allocation decisions, although as this quote identifies, even within this report to the housing committee, the precise eligibility criteria for housing beneficiaries remained opaque. This opacity of the weighting of eligibility criteria is a critical theme throughout this research project and will be reflected upon in greater detail in Chapter 6.

By 1986, it was reported that it was possible to extract data from the waiting lists in order to facilitate council housing relets by each local area specifically. The report notes that “with the computerisation of the waiting list it is now possible to programme the computer in such a

manner that separate lists can be extracted, in date order, for the individual Local Areas” (Divisional Council of the Cape 1986b). The seemingly simple ability of the computerised system to sort housing applications according to area belied the significance of this functionality. The same report noted that:

...the allocation of dwellings is in fact a prescribed function and responsibility of Management Committees... However [Divisional] Council, as a matter of policy, has always retained the responsibility of this function because the general waiting list has always been kept strictly in date order, irrespective of the applicant’s place of residence... In view of the foregoing it is RECOMMENDED [emphasis in original text] that Council accedes to the Management Committee’s request to allocate all relets in respect of the waiting list for their individual areas of jurisdiction...

Divisional Council of the Cape (1986b)

EARLIEST APPLICATION :	11 March 1970
MOST RECENT APPLICATION :	21 October 1986
NUMBER OF APPLICATIONS :	19144 ; WITH OTHER HOUSEHOLD INCOME : 7450 ; WITHOUT OTHER HOUSEHOLD INCOME : 11694

GENERAL INCOME STATISTICS		INCOME CATEGORIES	
AVERAGE MONTHLY INCOME OF HOUSEHOLD HEAD	399,80	R0,00 to R800,00	18268
AVERAGE BALANCE OF HOUSEHOLD INCOME	120,94	R801,00 TO R1 200,00	744
AVERAGE TOTAL HOUSEHOLD INCOME	520,75	R1 201,00 AND HIGHER	132
AVERAGE TOTAL HOUSEHOLD INCOME IF OTHER HOUSEHOLD INCOME EXISTS	683,72		

APPLICATION CRITERIA BREAKDOWN

1. CASES AFFECTED BY COUNCIL'S ELISE RIVER REDEVELOPMENT PROJECT :	N I L
2. APPLICANTS FROM ATLANTIS INDUSTRIALISTS FOR PRIORITY IN ATLANTIS :	135
3. CITY COUNCIL)	945
4. BELLVILLE)	41
5. FAROE)	42
6. STELLENBOSCH)	15
7. PAARL)	8
8. OTHER)	147

RACE	APPLICANT COUNT WITHIN INCOME CATEGORIES (GROSS RENT PER MONTH)							
	0 to 150	151 to 200	201 to 250	251 to 300	301 to 350	351 to 400	401 to 450	451 and more
COLOURED	2306	4856	2281	3228	3702	1532	643	79
INDIAN	11	16	15	38	103	120	96	53
WHITE	3	5	7	12	37	16	5	Nil
TOTALS	2320	4877	2283	3278	3842	1668	744	132

Figure 5.3 Quarterly reports to a Divisional Council of the Cape Housing Portfolio Committee meeting, 1986, including the earliest application date, the most recent application date, the number of applications, details on income, and racially specific records of the demand within these income brackets (Divisional Council of the Cape 1986c)

The capacity of the computerised system for shifting which actors could undertake housing allocation had significant implications for the future, given the changing composition and roles of the various local government institutions across the city. The capabilities of the computerised waiting lists were also recognised by officials in other local authorities. In 1986, the municipality of Cape Town developed its own computerised housing waiting list, having seen and appreciated the functionality of the Divisional Council of the Cape's version (retired housing official, CCT and PGWC, 29 November 2016).

From a reporting perspective, the computerised housing waiting lists enabled more detailed reporting on housing need and demand. Table 5.1 documents how housing need and demand were reported in local government documents and newspaper articles. While the numbers of those waiting for housing assistance from the state differ according to the source of the data, the point of the table is to illustrate how differently housing demand was reported on according to the source of information. In the 1980s, waiting was often reported in racial terms, and with very different numbers for the different local authority entities. By the end of the decade, the shift to looking towards the future and planning for future growth becomes apparent in the focus of the articles.

Beyond more streamlined processes of housing allocation, the computerised waiting lists also enabled more detailed reporting possibilities, and coupled with other calculative practices, the statistics generated by the lists enabled local government institutions to plan for future housing need.

Table 5.1 Housing need and demand numbers, populated from government documentation and newspaper articles, 1980–1989

Year	Number of people waiting	Additional notes of interest	Units built per year	Source
1980	Coloured housing: 60 000 units			(Yeld 1985)
1982	3 215 housing applicants in the Lagunya area officially			(Zweig, citing Elias (1983) 2005: 84)
1984	53 500 (conservative estimate)/102 200 (estimated actual need) – CTC and Divisional Councils			(Streek 1984)
1985	Coloured housing: 45 000			('Housing shortfall' 1986)
1986	27 721	Growth of 301 families per month		(Municipal reporter 1986b)
1986	75 000 units needed for greater Cape Town; 44 500 units for Cape Town)	Growth of 100 and 500 new applicants per month		(Municipal reporter 1986a)
September 1986	“there are already plus minus 20 000 names on the waiting list”			(Divisional Council of the Cape 1986b)
November 1986	“Number of applications: 19144”			(Divisional Council of the Cape 1986c)
1988	“...estimated current backlog (93 000 dwelling units)...” “...the total housing need to the year 2000 is approximately 183 000 units”			(City of Cape Town 1988: 13)
1989		“Although the City should be building at least 7 000 dwellings annually for its poorer coloured citizens, it has averaged only about 1 000 a year for the past six years”		(City of Cape Town 1989/90: 20)
1989	93 000 + 90 000 to accommodate future population growth			(staff reporter 1989)
1989	100 000+ black housing shortage 85 000 – Ikapa Town Council			(Lambert 1989)
1989	60 000 City of Cape Town (excluding black housing shortage)			(Municipal reporter 1989)

Computerisation for enabling reporting on and planning for housing need

The computerisation of the housing waiting lists enabled a variety of functions that previously had been difficult to achieve using paper-based waiting lists. Despite a report to the housing portfolio committee noting that “the conversion to a computerised system has proved to be a larger task than was originally envisaged”, and was an expensive operation, there were obvious benefits. Staff acquired new knowledge and skills in computing. But most significantly, the council no longer had to manually trawl through waiting lists to be able to report on backlog figures and other statistics. “Extracting data on an ad hoc and often urgent basis” (Divisional Council meeting minutes, October 1986) was made considerably easier and quicker by the computerised system. This is evident from the reporting schedules (see Figure 5.2), which from October 1986, were recommended to be submitted to Committee meetings for information on a quarterly basis, which they subsequently were. Furthermore, the computerisation of the waiting lists meant that it became far easier to report on and analyse the housing data (the uses of this housing demand data are documented in Chapter 6).

The computerisation process enabled two additional outputs. First, the computerised lists could easily and quickly produce statistics which allowed for better planning of projects. A report to the Housing Committee notes that the “volume of the printouts requested has been considerable” and that the reports that the computerised lists could produce were “made available to certain developers with which Council is negotiating, the various housing offices and State departments involved with housing” (Divisional Council of the Cape 1985: C6). Second, the computerisation of the waiting lists had also been useful in assisting with the development of a National Housing Waiting List by national government bodies (Divisional Council of the Cape 1985: C6).

The computerisation of the housing applicants’ data not only facilitated easier reporting to internal and external actors, but also enabled improved planning by the state. A document from

1986 states that “even the most conservative estimate is clearly beyond the reach of being achieved using current technology and housing methods” (Peninsula Community Association and MLH Architects and Planners 1986). Figure 5.4 documents the state’s ability to plan for the future based on housing need information. The table reflects the estimated need for ‘dwelling units’ projected until the year 2000 and estimates the backlog for each race and for each sub-category of housing income (and thus the associated housing type that each group would have been eligible for). The shortcomings of the data held within the table are noted below it with regards to the black population, yet the compilation of such a table speaks to the importance of the computerisation of the housing applications and the housing waiting lists.

Such housing need information was used together with other information collected by the state.

The City Planner’s annual report noted that:

...the calculation of additional land required for housing was a complex process. It involved quantifying the housing backlog, future population growth, the area of land suitable for urban development and assumptions such as, acceptable limits to overcrowding and suitable gross and net housing unit densities...

(City of Cape Town 1988: 13)

AREA Category	WHITE				COLOURED				INDIAN				* BLACK				TOTAL			
	Esti- mated need 1980- 2000	Backlog 1980	Total need	Average annual need	Esti- mated need 1980- 2000	Backlog 1980	Total need	Average annual need	Esti- mated need 1980 2000	Backlog 1980	Total need	Average annual need	Esti- mated need 1980 2000	Backlog 1980	Total need	Average annual need	Esti- mated need 1980- 2000	Backlog 1980	Total need	Average annual need
1	125 538	3 900	129 438	6 471	128 307	84 680	192 987	9 648	1 247	1 420	2 667	133	138 200	9 320	147 520	7 376	393 232	79 300	472 532	23 630
2	45 616	1 000	46 616	2 331	97 384	42 820	140 204	7 010	134	40	174	9	3 934	2 060	5 994	300	147 068	45 920	192 988	9 648
3	6 144	260	6 404	320	22 209	17 440	39 649	1 982	185	40	235	12	5 137	1 780	6 917	346	33 685	19 520	53 205	2 680
4	5 937	220	6 157	308	9 586	11 780	21 346	1 067	0	0	0	0	1 122	240	1 362	68	16 645	12 220	28 865	1 443
5	20 008	660	20 668	1 033	17 157	28 820	45 777	2 289	482	40	522	26	4 545	2 420	6 965	346	42 192	31 740	73 932	3 637

* Note: Black figures under-enumerated

Figure 5.4 A table from a planning report showing how the computerisation of the waiting lists enabled planning for the future – albeit one that continued to plan on a racial basis (City of Cape Town 1987)

By using the data held within the computerised waiting lists, the report was able to establish the backlog of housing, project the future need, as well as the amount of land, and how that land should be sized according to the income distribution of housing applicants.

Coupled with population modelling, the statistics of housing demand became a powerful tool, and intricate equations were used to calculate the future housing demand (see Figure 5.5). Using methods such as the 'mismatch method', which was "based on the premise that need is defined in terms of overcrowding" (see Figure 5.5) as well as the balance sheet method (see Figure 5.6), which compared "families with dwelling units where the basic assumption allows one family per dwelling unit. The excess of families over dwelling units constitutes the minimum housing shortage" (City of Cape Town 1987: 5). These methods were used to produce schedules, albeit race-based, of estimated dwelling unit need for 1980–2000 (Figure 5.4).

However, the ability to plan for the future was hampered by the uneven collection of housing need data across apartheid's racial categories. A report from the Cape Housing Need and Demand Assessment Programme lists the limitations of the data. It notes that the:

data in this report is based on the 1980 Census which contains the only detailed information on housing. However, it is seven years out of date and the black population group is under-enumerated. All figures, therefore, should be considered as minimum estimates. Comprehensive figures on black housing are unavailable at present... The focus and findings show that the coloured population group experiences the greatest need for housing. However, recent figures on black migration to the Cape show that this situation could be changing... Minimum estimates on black migration show that approximately 400 000 black people entered the city between 1980 and 1987. This has serious implications on the need and demand for housing and the provision of all services.

City of Cape Town (1987: 7-8)

$$N_t = DR_t + (D + \frac{DR_t}{2}) t/L$$

where

N = number of additional dwellings needed
 t = time period for which the needs are calculated
 D = number of dwellings in existence (housing stock) at the beginning of the time period
 R = growth rate of population for time period
 L = average technical life of dwellings (in years)

Figure 5.5 The mismatch method equation used to calculate the estimated need for houses between 1980 and 2000 (City of Cape Town 1987)

Despite the provisos held in these reports that the data were out of date and the black population was under-enumerated (see Figure 5.4), and although very technical,⁶ these reports showed that the need for housing was growing. The reports show too that the City was taking population growth and changing profiles of need and demand into account for planning purposes, even though its ability to address these needs was limited by lack of available land and funding for housing those most in need.

In order to calculate the shortage of housing by ethnic group and income band the following formula was used:

$$n = \sum_{x=1}^{x=5} y (x - 1)$$

where n = housing shortage
 y = number of occurrences of families per dwelling unit
 x = number of families per dwelling unit

Figure 5.6 The balance sheet method, used to calculate the estimated need for houses between 1980 and 2000 (City of Cape Town 1987)

The use of such information and equations generated graphs like that in Figure 5.7, which shows different scenarios for different levels of production, or the “building rate options” up to the year 2000. The graph shows the fluctuations in housing production between 1976 and 1986,

⁶ Noteworthy in Figure 5.5 in particular is the City of Cape Town’s consideration of the average technical life of dwellings. While the durability of houses built by the state is beyond the scope of this thesis, the consideration of this point is fascinating, and not something that seems to be taken into account anymore.

and then projects alternative scenarios based on different levels of housing production. The intention of this graph is very clearly to eliminate housing backlog, despite the shortcomings of the data used to generate the prospective housing need.

What these reports indicate is that the computerised waiting lists provided a means of generating data for forward planning, and as a result, the waiting list was no longer merely reactive, but the data held within it could be used to proactively plan for the future, potentially desegregated city. Although never attributed explicitly to the housing waiting lists, these details on housing backlog, as well as applicants' income and desired plot sizes, enabled a more detailed type of city planning. These reports and plans would become useful in the near future.

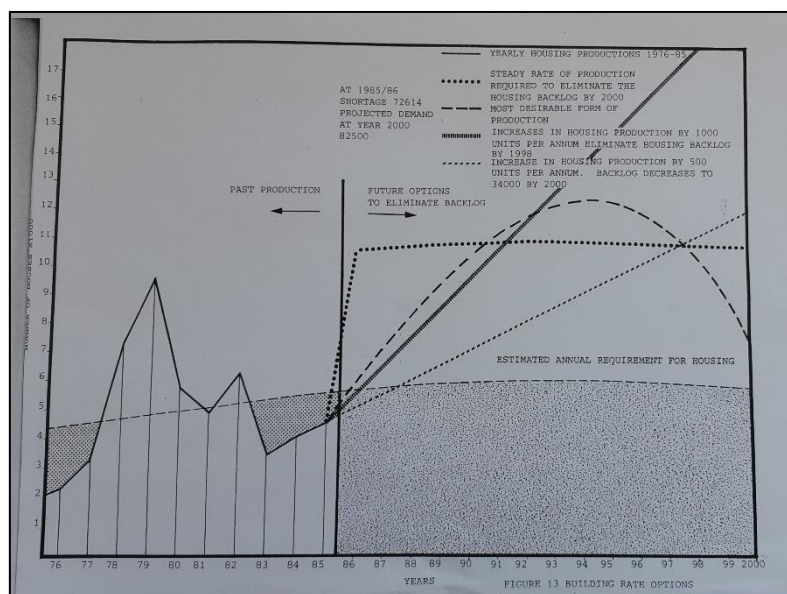


Figure 5.7 Graph showing the projected housing need between 1986 and 2000 (City of Cape Town 1986: 13)

The Annual Report of the City Planner 1989/90 signals the changes underway across the city. It notes that:

Our City, like other South African cities, has developed its physical form and administrative structures over the past decades, under conditions significantly different from those in which they must operate today... Whatever forms of local government

emerge in the future, they must be based on three fundamental elements: political legitimacy, financial viability and institutional or administrative effectiveness.

City of Cape Town (1989/90: 1)

This shift in focus, from reporting on infrastructural advances made by the City over the course of the year, to looking towards the changing City layout and revised institutional principles, signified the changing times.

This section has outlined the process of computerising the paper-based housing waiting lists, from officials at the Divisional Council of the Cape motivating for a computer, to the development of a computer system, to the capturing of handwritten housing applications into the computer programme. It has also shown how these housing applications were reimagined as “statistical information”, as it was referred to in a report to the Housing Committee (Divisional Council of the Cape 1986c), and were used to populate tables and graphs that outlined housing need across the city, which often reflected on the changing demand profile of a slowly desegregating city. The following section examines how the computerised waiting lists changed in the face of shifting local government configurations.

Desegregating post-apartheid waiting lists: From race-based to place-based housing allocation systems

Owing to the many shifts in local government institutional configurations, there have been several points at which housing applications have had to be amalgamated, either in order to be re-separated according to new entities with fairer geographical bounds, or in order to create the single database that exists now. These periods of amalgamation have typically been accompanied by introspection by the officials who work with the housing application data on a day-to-day basis, to ensure that the changes in the organisation of the application data would

help to make allocation smoother, prevent political interference and thereby promote fairer allocation practices.

The Divisional Council, and the Divisional Council of the Cape specifically, were disbanded in 1988 and superseded by the Regional Services Councils, “which w[ere] part of a nation-wide system of supra-local authorities introduced in 1985 in order to channel funding to African and coloured local structures” (Watson 2002: 78). The expansion of the Regional Services Council’s spatial scope and institutional mandate is illustrated by the map in Figure 5.8. Up until 1992, the Western Cape Regional Services Council operated across the city, with numerous member bodies including local councils, municipalities, town councils and management committee areas (see Figure 5.8). Figure 5.8 illustrates how these various local government bodies operated across the city and illustrates the complex institutional management arrangements across the area.

These institutional bodies would, in 1993, change to reflect a shifting, more fairly constituted institutional landscape. At the time of the pre-interim agreement, the 61 race-based local authorities were reshaped into 39 local authorities. By 1996, the process was underway to once again redefine the local authorities so that they were place-based, rather than race-based. As part of the move towards developmental local government (Parnell and Pieterse in Parnell et al. 2002: 79), the 39 local administrations that had existed since 1993 were dissolved, reorganised and split into seven more equally constituted sub-structures following the redrawing of the municipal boundaries of the local authorities. In doing this, Cape Town’s shift towards an institutionally, if not materially, desegregated city, was underway.

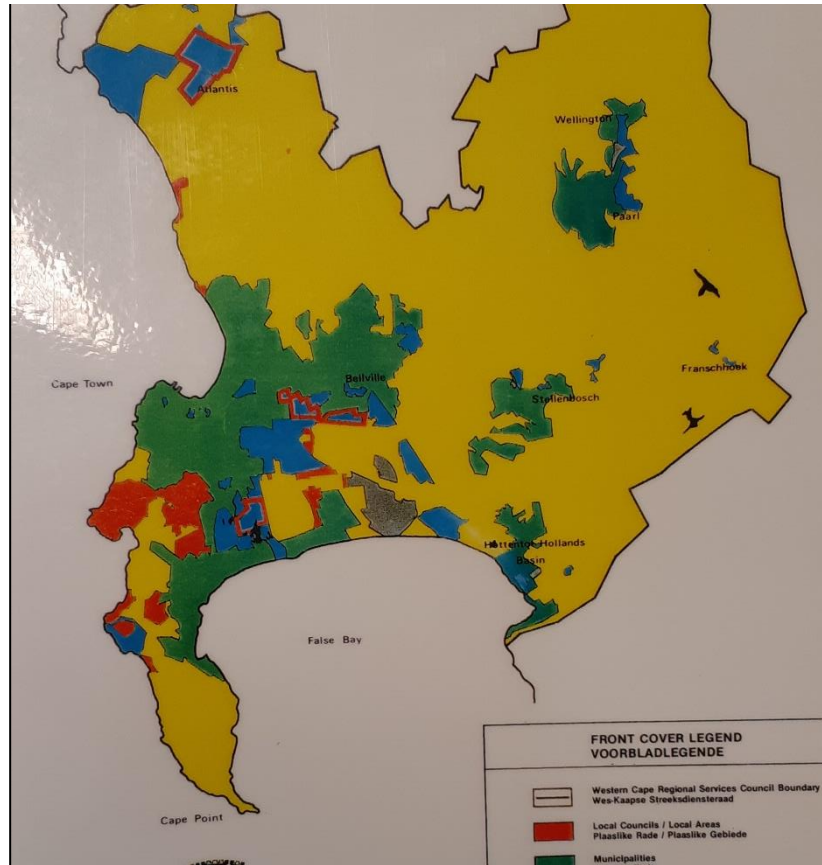


Figure 5.8 A map documenting the various local government institutional arrangements across Cape Town, circa 1992 (Western Cape Regional Services Council 1992)

Figure 5.9 demonstrates how the institutional demarcation had changed in 1996. In comparison to the maps in Figures 5.1 and 5.8, the change in institutional demarcation of the city is marked, with six local government bodies as opposed to the many that existed in the various local government iterations of before. The effects of the institutional changes extended beyond the new demarcations of municipal boundaries: Cameron (1999: 137) reported that the boundary demarcation in Cape Town “had to address four major concerns”. These concerns included “racially fragmented local government boundaries”, “the fact that the local government in the [Cape Metropolitan Area] was the most fragmented of South Africa’s metropolitan areas”, “the breakdown in service delivery in [black local authorities]”, and “the lack of significant rates base in [black local authority] areas” (Cameron 1999: 137). These concerns would be addressed through reform of policy and practice, including housing allocation.

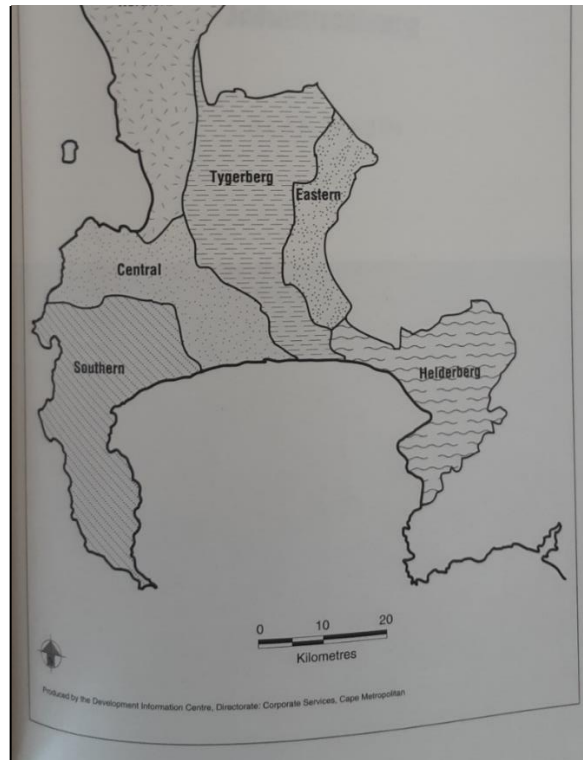


Figure 5.9 Map of the six local government bodies that together comprised the Cape Metropolitan Area, 1996-2001 (Cameron 1999: 157)

Table 5.2, like Table 5.1 in the previous section, documents the housing need and demand as reported in local government documentation and newspaper articles from the time. The table shows quite starkly how the changes in the constitution of the local government bodies affected the housing need numbers. It also shows how the different sources of data reported differing estimates of those in need of state assistance for housing.

The data reflected in this table indicates the dire need for state assistance for housing in this post-apartheid period of political and institutional change. In the following section, I turn to the processes that were undertaken to split the lists according to the newly defined institutional boundaries, a crucial first step in the realisation of fair housing allocation practices.

Reconfigured local government, split lists

The reconfiguration of the local authorities required a reconstitution of the housing waiting lists to follow suit. The waiting lists that until this point had been managed by the different local authorities across Cape Town became known as the 'legacy systems', and it was these systems that had to be amalgamated and then split according to the newly defined municipal boundaries.

The splitting of the housing waiting lists was necessary because of the local government's commitment to spatial redress through housing development. In order to allocate houses across the city in a way that did not rely on the previous dispensation's racial methodologies, the housing waiting lists had to be reconstituted according to the redefined municipal boundaries, which had been implemented in a way that intersected areas so that each municipal entity would have more equal tax bases, and therefore similar financial capacities to accommodate new housing developments. The reconstitution of the housing waiting list legacy systems, would, in theory, facilitate housing allocation in a way that was theoretically place-based, rather than race-based, even though place and race were so closely intertwined as a result of the apartheid segregation policies.

The amalgamation of the various housing waiting lists in operation across the city up to this point required many checks and balances in order to be able to be divided into six waiting lists, "largely based on where applicants resided" (retired CCT and PGWC official, 29 November 2016). At this point, "the waiting lists... were split off and the records [application forms] and data were given to the new substructures..." (City of Cape Town 2009c). Once the lists were amalgamated, they were divided again into each administration's area, and then each municipality was responsible for their own list, and so there were six systems running (retired CCT and PGWC official, 29 November 2016).

Table 5.2 Housing need and demand numbers, populated from government documentation and newspaper articles, 1994–1998

Year	Number of people waiting	Additional notes of interest	Units built per year	Source
1994	43 000 for City of Cape Town; 50 000 for Ikapa, Crossroads and Lingulethu West	370/month		(Aranes 1994)
1997	31 500			(Cavanagh 1997)
1997	“80 000 households on the various lists maintained by municipalities...”			(Behrens, Watson, and Wilkinson 1998: 30)
1998	30 000			(Ensor 1998)
1998	31 000	100/month	2-4 council units allocated to families per month	(‘Gangs muscling in on anarchic housing waiting list, says Cobbett’ 1998)
1998	190 000 households			Smit (1994) cited in Behrens, Watson, and Wilkinson (1998)
1998		Projected housing need of 260 000 by 2010 Housing delivery of “13 211 sites or units per annum of new subsidy, project-based spending” “...may be doing no more than meeting the annual growth of housing need (which may fall between 13 000 [Smit estimate] and 18 941 [Chittenden Nicks estimate per annum])”		(Behrens, Watson, and Wilkinson 1998: 28)

While in theory, the management of the waiting lists by each administration made sense, in practice, it encountered challenges. Delft South seems to have been one of the first areas where the new institutional boundaries and the state’s commitment to a non-segregated city had to be negotiated. It therefore received significant focus in the media. Prior to the announcement of the

city's new municipal boundaries, a newspaper article reported that "local authorities [had] agreed that half of the 4 000 sites developed in southern Delft would be given to families on coloured waiting lists and the other half to black people living in Crossroads, which now falls under the Cape Town municipality" (Joseph 1997). This quote shows how the housing waiting lists persisted in being race-based prior to the implementation of the new municipal configuration.

Writing on Delft South, Oldfield (2000: 865) argues that the neighbourhood would present as a "literal interface... between the last area formerly classified 'coloured', and the start of the Khayelitsha township, formerly classified 'African'. She notes that "through the provision of permanent housing and secure tenure" (Oldfield 2000: 865), the different races, previously segregated, were to be brought together. However, as one of the first Cape Town examples of desegregation through housing development, the process of allocating the housing across deeply entrenched racial divides would be challenging for the municipal substructures.

A year later in 1998, and with the new municipal boundaries in effect, the Delft South housing development was ready to be allocated to eligible beneficiaries of the state subsidy. The housing project, implemented before the institutional shifts, now fell across two local authority jurisdictions, and so an arrangement had to be made to ensure fair allocation. The article noted that "According to the agreement, 50% of the new houses are meant for people who fall under the Cape Town council and 50% for the Tygerberg council" (Singh 1998). This decision was contentious.

Oldfield (2000: 860) notes that the Tygerberg substructure was comprised of "13 formerly racially segregated local authorities", and that the municipal authority's formation had in itself been contentious, with the contestation of the new municipal boundary's "amalgamation with Khayelitsha" (Oldfield 2000: 860). The composition of the substructure in terms of former

authorities should not have mattered or been relevant. However, in a context where racial difference had been manufactured by the apartheid state for many years prior, the sense of the black population being newcomers to Cape Town (given the Coloured Labour Preference policy amongst other policies designed to create difference), and the “competition for land, housing and jobs [which] ha[d] increased racial tensions between the Coloured and Black populations of Cape Town” (Saff 1998: 90), meant that ‘coloured’ housing applicants felt that this arrangement gave preferential treatment to those who had not been waiting as long as they had. Thus, the decision that the Delft South housing development should be shared 50/50 between the two councils was unpopular.

Political attempts to quell the outcry regarding the project’s split across the Cape Town Central and Tygerberg substructures were reflected in the media. A newspaper article reported a call for unity from the African National Congress provincial housing spokesman, who noted that “We should attempt to unite the people of the metro by supporting non-racial waiting lists...” (Joseph 1997). Regardless, the plan was contested by housing applicants. By mid-1998, the waiting list that had been compiled for the Delft South housing project was “at the centre of controversy” (Joseph and Nguluwe 1998). The list compiled names from two municipalities, which as a result, had resulted in violent clashes. The article reads:

The list, from which half the houses are allocated to homeless people in the Cape Town municipality and half to those in the Tygerberg municipality, is allegedly being exploited by ward councillors and the Delft housing branch. There have been violent clashes between blacks and coloureds over house ownership in the sprawling town, and the Cape Argus was told that councillors were allocating houses to party supporters.

Joseph and Nguluwe (1998)

This is but one example of the challenges that arose when the municipalities attempted to allocate houses fairly in the still divided landscape. It was as early as 1998 that the then city

manager, Andrew Boraine, proposed an integrated approach to housing delivery “across municipal boundaries”, warning that without an integrated strategy, housing delivery would be “doomed to failure” (Craig 1998). In a newspaper article, Boraine pointed out the discrepancies between where people lived and the location of available land for housing developments. The article reports that Boraine recommended a single housing waiting list for the metropolitan area.

Examples such as that of Delft South can be used to explain the development of a single housing waiting list system – what would later become known as the integrated housing database. Newspapers reported that:

...all six municipalities must work together, produce one waiting list and identify land to be sold or used for housing... Cape Town’s city manager Andrew Boraine said the provision of housing had become a top priority. He agreed that a metro-wide approach was paramount. ‘It’s no good if there’s land available in one municipality but it’s not accessible because of municipal boundaries.’

Cavanagh (1998)

The question of the integration of waiting lists arose in local government documentation in 1998. The South Peninsula Municipality reports on the proposed integration of waiting lists and the establishment of a new allocation policy. The report makes reference to a committee that would have brought together representatives from national government, local authorities and community-based organisations to “look into the question of integrating waiting lists of Local Authorities to include those persons previously denied access thereto” (South Peninsula Municipality 1998: section 2, page unnumbered). The committee was dissolved “after only a few months in existence” because it “failed to make meaningful progress due to the fact that no consensus could be reached on a host of issues” (South Peninsula Municipality 1998: section 2, page unnumbered). These issues are not listed; however, one such issue may have been around

the inclusion of people who had not been registered as a housing applicant in Cape Town because they were not eligible during the apartheid period (for example, those who resided in Cape Town without the documentation required by the apartheid state).

Despite the inability to reach consensus on matters regarding the integration of housing waiting lists, the matter remained on the local authorities' agendas, and "the most practical methodology" was sought for "the inclusion of those persons currently not on the lists" (South Peninsula Municipality 1998: section 2, page unnumbered). A report from the same municipality a year before notes that "all the major providers of public housing currently use the [first-come first-served] method". The report admits that "this is not necessarily the best method of allocation [sic] units but it has been the most practical given the disproportionate supply/demand ratio which has prevailed for many years" (South Peninsula Municipality 1997: section 2, page unnumbered). The first-come, first-served method of allocating houses was what the waiting list system was premised upon, and relied heavily on the registration date as the critical indicator of eligibility.

It is reported in this document that the:

...controversial issue of integrating the Housing Waiting List in order to equitably accommodate those members of the population who through past policies were denied access to the Waiting List, should be applied on a metro-wide basis. The method of implementation will still however be a local matter.

South Peninsula Municipality (1997: section 3, page unnumbered)

Thus, although the waiting lists were to be managed on a metropolitan-wide, centralised database, the indication was that local government would continue to operate across smaller sub-structures. In this case, the discussion of the development of the integrated database as the housing allocation decision-making technology would foreshadow the changes across the local

government level. Although the intention existed for an integrated housing database, the practice remained that the six sub-structures, or local government authorities, “developed their own allocation policies and procedures” (City of Cape Town 2009a: 2).

This section has documented the state’s move towards desegregation and the ways in which housing allocation, as a marker of the state’s democratic commitment to redress, followed suit. It illustrates the complexity inherent within housing allocation procedures across redefined municipal boundaries, and tracks the ways in which managing the city’s commitment to accommodating eligible residents was compromised by the use of systems that were admitted to being “not the best method”, but “the most practical” (South Peninsula Municipality 1997: section 2, page unnumbered). The following section traces the inevitable development of the single housing waiting list, which would later become known as the integrated housing database.

Integrating housing allocation across the city: From ‘legacy systems’ to the housing database

This section details the development of the housing database from the various waiting lists run by the metropolitan local councils, into the single integrated housing database. First, I outline the technical development of the database, from the integration of the previous versions of the waiting lists, to the development of the database programme, and second, I look more specifically at the management of the waiting numbers, which increased significantly upon integration of the multiple lists.

The development of the database

The process of integrating the various waiting lists was implemented in early 2000, “with the design and development of a new database system” and the migration of the data from the “legacy system” (City of Cape Town 2009a: 3). A former official remembered that:

...in the early 2000s [it became apparent] that we were going to become a metro[politan municipality], and I thought well, start thinking ahead and start now designing a single system... because at some stage I'm going to be told to put it all together...

retired housing official, CCT and PGWC (29 November 2016)

The designing of a new, single system to reflect a single record of Cape Town’s housing need would commence with a detailed examination of the various waiting lists that existed across the city. The officials created what they referred to as the field mapping table, which was used to cross-reference the information across the six municipalities, “at the time when I was battling to see what have you got, and what do we need, and what is your field name, and what is our field name” (retired housing official, CCT and PGWC, 29 November 2016). As demonstrated in Figure 5.10, this table would indicate where there was alignment in the fields of data that each municipality collected.

HOUSING DATABASE MANAGEMENT SYSTEM FIELD MAPPING TABLE	X= Field exists in existing housing waiting list system					
SPA	SPA	CTA	TYG	OOS	HEL	BLA
GENERAL DETAILS						
Registration/application number	X	X		X		X
Former TMSS or Admin	X	X				
Application status (W, A, C)	X	X	X	X		
Application date when app received	X	X	X	X	X	
Other [earlier] app date	X	X				
Date applicant last made contact	X	X				
App-any-updated-date	X					
Partner-any-updated-date	X					
Date operator captured/amended details	X			X		
Name of operator	X			X		
APPLICANT DETAILS						
Applicants title	X	X		X		X
Applicants surname	X	X	X	X	X	X
Applicants firstnames	X	X	X	X	X	X
Applicants date of birth	X	X	X	X		X
Applicants ID number	X	X	X	X	X	X
ID book seen	X	X				X
PDP (Previously disadvantaged person)(ie Race)DP)	X	X				X
Applicants tel contact number	X	X	X	X		
Existing medical condition	X					
Existing tenant	X		X			X
Duration of time working in Unicity boundary	X					

Figure 5.10 An extract from the field mapping table, used by officials to integrate the legacy waiting list systems across the six former municipalities (obtained from retired official, CCT and PGWC, 29 November 2016)

As Figure 5.10 shows, this was a complicated, but illustrative, exercise. The official that compiled the field mapping table noted that “for certain things... there’s a lot of gaps... It took a bit of time. I did one municipality at a time...” (retired CCT and PGWC official, 29 November 2016). The gaps, or the differences across the different systems, were highlighted through this mapping exercise.

The difficulty of the field mapping task was compounded by the multiple waiting lists run by each municipality – these extra waiting lists comprised those for informal settlements, as well as fire and flood victims lists (retired CCT and PGWC official, 29 November 2016) (see also City of Cape Town 2009c). In addition, the field mapping table as received from a former official has a note that states in red letters that “there is [sic] also some lists in hardcopy form only originally prepared by project developers” (ALL HWLS Field Mapping Table, 20041111, from retired housing official, CCT and PGWC, 29 November 2016)).

Thus, the exact number of housing waiting lists that existed at this time is unknown. An internal report to the housing portfolio committee reflects that there were 14 waiting lists (City of Cape Town 2009c); an interview with a former official suggested 17 lists (retired housing official, CCT and PGWC, 29 November 2016); and a newspaper article from 2005 asserts that there were 21 lists (Msimang 2005a). The precise number of waiting lists is immaterial. Rather, the inability to specify the number of waiting lists illustrates the complexity of the task of integrating lists that were generated differently according to different local authorities, and were inherently racist, and therefore reflected differential access to the city over the years.

A draft housing policy reflects on these challenges. It pointed out that:

There are a number of compelling reasons for streamlining the housing assistance allocation processes... The most important arguably being to introduce fairness to the process. Many of the former administrations, and the municipalities before that, had their own lists, with associated practices and access criteria. These where [sic] not uniform and have left us with a measure of inconsistency across the metro.

City of Cape Town (2004: 3)

As demonstrated in the previous section, these inconsistencies in terms of practices and systems of allocation were affecting the course of housing delivery across the city, with public mistrust in the fairness of the systems, and the inefficiencies for officials of having to work across municipal boundaries in order to effect spatial and social change. For these reasons, officials in the Housing Department recognised the need to integrate the city's various waiting lists. As the City had embarked on a process of integration across the municipal area, resulting in the development of the 'Unicity', a single metropolitan municipality for the governance of the full municipal area, housing allocation had to follow suit.

The 2004 draft housing allocation policy reflected on the need to do this. It demonstrated the changes that were required without introducing “radically new rules of allocation” (City of Cape Town 2004: 3). These changes included “Standardising the format: information from existing list[s] will be brought across and into a uniform format”; “Updating data: some of the data kept on applicants is dated”; and “Deracialising the lists: much has changed since 1994, but this process will comprehensively remove all racial overtones that may still be latent in the current lists” (City of Cape Town 2004: 3). In doing this, the shift towards an integrated housing database would then ensure that “All data will henceforth be stored and available electronically” and “Eligibility to be on the database will be standard across the city and aligned [sic] with national capital subsidy eligibility criteria” (City of Cape Town 2004: 3).

The move towards this integrated system of housing allocation represented a significant investment in the database. The investment would comprise of time, effort, and cost. Indeed, the proposed housing allocation policy of 2004 stated that “It is unsure at the stage whether an external service provider will be needed” (City of Cape Town 2004: 3). The integration of lists themselves would take time; and dealing with dated information was so problematic in cases like in the Delft housing project that the draft policy proposed the introduction of a “bi-ennial Registration process” so that the applicants’ contact details would remain up to date. Such a process would also be time consuming, and potentially expensive depending on how these registration processes would operate. Nonetheless, the move towards an integrated housing database was adopted, and this technology finally went live in 2006.

Prior to adoption, however, was a considerable effort on the part of officials who worked on integrating the ‘legacy systems’, the waiting lists run by the previous local councils across the city. An official reflected on the process of integration, noting:

I got the data from old systems in Excel spreadsheets and then I had to clean the data in those spreadsheets, and then I had a template excel spreadsheet and I made sure that

the ID number was in the ID number column... And then I gave that spreadsheet to the IT and they did a batch upload. So I had to go through all the records. So for instance, Kuilsriver was spelled 52 different ways....

retired housing official, CCT and PGWC (29 November 2016)

It was inconsistencies like the different spellings of place names that directed how the single electronic system would be designed. Hyperbole or not, the former official noted that after making sense of 52 different ways of spelling Kuilsriver, he decided that some fields should be in a drop-down menu format: "...so that is why, in the address field, you've got a drop down list, so you can't make a mistake" (retired housing official, CCT and PGWC (29 November 2016).

The first version of the integrated housing waiting list, which initially in City documentation was referred to as a register, and later became known as the database, was launched in 2006. Following the development of the database, a separate section in the City was developed to manage the housing application information. The unit was called the Housing Information branch (it is still called this), and it comprises a small number of officials who have varying levels of access to the data held within the database. In order to function seamlessly, the database requires constant attention and upkeep. An official reflects that:

...after a few years we decided, well look, there are some little tweaks we need to do to the system, policy is changing, we need to upgrade – it was becoming old software, so we [the Housing Information branch], with the City's IT, we started to develop version two.

retired housing official, CCT and PGWC (29 November 2016)

This version considered the various changes that became apparent through use. In addition, it took into account changes required by Provincial government, who had implemented a Province-wide housing demand database based on the City's database (more detailed

information on this arrangement is discussed in the following chapter). The maintenance of the data and the database is a crucial aspect of the functionality of the database, and the topic of Chapter 6.

Managing inconsistencies

The integrated database went live in 2006, after the local government's concerted efforts to amalgamate existing records for housing application and assistance requests. In 2007, a process was launched nationally by the Department of Human Settlements to ensure that all South Africans needing assistance were registered. Known as the Nkonki drive, an additional 150 000 applications were added to the database through this nationally-driven registration process (Hartley 2005, 2006; Msimang 2005b; Maposa 2005), raising the database numbers from 260 000 families to almost 400 000 (Powell 2006), as can be seen in Table 5.3, which, like the tables in the previous sections, was generated through data from government documentation as well as newspaper articles.

Table 5.3 demonstrates the sudden increase in housing applicants in 2006. The significantly different number of people waiting for state assistance was shocking to senior officials at the City and had broad bureaucratic and political implications. The housing crisis had been "seriously underestimated" (Powell 2006). Not only did this reflect poorly on the City of Cape Town, an opposition-run municipality, and its ability to manage its housing demand, but it also meant that planning for housing growth had been based on incorrect figures. Unsurprisingly, given the substantial increase in the number of people waiting for housing, the validity of the data held within the database was questioned by political parties and non-governmental and community organisations, with the critique playing out through the press. The inflated numbers meant that the City was concerned about "land invasion threats" as a result of the huge numbers of people waiting long periods of time for housing, a concern that was directed at the national government as the funders of housing projects (Steenkamp 2006).

Table 5.3 Housing need and demand numbers, populated from government documentation and newspaper articles, 2001–present

Year	Number of people waiting	Additional notes of interest	Units built per year	Source
2001	300 000	33 000 families	10 000	(Johns 2001)
2003	250 000+	25 000		(Schroeder 2003)
2005	265 000		The City says it can build 11 000 units a year	(Merten 2005)
2005	150 000			(Marrs 2005)
2005	140 000			('Politicians accuse each other of racism as the homeless wait' 2005)
2005	260 000	25 000	'barely reached' 10 000	(Ensor 2005)
2006	250 000	16 000		(Paton 2006)
2006		48 000		(Dentlinger 2006b)
2006	400 000		Planned 8 000 units	(Hoffman 2006)
2009	322 619	20 400	9 000	(Malnick and Bamford 2009)
2011	346 562			(Geldenhuis 2011)
2013	200 000 people			(Barnes 2013)
2014	276 000			(Phakathi 2014)
2017	300 000+			(Sesant 2017)
2017	321 873			(Maregele 2017)
2017	320 146			(Payi 2017)

The addition of the Nkonki dataset prompted a series of checks across the database. Housing portfolio committee meeting minutes indicate that there was a request that the database be opened to “public scrutiny” (City of Cape Town 2006a). To maintain the integrity of the data and respect for the personal nature of the application information, public scrutiny of the database was not permitted. However, the Housing Committee agreed to “test” the consolidated housing lists, and in doing this, would surface any duplication of records (Powell 2006). The furore around the Nkonki dataset’s findings rippled through the department for some time, and numerous press articles reflect on the shortcomings of the City’s process of housing waiting list integration (Powell 2006; Steenkamp 2006; Dentlinger 2006b; Dentlinger 2006a).

The materialisation of the additional records from the Nkonki dataset also proved to be something of a challenge to integrate into the supposedly already integrated housing database. A report to the housing portfolio committee reflected on the possibility of generating duplicate entries in cases where “the machine cannot make conclusive matches on the basis of the data quality in the two systems [the City’s and the Nkonki dataset]. The process would then keep both, one from each dataset” (City of Cape Town 2006b: 3).

Furthermore, given the importance of registration date in the eligibility criteria for housing allocation, the Nkonki dataset additions would “appear at the end of the list” (City of Cape Town 2006b: 3). The effects of these data discrepancies were not recorded in this report; however, the effect on the number of applicants waiting for housing was. Figure 5.11 reveals how the addition of the Nkonki dataset affected the number of applicants on the City’s integrated database. The report stressed that the number of applicants was not 400 000, as reported in the press, but was closer to 280 000 applicants (City of Cape Town 2006b).

Despite this politicised induction of the housing database, work continued to improve the technology, albeit under the radar. Housing portfolio committee meetings indicated the ‘work in progress’ nature of the database, constantly changing to improve its functionality – features such as the user interface changed; the database was updated to include new technology additions such as automated application status checks queries either by SMS or online; and a remote-use option was developed so that applications could be captured outside of City offices (City of Cape Town 2007).

Council's Housing DataBase		259087	Total Records
	minus	51206	Applicants already assisted
	minus	54861	Applications already cancelled
	equals	153020	Applicants still waiting assistance
Nkonki database	plus	148 451	Applicants who registered in the registration drive interested in a housing opportunity
	equals	301471	Total of both databases
	minus	22086	Duplicate applicants based on id nos
	equals	279385	Total applicants on record still awaiting housing assistance

Figure 5.11 An extract of the tallying of applicant numbers based on the integration of the Nkonki dataset into the City's Housing database (City of Cape Town 2006b: 3)

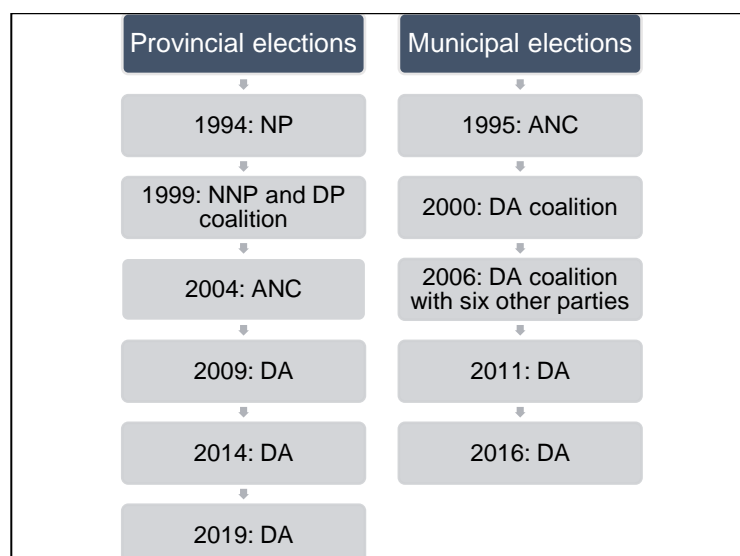
Between 2007 to 2011 the housing database fell from the agenda of Human Settlements portfolio committee meetings, with other matters taking priority. However, there is one exception to this, a newspaper article published in August 2009, which alleged that the City had inflated the number of those waiting for housing opportunities. The article prompted a response from the relevant officials to the housing portfolio committee in the following month's meeting (City of Cape Town 2009a). The report clarified the numbers in the database and explained the process that was undertaken to integrate the databases of the previous sub-Council authorities; provided an update on the actual numbers of those waiting, those who had been assisted by the City (or previous substructure), and those whose applications had been cancelled.

The relevance of the article is unclear in that it does not seem to be a response to anything in particular, and the attention that it garnered from the portfolio committee is also puzzling. A hunch is that the article reflected party politics at the time – political mudslinging around housing delivery is a perennial newspaper staple.⁷ However, the City of Cape Town's rebuttal of

⁷ Cape Town, and the Western Cape more generally, have a particularly complicated party politics history. Africa explains that while national voting outcomes have been “predictable, returning the African National Congress (ANC) to power with large majorities, outcomes in the Western Cape have been far less predictable, with all democratic elections being highly contested” (2010: 5). While a discussion of the South African state's political transition is beyond the scope of this thesis (for further reading, see Saff

the article in the following portfolio committee meeting minutes (City of Cape Town 2009c) proved useful for showing precisely how the City had come to integrate the housing waiting lists in the past, provided updated numbers of those waiting for housing assistance, and in so doing, reflected on the legitimacy of the database as the local government’s way of managing housing allocation fairly. Despite not being a public response to the newspaper article that questioned the ‘inflated numbers’, the response within the meeting minutes is performative of a justification of the process of managing housing applications and the process of waiting.

1998; Watson 2002; Okecha 2011), the party politics of the City of Cape Town are important to consider because of how they have shaped discourse on housing delivery in Cape Town. Given the South African state’s mandate of service delivery, there is a close relationship between housing delivery and political campaigns – with political campaigns often being built around service delivery through the emotive infrastructure that is housing, and in so doing, addressing the housing backlog (ANA reporter 2019; Merten 2019). With the first democratic elections in 1995, the Central City of Cape Town, the overarching body of the Cape Metropolitan Area, was won by the ANC, which thus placed it in opposition to the Provincial leaders, the National Party, elected the year prior in the first democratic provincial election (Africa 2010: 10). Between 2000 and 2006, Jolobe (2007: 78) argues that the “Cape Metro’s first term in the new system of local government was characterised by a crisis of governance and institutional instability” as a result of various coalition governments as well as floor-crossings (see Jolobe 2007 and Cameron for 2003 for more precise details of these political arrangements). By late 2000, the Democratic Alliance (DA) “won a comfortable majority of seats on the new uni-city” (Cameron 2003: 53), while at the time, the Province was governed by a coalition between the New National Party and the Democratic Party (Africa 2010: 16). By 2004, the Provincial governance had shifted to the ANC (Africa 2010: 20). Local government elections were held in 2006, where, as a result of no party obtaining a majority, a seven-party governing coalition was established, including the DA (see seat calculation reports, <http://www.elections.org.za/content/Elections/Municipal-elections-results/>, accessed 22 October 2019). In 2011, the City continued to be governed by the DA, while the province had since 2009 been governed by the DA. 2016 local government leadership was maintained by the DA, while the DA had maintained leadership at the provincial level during the 2014 provincial election. This leadership arrangement continued into 2019, where the DA leadership of the Province remained stable. The local government’s leadership continues to be DA led. See figure below.



This section has shown first how the housing database was conceptualised through the merging of the local government 'substructures' waiting lists prior to 2001, and how the housing waiting need and demand numbers have grown as a result of this merging. It also outlines the local state's response to the growing numbers in a context where it has become apparent that demand far outweighs supply. It has demonstrated the complexity of managing this integration, coupled with the external influences of the national drive for registration that was tested in Cape Town. The section also shows how the City uses the visibility of the database in particular ways, 'performing' political and bureaucratic legitimacy through the database at particular points, usually when the integrity of allocation decisions is questioned.

Conclusion

This chapter has focussed on the development of the housing database as the key tool through which housing allocations are made by the City of Cape Town. To understand the context in which the database was developed, the chapter outlines the predecessors of the database, namely the housing waiting lists that were used across the city in different ways, from the race-based neighbourhood lists that were compiled at various points in the 1980s and even prior to this, to the place-based lists of the early 1990s, to the democratic and theoretically desegregated waiting lists operated by the municipal sub structures of the Cape Metropolitan Area in the mid-to late-1990s.

The chapter documents the computerisation of the early housing waiting lists, from the application forms to the waiting lists. While the chapter captures the challenges of this process, most of which continue and are now associated with the challenges of data management, the chapter also demonstrates the benefits that the computerisation process presented, from the ability to report more easily, as well as to plan for the future, desegregated city.

Finally, this chapter presents a contextualised development of the housing database over time. Because housing delivery and allocation were local government matters, the development of tools of housing allocation are closely intertwined with the changes in local government structure during this tumultuous time of regime change in South Africa. As a result, this chapter reflects on the development of the housing database as part of the local government's institutional shifts over this 30-year period. The chapter traces the relationship between housing allocation and local government shifts, from the changes in local government bodies in Cape Town, to the reconfigurations following new municipal boundaries, and how the housing waiting lists had to be similarly reconfigured according to new areas. Furthermore, the chapter illustrates the state's use of technology to improve the ways data were managed.

Through the narrative of the intertwining of local government entities and the processes of housing allocation, the chapter hints at the ways in which the housing database is not simply a tool of politics, but rather a mode of politics, to follow Hecht's (2011) formulation – an instrument that is neither neutral nor rational, but a politically inscribed mode of governance, even if it is invisible beyond its public invocations. The following chapter builds on this contention of the database and the data within it being invisible, and through an examination of the production of the data, shows how data are imagined, produced, maintained, and processed to facilitate allocation decision-making.

Chapter 6: Capturing, collating, and cleaning data: Producing and maintaining the database

Introduction

In the context of scarce state resources and extensive demand for assistance, housing allocation processes are fraught. The allocation of houses to successful applicants is therefore accompanied by the denial of assistance to many more housing applicants. Who, then, becomes a beneficiary is political, and the state's decision-making process for making allocation decisions is placed under scrutiny. It is these circumstances, as well as considering the historical inequalities in housing allocation practice, that the state's pursuit for fair allocation relies on seemingly neutral data-based technologies like the housing database that produce apparently objective allocation decisions. In this context where citizens' need for housing outweighs the state's provision of them, the use of data and in this case, the database as the technological tool used to deliver houses, are two ways in which the state ensures that housing allocation takes place fairly and transparently through technical interventions.

Data are positioned globally as the answer to modern policy decisions – described by Gitelman (2013: 1) as the bedrock of modern decision-making, data are seemingly objective, self-evident, the fundamental stuff of truth – a faith in neutrality, autonomy and objectivity. But data are not, as is easily assumed, neutral. Instead, data are socially constructed, shaped in the ways in which information is collected, organised and managed. Data are therefore situated representations of problems defined according to particular logics, assumptions, rationales, actors, and time periods. Yet these specificities that exist behind the social imagination and creation of data are typically opaque. In the local context, positioning the housing database's decisions as unquestioningly 'fair' presumes the data as technical, embodied, neutral devices that can

produce apolitical decisions. In this chapter, I problematise the data that populates the database. I do this by making visible the processes by which data are produced and maintained, cleaned and standardised, in order for the data to be useful for allocation purposes over long periods of time.

The central role of data in the allocation of housing is clear. Allocating housing through a data-driven decision is a core component of the state's commitment to "fair, transparent, equitable housing allocation of housing opportunities to qualifying applicants" (City of Cape Town 2015: 8). This chapter challenges the conceptualisation of data as objective and shows how data are shaped by the state in particular ways, from the collection of application information, the standardisation of this information into a database-suitable format, and the cleaning, maintenance and preservation of the data.

The previous chapter focussed on the development of the City's housing database from the waiting lists that preceded it, demonstrating that the development of technology for decision-making is not acontextual or apolitical. Developed in the context of amalgamating existing housing application data, the database was implemented as a tool used by the state for efficient state practices and as a seemingly impartial intermediary for making allocation decisions.

This chapter shifts to the state's work in imagining, producing and using the data within the database, and problematises the data that silently underpins the 'just and transparent' process of housing allocation as imagined through the housing database at the local scale and beyond in the Western Cape housing demand database at the provincial scale and the National Housing Needs Register at the national scale. This chapter considers the provenance of the data, as information provided by applicants in their application forms; the process by which this information becomes data as it is incorporated into the relational database; the work that goes into the cleaning and maintenance of the data; as well as the protection of the data; all of which

are critical for the deployment of the housing database – despite the database being used varyingly and selectively. This chapter examines how housing demand data comes to be, exploring how this data are collected and shaped by the state in particular ways envisaged to be useful to produce outcomes that are considered to be fair and transparent, and therefore legitimate.

The application process: Citizens' request for assistance

The state's production of housing demand data starts with applicants' completion of an application form. The process involves obtaining the form, compiling the supporting documents, and accessing the City's offices in order to submit the application and for officials to capture it. This section starts to show how data are shaped through the state's processes of imagining what might be useful for applying eligibility criteria to applicant's data.

While the democratic state's commitment to addressing the injustices of the past has focussed on a large-scale housing development project, the state's role in housing those in need of assistance predates the end of apartheid. The need to register to become a housing applicant is therefore well known by citizens. The difficulties of applying for housing in the past have been documented elsewhere – the long queues at housing offices located far from home; being sent home because applicants failed to bring the correct documentation with them; shifting processes and places to apply and update application information as institutional realignments were effected on the ground (Greyling 2012). Nevertheless, the process around applying for housing is often considered to be an unremarkable one, and therefore goes undocumented. Despite this, the struggles experienced by applicants to apply for housing have been taken into account by the City of Cape Town. Recognising that applying for housing is a right afforded to citizens, the local government has strived to make the application process simpler. Here, I outline the process of application.

Obtaining an application form: From online to face-to-face interactions

Housing applications are made through the local government. In Cape Town, applying for housing means completing the housing assistance application form. This form, which has changed both in substance and design over the various iterations of government, collects information from applicants in order to register their application (see the following section of the chapter for a more detailed discussion of this form).

Recognising the challenges experienced by housing applicants to get to City offices to fill in and submit their applications, the City of Cape Town has made the forms available in a number of ways. The form can be downloaded from the City's website⁸ (to print and complete independently), or alternatively applications can be made (or registration details checked) through the online interface on the City's website (housing official, CCT, 8 November 2017) (see Figure 6.1)⁹.

Housing application forms can also be obtained and completed at any of the 26 local housing offices.¹⁰ The blue pins on the map in Figure 6.2 plot the locations of the housing offices across the city (the municipal boundaries are depicted by the grey line). The map shows clearly that the housing offices are not evenly distributed spatially across the city. This is because many of these housing offices are legacies from the apartheid era, when, following the implementation of the Group Areas Act, new estates like Valhalla Park, Bonteheuwel and Khayelitsha were developed on the peripheries of the city to house the working class coloured and black populations. These housing developments comprised a significant portfolio of the city's rental

⁸ See <http://www.capetown.gov.za/City-Connect/Register/Housing-and-property/Register-on-the-housing-database/Register%20on%20the%20housing%20database>, accessed 20 February 2020.

⁹ <https://web1.capetown.gov.za/web1/HWL2012Online/>, accessed 21 February 2020.

¹⁰ The housing offices fulfil a range of bureaucratic functions besides managing the initial housing application process. Neighbourhood level officials here have cash offices for rent and water payments; debt management services, grant advice, and maintenance requests.

stock, particularly in formerly coloured areas.¹¹ Housing offices accompanied these developments to enable the management of council property, to ensure that rents and utilities were paid by tenants, and to log and fulfil maintenance requirements. In later years, the officials in these neighbourhood-level state offices would assist with housing applications and the allocation of rental housing according to the allocation system that the area was using. The blue pins in Figure 6.2 reflect, to a certain extent, the coverage of housing offices in the areas formerly segregated for coloured (across the Cape Flats and Atlantis) and black (in the original townships, which had separate government administration as Black Local Authorities, specifically Langa, Nyanga and Gugulethu) residents of Cape Town.¹²

Figure 6.1 The City's online housing database interface (accessed 28 January 2020)

The spatial distribution of the housing offices, when viewed alongside the city's municipal boundary, shows that the extent to which the city has grown since the end of apartheid. The city boundaries far exceed the cluster of housing offices that are distributed across the southern

¹¹ The City of Cape Town managed a large rental stock in the past. Although there have been considerable drives to sell this stock as it is expensive and difficult to manage (see Butcher and Oldfield 2009), the housing offices where tenants would pay rent, log maintenance requests, apply for state assistance for housing, still exist in many of these places.

¹² The housing offices are costly to staff, and often under threat of closure (City of Cape Town 2012). Yet their existence is validated by the City of Cape Town as a way of citizens accessing the state.

suburbs in particular. The City of Cape Town has attempted to address this historical disposition using strategically-placed walk-in centres and a mobile unit.

There are two walk-in housing centres at the City's offices, one in Wale street in the central business district, and the other in Parow, which is more conveniently located for housing applicants who live in the northern suburbs. These offices are equipped to assist with housing applications (distribute application forms, accept application forms and process updates to information), as well as deal with general enquiries. There is also a housing information kiosk at the City's Civic Centre in the centre of Cape Town, which handles similar queries.

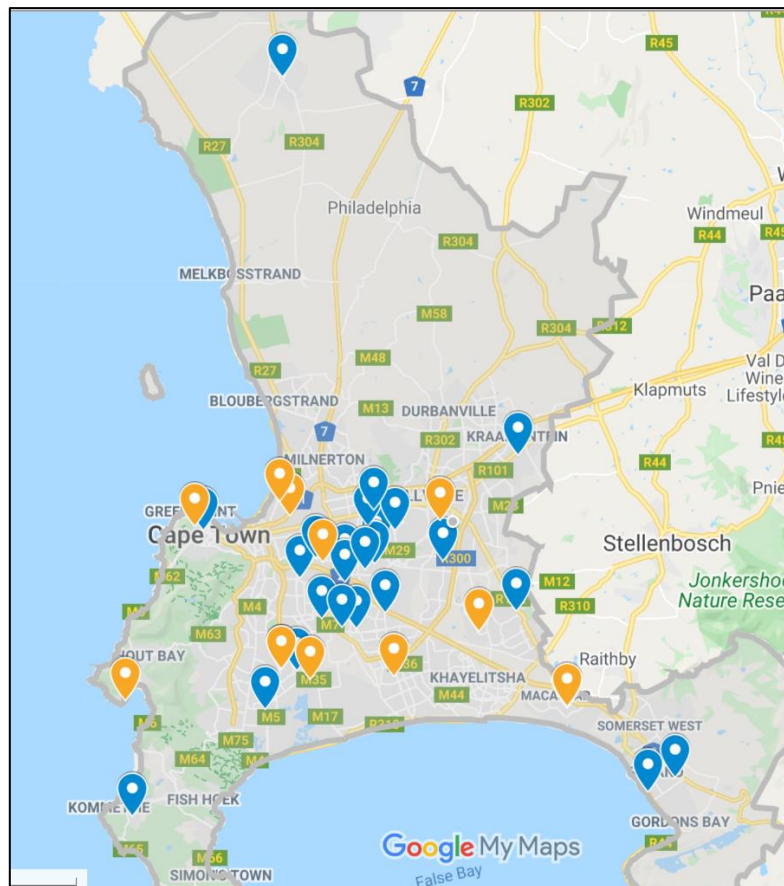


Figure 6.2 Map to show the location of CCT's housing offices across the city¹³

¹³ I created this map on mymaps.google.com. The plotted points represent housing offices across the City, the information for which comes from the City's website (see <http://www.capetown.gov.za/Family%20and%20home/See-all-City-facilities/Our-service-facilities/Housing%20offices>, accessed 20 February 2020). The grey line denotes the City's municipal boundary, and was obtained through the municipal demarcation board

In addition to these walk-in centres, there is also, as of 2017, a mobile housing office that is situated at predetermined spots across the city. The mobile office (illustrated in Figure 6.3) is branded as part of Cape Town’s vision of being an inclusive city, “bringing the City of Cape Town’s housing office to you...” (City of Cape Town 2020b), and on the website, specifying that the mobile office “provides services to residents who do not have access to a housing office in their area” (City of Cape Town 2020a). The mobile office’s locations are depicted by the orange pins in Figure 6.2. It is apparent that most of these locations are located some distance from physical housing offices.



Figure 6.3 The City has introduced a mobile housing office, which stops at set locations in the mornings and afternoons to deal with housing matters (City of Cape Town 2020b)

The mobile office’s schedule (see Figure 6.4) is available to download from the City’s website.

The “office on wheels” is available on weekdays between 9:00 and 15:00.

While the mobile unit is an innovation put into place by the city to target residents living in areas where there is no permanent office, the office on wheels does have a few shortcomings. An

(<http://www.demarcation.org.za/index.php/downloads/boundary-data/western-cape-4/city-of-cape-town-cpt/google-earth-kmz-file-26>, accessed 20 February 2020). The intention of the map is to show the uneven spatial distribution of housing offices across the city. The points on the map are therefore approximate, rather than exact locations, because the precise locations are not apparent for all the housing offices.

official mentioned that “some safety issues had been overlooked” – although she did not elaborate on whether she meant the safety of the data, or the safety of the housing officials who sit in the mobile unit. A further concern that she pointed out was that:

people expect a degree of confidentiality, because I can’t discuss your bad behaviour or your lack of rent payment and expect your dignity to be in tact when you walk out of here and your neighbour heard all this... now you’ve got this mobile unit and there are four seats there and you’re now supposed to discuss [the intricacies of housing applications, rent disputes and so on]...

neighbourhood housing official, CCT (14 December 2017)

FEBRUARY 2020				
Monday	Tuesday	Wednesday	Thursday	Friday
3 February 2020	4 February 2020	5 February 2020	6 February 2020	7 February 2020
Macassar 09:00 - 12:00 Mitchells Plain 12:45 - 14:30	Hangberg Centre 09:00 - 14:30	Albow Gardens 09:00 - 12:00 Langa 12:45 - 14:30	Bellville South 09:00 - 12:00 Mfuleni 12:45 - 14:30	Lotus River 09:00- 10:30 Parkwood 11:00 -13:30
10 February 2020	11 February 2020	12 February 2020	13 February 2020	14 February 2020
Macassar 09:00 - 12:00 Mitchells Plain 12:45 - 14:30	Hangberg Centre 09:00 - 14:30	Albow Gardens 09:00 - 12:00 Kensington Sportsfield 12:45 - 14:30	Bellville South 09:00 - 12:00 Mfuleni 12:45 - 14:30	Lotus River 09:00- 10:30 Parkwood 11:00 -13:30
17 February 2020	18 February 2020	19 February 2020	20 February 2020	21 February 2020
Macassar 09:00 - 12:00 Mitchells Plain 12:45 - 14:30	Hangberg Centre 09:00 - 14:30	Albow Gardens 09:00 - 12:00 Langa 12:45 - 14:30	Bellville South 09:00 - 12:00 Mfuleni 12:45 - 14:30	Lotus River 09:00- 10:30 Parkwood 11:00 -13:30
24 February 2020	25 February 2020	26 February 2020	27 February 2020	28 February 2020
Macassar 09:00 - 12:00 Mitchells Plain 12:45 - 14:30	Hangberg Centre 09:00 - 14:30	Albow Gardens 09:00 - 12:00 Kensington Sportsfield 12:45 - 14:30	Bellville South 09:00 - 12:00 Mfuleni 12:45 - 14:30	Lotus River 09:00- 10:30 Parkwood 11:00 -13:30

Figure 6.4 The City’s mobile housing office’s schedule for February 2020

Despite the official’s concerns regarding the privacy of residents, the mobile office is being used by the public. Just weeks into its existence, the official reflected on the tasks undertaken by the mobile unit’s staff.

...they saw 19 people who came in to report maintenance, they saw four people who came to apply for indigent relief, they saw four people whom we had asked for identity

documents, because we need it to capture their ID numbers for the debt management section. They saw one person who had a public liability claim against the City because one of the windows in one of the blocks of flats fell out onto his car... and then we had a new lease agreement that had to be signed... and we had two visits to the office because people wanted to come and chat about indigent relief, then they had to do two visits in the area, because the people couldn't walk to the office... and then there were two applications for the housing database.

neighbourhood housing official, CCT (14 December 2017)

The role of the officials in the mobile office is broad and encompasses a number of tasks for three hours in the given location. Clearly, the mobile housing office is a worthwhile innovation by the City to ensure that more citizens can exercise their right to apply for housing, even if the official's example implies that the mobile unit is used more frequently for matters besides housing applications.

In addition to these various online and offline solutions, the City of Cape Town, in collaboration with Provincial Government, also organises registration drives. The most recent drive, advertised in the media and through a press release on both institutions' websites, took place over the weekend, allowing those who work during the week to sign up with the assistance of officials. The Housing Demand Database Verification and Registration Drive takes place in community centres and halls across the city, and is envisioned by the state to "ensur[e] that we [government] have a comprehensive and credible database of all who require assistance from Government" ("Human Settlements and City of Cape Town collaborate in housing database drive" 2020). Although the focus in the press release is the accuracy and currency of the application data, the registration of new applications is also a motivation for the initiative.

Accessibility to the state is something that the City has worked to improve. Together, the registration drives, the walk-in centres, and the mobile office ensure that citizens have access to the housing office, and therefore improved opportunities for applying for housing assistance from the state. In order to make their housing need known, applicants are required to complete a housing application form.

Compiling an application

Through any of the options outlined in the section above, housing application forms can be collected, completed, submitted, and captured by an official, where the form goes through a process prior to being uploaded to the database (this process is outlined in the following section of the chapter).

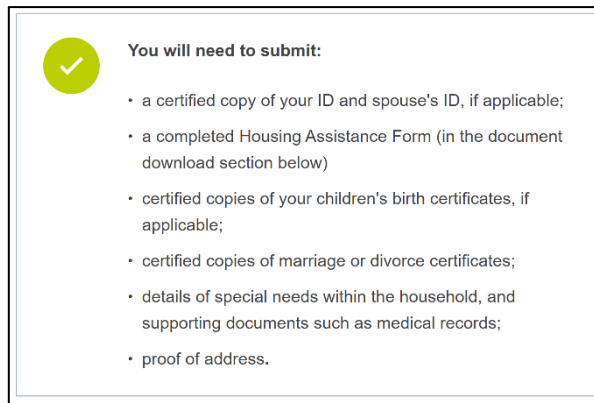


Figure 6.5 The City's requirements for the submission of a housing application (<https://www.capetown.gov.za/City-Connect/Register/Housing-and-property/Register-on-the-housing-database>; accessed 27 January 2020)

The housing application process is on the surface a simple one, as Figure 6.5, an image from the City of Cape Town's website, would suggest. The box outlines the documentation required to make a housing application. The box that appears on the website implies that application is simple. Similarly, the banality of the process of applying for housing suggests that doing so is an easy, mundane bureaucratic task. However, framing the process as a simple one conceals the challenges that may confront citizens in their process of becoming housing applicants.

Accessing and understanding the application form is less of a concern. The application form itself strives to make the process simpler. It is available to applicants in three languages, – English, Afrikaans, and isiXhosa – a bureaucratic recognition of the need to make the application process inclusive in terms of language. The wide availability of the form is also an attempt to simplify the process. For those who cannot complete the form (if they cannot read or write, for example), housing officials are able to assist (neighbourhood housing official, 14 December 2017). There are two aspects that are challenging for applicants: the first is recording changeable living circumstances onto paper, committing unstable solutions to a static representation of life; and the second is furnishing the supporting documentation to catalogue these living situations. Thus, the realisation of compiling an application is not quite as simple as it appears, requiring information not only on the applicant, but also the other members of the

applicant's household. In addition, supporting documents that prove the information that goes into the application are required.

Citizens who apply for housing from the state do so because they need housing assistance. Given the long-term structural deprivation of people from cities and amenities during the apartheid era, housing applicants tend to live in situations of precarity. The places in which they live are often unstable solutions to shelter. In Cape Town, the three most common solutions for accommodation while waiting in the long term include living in overcrowded houses (often rental council houses), often with several generations of family living under the same roof; living in dwellings erected in the backyards of council houses (where either the space or the shelter itself is rented, either from family members or strangers); or living in an informal settlement, where there may be more privacy, but life is lived with great insecurity – if the informal settlement is recognised by the City, it may be provided with access to basic amenities such as sanitation, water and electricity (Greyling 2012). If it is not recognised, the threat of eviction is high.

In each of these living situations, the chance of disaster is high (Pelling and Wisner 2012). Fires in particular ravage a significant number of homes erected in the circumstances described above, and the effects are devastating, resulting in loss of life and possessions. In such circumstances, the documentation of life – birth certificates, identity documents, marriage certificates, medical records, and proof of address – is extremely difficult to safeguard (Rasmussen and Wafer 2019). Although the state is all too aware of the realities of living in such conditions, and takes this into account in particular ways,¹⁴ this leniency is not apparent in the housing application process. While the strictures around supporting documents for housing

¹⁴ See for example how the state ensures that citizens are not 'disenfranchised' as a result of shack fires in the run-up to elections (Hartley 2004).

applications may be more lenient in practice,¹⁵ the official representation of the process suggests that such supporting documentation is required at the point of application. In sum, what looks like a mundane process of application to officials and researchers alike, may instead be more of a challenge to those who live in precarious conditions.

The housing database has been designed as a direct response to the unjust ways in which housing was allocated in the past. The City therefore requires that housing applicants prove their need through the submission of supporting documents. The City's requirements for supporting documents, as well as the request for certified copies of these documents, are indicative of the need for ensuring the validity of applications. More than simply a bureaucratic requirement, certification of the documents – a process signifying that the document is a true copy of the original; in South Africa this is fulfilled by a Commissioner of Oaths – ensures that the supporting documents submitted to the state have not been altered by the applicant. The need for certified copies of the documents points to the state's commitment to fair process, and to avoiding corrupt practices that could arise through the altering of documents. This state concern regarding the potential for corruption of housing allocation practices is deeply rooted in the problematic allocation practices of the past, as well as the rhetoric of the potential for corrupt allocation practices at present (Rubin 2011). However, for the applicant, getting documents certified requires access to office equipment to make copies (usually through work, a public library, or a post office), and then approaching a Commissioner of Oaths to certify the documents (typical places to do this would be at a post office or in a police station). The certification process is therefore another step in the process of application that is concealed from most officials. Although none of the officials reflected on the supporting documentation requested online, several did note that the only eligibility criteria checked at the point of

¹⁵ Because it is such a mundane aspect to the housing application process, this actual process of application was not reflected on by officials, and I did not think to ask. This is a replication of the erasure of the complexities of the process. The mundanity of the process makes it seem, to officials and to researchers like me, that it is straightforward, when the reality is more complex.

application was that the applicant resides in Cape Town. However, whether or not the supporting documentation is required at application, is unknown.

APPLICANT'S PERSONAL DETAILS <i>(please attach copy of identity book)</i>												
Surname												
First names												
Identity number (ID Number must be given)												
Date of birth	Year		Month		Day							

Figure 6.6 A section of the application form collecting the applicant's personal details

The first section to be completed by the applicant makes enquiries regarding the applicant's personal details (see Figure 6.6), including name, identity number (which shows citizenship or permanent residency) and date of birth (age). The same information is required of the applicant's partner. Applicants have to be South African citizens or have permanent residency. And although applicants need to be over the age of 18, officials have noted that age plays a role in the allocation of houses. While priority is given to senior citizens in particular, a senior official noted that according to a government circular, only people over the age of 35 can be accommodated. He noted that when he is provided with the initial long list of potential housing project beneficiaries for a particular project, his first process to narrow down the list is to remove those under 35 years of age. "First thing I do is take them out, because it's not going to happen" (senior housing official, 8 November 2017). In 2014, Lindiwe Sisulu, then Minister of Human Settlements stated publicly that anybody under the age of 40 was not the state's priority. She argued that "Our [the state's] intention in giving free houses was to right the wrongs of the past and make sure that we can give our people dignity. And that group of people is not the people below the age of 40" ('No free housing for under 40s - Sisulu' 2014). While this statement was widely criticised, the point it makes is that eligibility criteria have to be considered by the state, and age is a factor in the state's estimation of housing need. Age is therefore a critical piece of information to be gathered by the housing application form. Age is

proved through the applicant's identity number, the first six digits of which are always the date of birth of the applicant (year, month, date).¹⁶ Interestingly, the gender of the applicant is not explicitly required by the application form, despite the National Department of Human Settlements' prioritisation of female-headed households. While officials could determine gender through the identity number of the applicant, this is a curious omission.

The form then asks for the residential details of the applicant (strictly in the sense of an address, rather than an account of the living conditions) (see Figure 6.7). As noted above, the state's request for an address is not a simple request. The need for this information is unknown to applicants: is it because the state may want to send a letter? Or is it so that the state knows where and how you live in the meanwhile? Informal settlements are often not recognised, and backyard shacks are not recognised formally as a subdivision, and therefore are not numbered accordingly. Relations with the landlord in the formal house to which your dwelling is attached may not be sufficiently friendly to use their fixed address. And the 'permanent temporariness' (Yiftachel 2009) of lives lived in wait mean that applicants often move around, meaning that a contact address can change fairly often.

For applicants, the negotiation between having the state know where and how you live as recorded through the provision of an address, has to be balanced with the consideration that letters from the state may not get to you if you give an informal settlement address, or have moved since applying, or if you have a bad relationship with your landlord, who may choose not to hand over any correspondence. The application form asks if the applicant lives in an informal settlement, and if so, how long they have, but the reason for this question is unclear. What seems to be a simple bureaucratic requirement for officials who live in stable conditions, is a difficult component for applicants to navigate, who know that they may have to move on from their place of residence at any given time.

¹⁶ For more information on South African identity documents, see Breckenridge (2014).

The following section on the application form determines the marital status of the applicant (see Figure 6.8), including various types of marriage as well as common-law partners, divorced, separated or 'partner deserted' applicants, single with or without dependents, and engaged to be married. The form also records the dates of marriages and divorces or splits. While the living arrangement particulars are not recorded, the level of detail offered in the marital status section suggests that this is an important consideration in the weighting of eligibility determinations. The qualifying criteria to be eligible for assistance from the state require that applicants under 60 are either "married or cohabiting, or have dependents" (City of Cape Town 2020c).

MARITAL STATUS (Mark with a cross X)													
Married in community of property						Divorced with dependants							
Married by antenuptial contract (out of community of property)						Separated, or partner deserted, with dependants							
						Single with dependants							
Customary marriage or Muslim marriage						Single without dependants							
Common law partner						Engaged to be married							
Widowed													
Date married	Year		Month		Da y	Date divorced/ split	Year		Month		Day		

Figure 6.8 A section of the application form collecting information of applicant's marital status

The application form also collects information regarding any disabilities in the family (see Figure 6.9). These disabilities fall under the categories of walking, hearing, vision, and use of the upper body limbs. This information is used by the City to consider whether the application should be considered a priority case, which in theory should mean that the applicant could be assisted faster. The City's allocation policy specifies that those with special needs take priority when it comes to allocating houses and knowing the details of the applicant's disability should allow the City either to plan accommodation that is suitable, or ensure that suitable accommodation is offered to those with particular needs.

DETAILS OF ANY DISABILITY IN THE FAMILY			
Full details of any disability or medical condition in the family			
Category	Type of disability	Degree of disability	Tick X
A	Walking	Walking Aids (e.g. walking aids, walkers, crutches, walking stick)	
B	Walking	Wheel Chair - partial - Partial Usage	
C	Walking	Wheel Chair - full time usage	
D	Hearing	Partially / profound deaf	
E	Vision	Partial / Totally Blind	
F	Limited or no use of upper body limbs	Partial/Total movement loss/paralysis in upper limb	

Figure 6.9 A section of the application form that gathers details of any disability in the family

The next section on the form collects income information of the applicant and the applicant's partner and specifies separately the income of pensioners (see Figure 6.10). There is no requirement by the City of any paperwork to prove these income levels. Several officials noted during interviews that having proof of income information was not a requirement at the point of application because income levels change over time, and an applicant's income is only relevant in terms of eligibility when an application is shortlisted for assistance.

INCOME DETAILS OF APPLICANT AND PARTNER (wife and husband)		
	INCOME PER MONTH	INCOME PER WEEK
Applicant (gross wage/salary)	R	R
Partner (gross wage/salary)	R	R
Pensioner	R	R

TYPE OF GRANT AND AMOUNT	
TYPE OF GRANT	AMOUNT PER MONTH
Maintenance	
Child/foster care	
War veteran	
Disability	
Any other regular monthly income	

Figure 6.10 A section of the application form collecting information on the income details of the applicants

The application form also establishes if an applicant receives any income from a social grant. Outlined specifically here are maintenance grants, child or foster care grants, war veteran grants, disability grants, and an open field for any other regular monthly income. While applicants may receive assistance from the state with regards to other social grants, the

qualifying criteria note that they may not have received a housing subsidy in the past. Checking the fulfilment of these criteria is part of the *allocation* process, rather than part of the *application* process. As will be outlined below, subsidy administrators check if applicants have received any housing grants at the point where a housing waiting list (not to be confused with the former waiting lists – this refers now to the shortlist for a specific project) is pulled together.

The next section collects information regarding the details of the applicant’s present living accommodation. The application form asks whether the applicant lives in the main house, flat, or hostel with the owner or tenant, in an outside room for renting, and includes an ‘other’ option with a request for further description. This section is useful to the state for planning purposes.

DETAILS OF PRESENT LIVING ACCOMMODATION (Mark with a cross X)			
In Main house/flat/hostel with the owner or tenant		Wood & iron shack	
Outside room for renting		Wendy house	
Other - please describe		Caravan/vehicle	

Figure 6.11 A section of the application form detailing the present living conditions of applicants

The following section (see Figure 6.12) asks the applicant if they or their partner have owned property before, or at present, and if so, for the address to be provided. It also asks if the applicant is a current Council tenant, and for the address if so. Once these questions have been completed, the form is signed by the applicant under a declaration that the information provided is true. The final note on the application form is that applicants should include copies and their and their partner’s ID books, as well as marriage and divorce certificates if necessary. The City of Cape Town’s website asks for additional supporting documents, including certified copies of children’s birth certificates as well as medical records (see Figure 6.5).

DETAILS OF PROPERTY OWNERSHIP				
Have you or your spouse/partner ever owned property before OR do you or your spouse/partner own property now?	Yes		No	
If yes, please give address details				
Are you currently a Council tenant?	Yes		No	
If yes, please give address details				

Figure 6.12 A section of the application form detailing any prior property ownership

The application form is designed with a particular purpose in mind. Developed by the state, the form elicits information from applicants that reflects on the national government’s stipulated eligibility criteria (see Figure 6.13). The application form is designed so that the state can ascertain the housing need of an applicant.


Qualifying criteria
To qualify to be placed on the Housing Database, you must:
<ul style="list-style-type: none"> • be a South African citizen or permanent resident; • be legally competent to enter into a contract; • be married or cohabiting, or have dependents (does not apply to applicants over the age of 60 or who have disabilities); • be over the age of 18; • have a combined income of less than R3 500 per month to qualify for State-assisted housing; • never have owned a property; • never have benefitted from a government housing subsidy before.

Figure 6.13 Eligibility for a housing opportunity as documented by the City of Cape Town (City of Cape Town 2020c)

The application form therefore collects data that enables the state to be able to make a housing allocation decision that enables the state to screen for eligibility criteria. The application form’s empty fields give an indication of the key criteria through which eligibility are determined. However, arguably the most significant aspect with regards to eligibility can be seen in the top section of the application form (see Figure 6.14), which is not completed by applicants, but is a

'for office use only' section. In this section, it becomes apparent that time is a critical component in the application and eligibility process. This section includes several references to time spent waiting: the first is the field where the applicant's registration date is recorded; the second is the placeholder for the official dated stamp in the top right-hand corner of the form; the allocated registration number on the database; and the existing application date. All of these fields imply the bureaucratic significance of the amount of time spent waiting by the applicant. As seen in Chapter 4, time spent waiting has traditionally been the most important factor in determining an applicant's eligibility for assistance from the state. While the first-come, first-served method of allocation is no longer the only factor in making allocation decisions, the registration date's prominence on the form reinforces the importance of the applicant's time spent waiting.

This section has shown that the state makes a concerted effort to ensure that residents of Cape Town have ample opportunities to exercise their right to adequate housing through to the application for housing assistance. Taking into account the apartheid spatial legacies through the locations of housing offices, the city has introduced alternative measures through which people can not only apply for housing, but also make enquires, negotiate any rental housing debts, and log maintenance requests (in the case of those who rent houses from the state, not those who have obtained a house with a title deed). The state also ensures that applicants are aware that it is free to apply for housing, and that people (officials, councillors and other government-affiliated people) should not benefit financially from assisting with the completion of a housing application form (see the statement regarding the application form being free in Figure 6.14).



CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

*This form may not be sold or bought.
 It is free from the City of Cape Town*

Date stamp when received

APPLICATION FOR HOUSING ASSISTANCE / ACCOMMODATION

FOR OFFICE USE ONLY						
Date application form was received	Year		Month		Day	
Receiving Housing official's name						
Receiving housing office's name						
Registration number allocated on the database						
Existing application date	Year		Month		Day	

Figure 6.14 An extract from the City's housing application form

The accessibility and inclusivity of the state is also widened by the provision of the application form in three languages. And the application form has been simplified to ensure that the necessary information is collected in order to be able to make an initial decision. In sum, the application process is an everyday citizen-state encounter, and although it may not always be a simple process to complete the application, the ease with which the citizens can engage the state has been a priority of the post-apartheid state. In the following section, I will examine how the database is constituted through the capturing of the application form.

From application information to housing need data: Constituting the database

This section explores the process through which the housing database is constituted from the housing applications completed by housing applicants. The database both shapes and is shaped by the information contained within the applicants' forms. Chapter 5 has already documented how the database was developed from the housing waiting lists of the apartheid era. In this

section, I reflect on the constitution of the database materially, rather than conceptually. I explain how application information compiled and submitted by housing applicants is added into the database, what Dourish and Gómez Cruz (2018) term the ‘datafication’ process, whereby information becomes data through a process of symbolic imagination. This section examines what happens to housing applications once they leave the hands of housing applicants; and outlines the processes undertaken by the state to incorporate the information held within the application form into the database.

‘Capturing’ applications, a key commitment

In light of the many problems that were associated with the dominant apartheid-era methodologies of housing allocation, including accusations and perceptions of corruption, tampering, and nepotism, the database was conceived as a safer way of holding housing applicants’ information. The database is therefore securitised. Officials have different access levels depending on their security clearance level and role in the state. Very few officials have access to the data itself – this is a security clearance that only a handful of senior officials in the Housing Information branch are trusted with. What these different access levels mean, however, is that the officials who tend to have face-to-face interactions with applicants, such as officials at the neighbourhood level offices, or the walk-in centres, or the mobile housing office, have limited access to the database, with capturing access – or ‘capturing rights’, in bureaucratic parlance – only.

Application forms are entered into the database system by officials with capturing rights. All captured applications are kept in what officials refer to as a ‘holding area’. These captured forms are screened by the head of the Housing Information branch, or one of two deputies appointed by him, for the first eligibility requirement: residence in Cape Town. The forms are sent:

to two staff members who I have allocated responsibility to, and then they look at do you live in wherever, and they either actually reject it – so if they [the officials] reject it,

they [applicants] get an SMS telling them why – and if they’re accepted, they get an SMS as well, if that field is completed, if there’s a cell number in. That your application has been received and your application date and your registration number on your cell phone and that you should keep that reference.

housing official, CCT (8 November 2017)

While applicants do not have to prove where they live, if the applicant’s current address is not in Cape Town, the application is rejected. Although the functionality of this had not yet been implemented, a senior official mentioned that in future developments of the online database tool, “we’ll only allow you to apply online if you live within the Cape metro” (CCT housing official, 8 November 2017).

Where an applicant lives is the only screening criterion examined at this initial stage of application. The staggered screening of the applications is part of the state’s implementation of fair allocation practices. In this initial screening, only those who live in Cape Town may apply for housing in Cape Town. This is to prevent applications from elsewhere, which could result in houses being allocated to people who do not reside in the city.

The rest of the applicant’s information has to align with the national eligibility criteria only at the point at which becoming a potential beneficiary is likely.¹⁷ This is another way in which the state pursues fair practices: by screening applications according to the other eligibility criteria only at the point at which a housing allocation is likely, the state tacitly acknowledges the precarity of the lives of those who need assistance. For example, applicants’ stated income is not checked through the state’s various databases until the point at which an applicant is long-listed

¹⁷ To be precise, the housing applicant’s information is assessed according to the state’s eligibility criteria only when a subsidy application is completed. This would occur at the point at which a housing applicant’s details had been selected and long listed for a particular project. In greenfield sites (where there is no existing claim to housing), this subsidy application would occur once a housing development is well under way, and once the project list of beneficiaries is compiled through the database.

for a project, and a housing subsidy application has to be submitted to the provincial department. An official reasoned why this is necessary:

Because if you apply, you earn R10 000 now, it makes no difference at all, because you're not getting a house tomorrow. So let's say five years down the line when you do get a house, your income will be R1 000, you could be unemployed or a pensioner. So I can't reject you for your income at this stage.

housing official, CCT (8 November 2017)

This delayed screening of an application's alignment with eligibility criteria is an implicit recognition by the state of the length of time that applications may linger in the database. The official's words acknowledge how changeable a person's income can be, especially over lengthy periods of time spent waiting in the database.

Once the application has been screened for where the applicant resides, the housing applicant receives notification of whether their application was successful or not. In the past, proof of successful registration would have been tangible. In the early years of housing applications, proof of registration, and consequently the time spent by the applicant on a housing list, was marked by a housing card. This proof of registration card was an important signifier of the contract between the state and the applicant: the card would be presented to the local authority whenever applicants consulted the local authority officials, either to make enquiries with regards to their place in the queue, or to update their particulars – including current address and additional dependents. However, in the electronic age, the SMS has to suffice, despite its transient nature.

From the point at which a housing application is accepted by the state, the housing application information enters the database as data. The process through which information is reimagined as data by the state is examined in the following section.

From data fields to a relational database

From this point of successful registration, the application information is incorporated into the database. The pieces of information become fields of data, collated both as a personal record of an applicant's application for assistance, but also as a decontextualized portion of the application that is added to other similar pieces of information to make an aggregated, relational database, the technical term used to indicate data that are connected within a database. From what on the surface appears to be a simple application form, seemingly transparent in its workings, the information collected through these forms, also seemingly of a simple nature, is incorporated into the housing database. Given its role as the technology through which the state makes fair and transparent allocation decisions, the database has to appear to work efficiently and in a standardised manner at scale, to be technical and neutral, and critically, apolitical. For the same reasons, the database has to be limited in its accessibility so that it can embody the qualities that make decisions fair and transparent: the validity and accountability of the data. Yet the database does not simply come to exist through the application information. Considerable amounts of work, time and financial resources go into the making of data. This section explores this social construction of data that is typically obscured behind the technological veil.

Once housing applications have been accepted for inclusion in the database, the application information, already captured by officials with capturing rights in the database format, is reimagined as data. But while it is recast as data at this point, the information becomes data much earlier in the application process. What is considered to be housing demand data is shaped at the point at which a housing application form is completed. The application form, as seen in the figures in the previous section, requests information on particular topics, in particular formats. The minimal space allotted to particular information fields implies that only

a certain amount of detail is required. The effects of these choices on the application form can be seen when examining the housing database as a relational database.

Examining the relational database shows how the different data collected through the application form are linked together to produce an articulation of housing need that is situated through the particular information types collected by the state. An official who worked closely on the integration and standardisation of the former waiting lists into the database explained precisely what a relational database is. He described a relational database as coming into being when “there are a lot of excel spreadsheets and they’re all linked together on the common key” (former CCT and PGWC official, 29 November 2016). Not simple to describe in abstract terms, he instead showed me what a relational database means in the housing database’s case. He unrolled an A0 size piece of paper that held a diagram of the database’s many spreadsheets, connected together with arrows denoting how the different spreadsheets interact. Figure 6.15 is an extract of the diagram. He explained that I ought to “[t]hink of each of these [the tables] as a separate excel spreadsheet. So here’s your main table, but then all the other tables are subsets of this, all linked on these keys” (former CCT and PGWC official, 29 November 2016).

The extract in Figure 6.15 shows some of the personal information collated on an applicant. As this is the backend of the database, the data field names are coded for the developers of the database, using shorthand – for example, MarCertRecv or HasMedCond. While other users of the database see the frontend of the database, known as the Graphical User Interface, just a few see this working side of it. The official explained that “when I talk to the IT people, I talk to them in this kind of language, in these kinds of fields here, not the language you see on the screen. They want to know the real database name...” (former CCT and PGWC official, 29 November 2016).

The ‘real’ database name refers to the backend of the database, or what I describe as its internal dynamics or insides, where the work supporting the development, integration and maintenance

of the database takes place. This working side of the database shows the extent to which the database is made, rather than simply comprised of data that is supposedly 'self-evident' (Gitelman 2013). The information has to be conceived as data, shaped into a representation of a particular issue (Jasanoff 2017: 5), in this case, the type of information that the state requires in order to make allocation decisions that are fair and transparent. The work of imagining housing application information as data, and then implementing this imagination into the shaping of information into data, is undertaken by a very small number of officials who have the security clearance to interact with the housing application data in its supposedly 'raw' form. These officials are senior officials in the Housing Information branch, as well as software developers who do the work of constructing the information as data. Moving from application information provided by applicants, to the database's field-coded version of this information, to the coded, backend version of the information reproduced as data that the allocation algorithm understands, is shaped by humans.

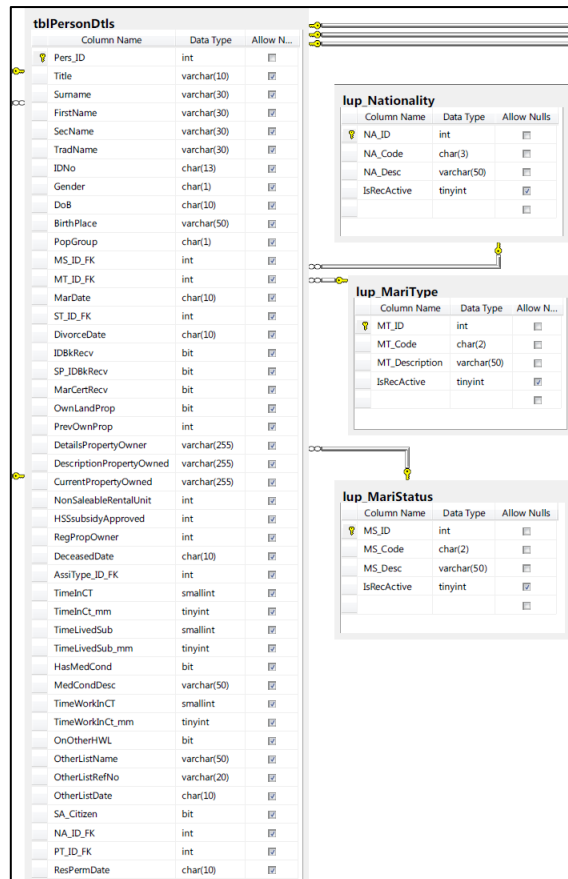


Figure 6.15 An extract from the database field linkages chart

The database is expansive, and I have included its full extent in Figure 6.16 not to show any detail, but to show the extent to which the information collected through the housing application forms becomes part of a much broader scheme of fair and transparent housing allocation practices. While each of the different spreadsheets that comprise the relational database are important, what is significant here is that the A0 piece of paper proves not only that the database exists, but that it functions. The database is a technology, but behind this conceptualisation of it, the database is a complex array of data that interact together in particular ways. Each component of the application form becomes a piece of data in the relational database's universe. Being shown this side of the database – from the extent of the single spreadsheets, to the ways in which they connect along the common keys, to viewing the developers' language of each data field behind the Graphical User Interface – offers insights into the existence of the database as a complex tool of the state, known and knowable to less than a

handful of officials. Viewing the database in the A0 format demonstrates how it does not simply come to exist from the housing application information. For each of the spreadsheets and data fields within it, the state's work undertaken by officials – capturing, standardising, cleaning and maintaining – is critical yet invisible.

While the database appears on the surface to be technical rather than political, the technical is contextual too. What exists behind the smokescreen of technology is a system that has been developed by officials to show certain aspects of an identified 'problem'. These officials approach this problem in a situated way, with their own particular agendas, taking into account particular political realities, and working around specific data shortcomings. While the A0 piece of paper that describes the database's complexities will never be seen by applicants, most officials, or other interested parties like researchers, the impression that it gives is that the housing allocation mechanism used by the state is efficient. The database's existence and its functioning is legitimated through its technological rendering. The A0 piece of paper that presents the database suggests that the decisions made using this technology are impartial and objective. But what this tactical version of the database can only hint at is the considerable amount of work that goes into producing the data in order for the technology to function in this efficient and apparently objective way.

The A0 image of the database shows that the database exists, and that it functions. It also shows that the state is committed to ensuring that process is followed in housing allocation decisions – the collation of the housing application data is a significant task and ensuring that the data are even across each application is laborious, but critical work. In the following section, I examine the work that is required to keep the database functioning. This work includes the standardisation of application information and the maintenance of the data.

Standardising the data across state spheres and scales

The process of making data workable has, in the South African context in particular, a long history that has included a conscious drive to ensure that housing data are alike across the City. Much of this narrative was detailed in Chapter 4, where I examined the process of making the database from the legacies of an institutionally segregated city. During this process, officials spent a considerable amount of time considering how best to standardise datasets that were collected, organised and managed differently across each local authority, with different eligibility criteria, primarily defined based on racial categorisation.

Narratives on the development of the housing database and the standardisation of housing need data are entwined in complicated ways, and unravelling these into two seemingly distinct, one-dimensional stories would be a disservice to the complicated nature of housing allocation policy and practice development. The entwinement of these two processes is reflected in the discursive slippages between the development of the database and the standardisation of the data in discussions with officials.

In addition, the work of producing a database that is embedded in processes beyond the local level (in this case, provincial and national registers of housing need), the production of the database requires simultaneous standardisation of data processes. Therefore, while the narrative outlined in Chapter 5 on the development of the database includes some discussion on the work required to standardise the local level housing need data, this section examines the standardisation of data from the perspective of producing data and making it workable for decision-making that is prefaced upon fairness, not only at the local level, but across provincial and national processes too.

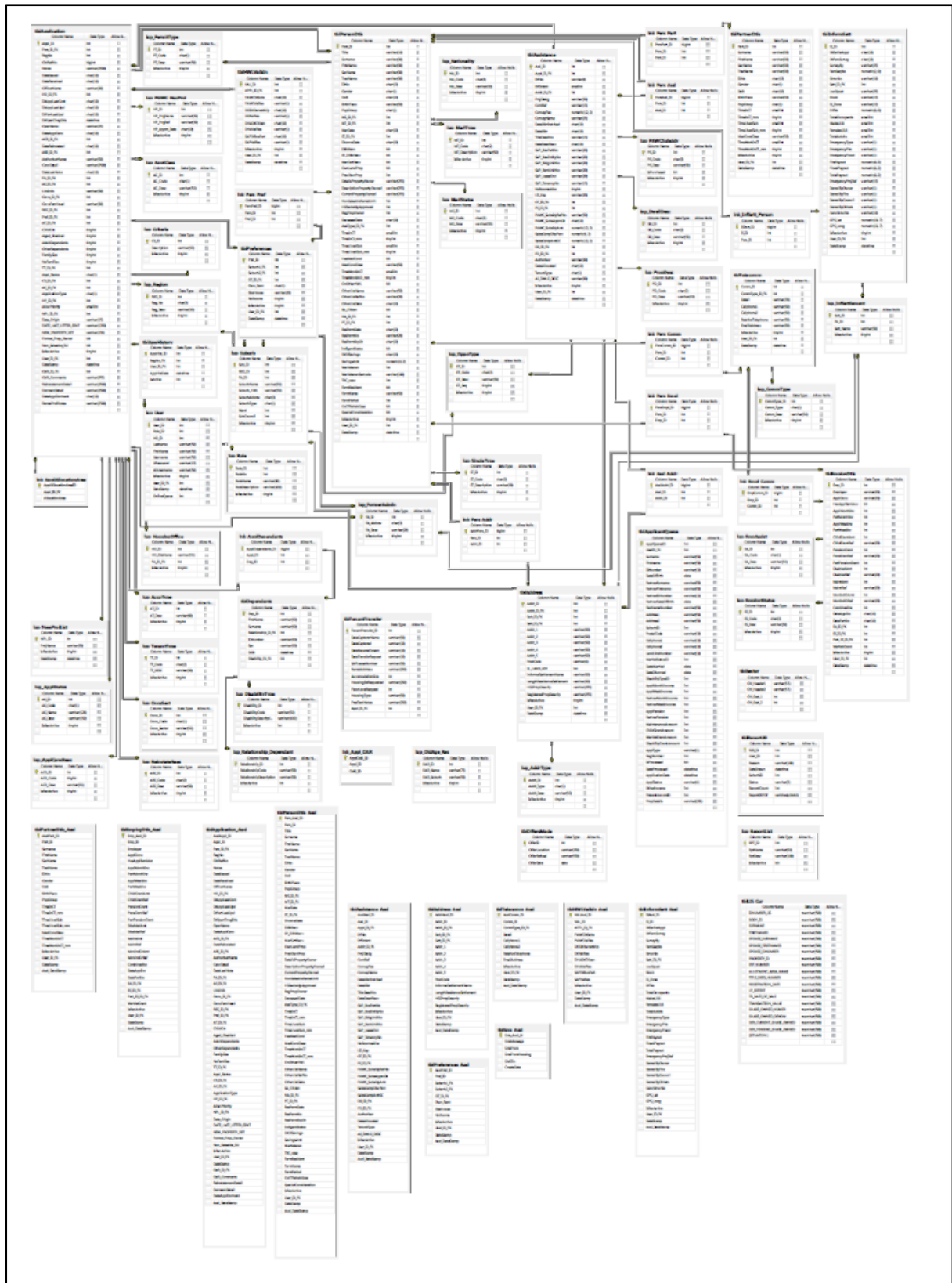


Figure 6.16 The database in its entirety

The following quote from an interview with a senior official reflects this entwinement between the development of the database and making the existing data from the previous local authority entities functionable within the single database technology. An official described the process of standardising data alongside the development of the database:

this was a long, long complicated process because it was on paper, it was on excel spreadsheets, it was on Oracle, it was all sorts of [systems]... and that took us maybe two years to get it the way that we wanted so that we could upload it... we had to build this thing and it was long, long hours... But we got it right eventually, we uploaded everybody's, all the municipalities... see that the data was correct... And tested 100 times before we actually did the final upload.

housing official, CCT (8 November 2017)

The narrative of the different existing infrastructures upon which the database was built – the paper-based waiting lists and the excel spreadsheets – is familiar from Chapter 5. The quote also points to the amount of time and effort expended to standardise the data the “way that [the officials developing the database] wanted” it. The “long, long hours” that this official reflects on are often erased from the story of the development of the housing database. Tools used by the state like the housing database are often written as one-dimensional, or ‘flat’ (Hecht 2011) and put into use in a way that obscures the amount of effort that goes into making them work.

The official also noted that he and others tested that the data interacted correctly by testing it numerous times. How the official defined the data as ‘correct’ is not clear, yet his focus on making the data function properly and the ‘correctness’ of it alludes to the importance of the data’s role. Another official also used the word ‘correct’ in relation to the housing application information and spoke about the need for the information to be accurate so that it can produce fair decisions. In explaining the process of turning application information into data, at the first screening stage, where applications are either accepted or rejected based on the applicant’s

place of residence, the official reflected on the need to ensure that the data are 'correct'. She said:

...once the person in HIB or Housing Information Branch [designated by the head of the branch to undertake the initial screening of applications], they now come the next day to their desk, and when they login, they'll get a notification to say there's 20 people who applied, and then they will look through [the applications] to see if everything is correct, is all the information correct, because they don't want to, you know, garbage in, garbage out... and so they check if everything is okay...

housing official, CCT (4 July 2017)

While she did not elaborate what the officials check to be 'okay', her phrase 'garbage in, garbage out' captures the importance of ensuring that the application information is captured correctly so that as data, it is useable. Both this and the previous quote suggest that 'correctness' relates to the consistency of the data, particularly in relation to making older, existing data fit within the new database framework.

Data are standardised not only for use in the City's database, but also because the data are fed into the Provincial housing database and the National Housing Needs Register. The City of Cape Town is unique in the way in which its database and the data within it are embedded in the Provincial and National technologies. The context of this institutional arrangement is important – while other municipalities in the Western Cape are required to use the Province's database to collect and manage their housing need data, the City manages its own housing application information. This exception is permitted because of the City's expertise and experience in developing and managing their housing database, which resulted in an arrangement with the provincial Department of Human Settlements.

Officials explained that the Provincial database came about when National government, in around 2006, indicated to Provincial governments that they wanted to develop a National Housing Needs Register. Realising that the data required for this register did not exist in a single location at the Provincial government, and furthermore, that different data were collected by different municipalities, there was work to be done across the Province. A newspaper reported at the time that the provincial database would ensure that the existing waiting lists would be “updated, verified and linked to a central provincial database to ensure houses were fairly allocated, beneficiaries were properly profiled and corruption was eliminated” (Hartley 2009). Furthermore, the article reported that Cape Town would be excluded from the exercise because its database was up to date.

In the Western Cape, the City of Cape Town was considered to a trailblazer in terms of the housing database, which had already been developed and was in use. The successful functioning of the City’s database led to an arrangement between the two institutions that the City’s database would provide the template upon which the Province’s database would be structured. An official explained that:

...because the City already had a system, Province had lots of engagements with the City and there was then a Memorandum of Understanding signed between Province and the City, that we can base the Provincial database on the platform of the City. So they engaged with the IT people to understand what kind of platform they used to build this database so that we can have something similar at Province so that the two can speak to each other. Because there’s no point that Province has something and if you want to have information from the City, then the two servers or the formatting of the systems doesn’t speak to each other. So the Province [database] was then basically built on the City’s format, but obviously with certain enhancements to cater for the Provincial needs... the look and feel is similar, but [they are] not exactly the same.

housing official, CCT (4 July 2017)

The provincial dataset is therefore very similarly designed to Cape Town's database and so the City of Cape Town was permitted to continue to manage its housing database. The agreement stipulates that the City of Cape Town must, on a monthly basis, transfer to the provincial database its application data. The official elaborated on this process:

Province established the Western Cape Housing Demand Database, which is for all municipalities to upload their information on. And then [Province] made an agreement that the City can continue with their database because the system has been so advanced already, that the City will continue with their system, but on a monthly basis, we give a download of our information to Province. So on a monthly basis we give a download to Province to update their systems, so they can have a Provincial overview of housing demand, and from there, they then filter that information to National so that National can also then have a view of what's happening nationally.

housing official, CCT (4 July 2017)

This institutional arrangement around the data transfer was corroborated by another official:

National government has said every single person who is awarded a subsidised house must be on the National Housing database.... So on the first of every month, this after many meetings, of course, somebody on Province's side goes to the website [the City database's website] on the first of the month... [and] they then download the whole database, which is quite big, and it is their responsibility to upload it to the National database. So that when somebody gets a house that is on the City of Cape Town's database, National knows about it. So that is the relationship that we have between us, Province and National.

housing official, CCT (8 November 2017)

In the Cape Town case, this was an easy compromise, and because they already had a database in use, and had a significant say in the information that would be collected on a Provincial scale. The City's data are therefore used beyond the local scale and is embedded in the Province and National technologies. However, despite a similarity in the technological designs of the Cape Town and Provincial databases, a project of standardisation of the data continues. Like the challenges experienced in the development of the Cape Town housing database, where data had to be located, standardised, imported and captured from many different systems (as presented in Chapter 4), so too were the databases created at the Provincial level, where the other Western Cape municipalities had their own legacies of how citizen's expressions of housing need were collected. As an official noted, "They [provincial administrations] either had a little book where they wrote in [applicant's details], or they had an excel spreadsheet... [both of which were] open to tampering..." (housing official, CCT, 4 July 2017). The standardisation of the data across the Province was, and continues to be, a mammoth task. A provincial official reflected on the issues of uniformity across the data:

The approach ...[was] to build this provincial data platform and to get all the information from the municipalities up to a certain level on this platform... there were various problems with the data. Lots of different problems with uniformity. The registration date aspect was one of the more difficult things to deal with. So the process started with trying to collect any information that was out there, basically. So there was some digital information [and] there was a lot of paper-based information.

policy and research department official, PGWC (25 October 2017)

The inconsistencies of the data were made even more apparent during an assessment undertaken by a consultancy first contracted by Provincial government. The consultancy's brief was to determine how to include existing data in the provincial database. An official noted that the consultants:

...were dealing with a lot of history... there were gaps in the understanding of what was going on that were never really filled. [For example,] trying to understand the history of these databases and when these things were reset, especially registration dates.... So I tried to piece that together to some degree... [It was] a big data collection and data uniformification process... Consolidation under one platform – trying to put everything on one platform and deal with problems, identified problems. The approach is very important, the way we view authority and accountability around these things.

policy and research department official, PGWC (25 October 2017)

The official implies here that the decisions made to standardise the housing need data were done so in a way that was not transparent. Yet the data had to be made workable so that it could be used to make allocation decisions. While this is less relevant with new applications, the data still require maintenance in order to fulfil their allocation purposes.

The constant work of maintaining the data

At each stage of the integration of data from former waiting lists as well as housing application forms, the data goes through a ‘cleaning’ process. In this case, cleaning refers to an internal process that ensures that the data are consistent across the database – from the spelling of place names to the nature of information on each applicant. This is necessary because old data from previous local administration were imported into new modes of housing allocation tools. An official noted that “the state of the data was so dirty, a large part of my job was the data cleaning” (retired housing official, CCT and PGWC, 29 November 2016). Initially, cleaning the data might have meant figuring out illegible handwriting in order to transcribe the notes from the paper-based waiting lists into the computerised lists. Later, when shifting from what were effectively different excel spreadsheets for different local authorities, a housing official ensured that data were entered correctly into the correct columns. He explained that he “had a template excel spreadsheet and I made sure that the ID number was in the ID number column” (retired

housing official, CCT and PGWC, 29 November 2016). Once this level of cleaning had been completed, the template spreadsheet was handed to the IT members, who batch-uploaded this cleaned data.

A further example of data cleaning is the matter of identity document numbers. In 1986, ID numbers changed to eliminate race as an identifying factor. These changes had to be implemented into the database. Since these changes were undertaken, once an ID number has been entered into the database, it can only be changed by an official with a high access level. These security aspects are seen by officials to be an important addition to the database. The City of Cape Town and its previous local authority entities have often been accused of corruption in housing allocation ('The housing crisis must end' 2011), and these accusations are often levelled at politicians (typically ward councillors) and lower-level data capturers based in neighbourhood-level housing offices. By limiting access to the database, as well as restricting particular functions of the database to more senior officials, the potential for corruption is believed by officials to be minimised.

The cleaning of data is an ongoing process, even though discrepancies such as that of suburb names should no longer take place. Currently, the cleaning of data is done at a provincial scale as part of a monthly analysis of the data. A Provincial government official explained the process of ensuring that the data are useful. He noted that the housing application information that is inputted by the province's municipalities is analysed on a monthly basis. This analysis ensures that the information is suitable as housing data – the official checks that each application has the necessary information, including the registration date of the applicant, the identity number of the applicant, and residential addresses. A core component of this task, however, is to ensure that the applications are not duplicated across systems. The official explained how the Province had, for a period of time, operated two systems while a new one was in the process of being

developed and implemented. He explained that this had led to a number of duplicate records, enabled through the two versions of the system:

...one of the problems we have been having is a form comes in, and they [the administrators] go and capture it on version 2 [of the database system], and don't check to see whether the person is already on version 1, so they capture it again. So for November I found 600 [duplicate records]. So I'm busy cleaning them... I'm cancelling that one [the second record], and then [on] this one [version 2 of the system], giving him that [the original] application date...

retired housing official, CCT and PGWC (29 November 2016)

This type of cleaning of the data is laborious and an ongoing task. It is also invisible to most, even at the municipality level. The official remarked that this type of maintenance of the data is unresourced, particularly at the smaller municipalities in the Province.

I can't expect them out there in the municipalities to do it, because they just haven't got the resources...

retired housing official, CCT and PGWC (29 November 2016)

The invisibility of data in the practice of housing allocation was also remarked upon in terms of the job descriptions of officials who work in the housing field. The official pointed out that the maintenance of data is also invisible in the job descriptions of officials:

I doubt whether on any of their job descriptions there is any job description relating to data capture... I don't think one paragraph or even one sentence of that is in anybody's job descriptions [in the smaller municipalities].

retired housing official, CCT and PGWC (29 November 2016)

While the cleaning of data is critical for the functioning of the databases, only a few people are trusted to do this job. It requires a high level of access to be able to manipulate records to this extent, and so the job falls to a small number of people – when asking an official who else I ought to speak with about the processes of shaping the database, a senior official replied that “There is nobody to talk to. I’m not that important, I’m not by any means suggesting that. No, there is nobody” (housing official, CCT, 8 November 2017).

In sum, this section has outlined how the database is maintained by a small number of officials with adequate clearance to maintain the data within it. This maintenance work is crucial for the accurate functioning of the database for decision-making, and for the best chance of the state making fair decisions using this technology. The following section examines how this data are protected by the technology of the database.

Securing the data, an imperative

Despite the small number of people who have access to the database in its full capacity, the database has built in safety features that prevent tampering and other compromises. The politicised nature of housing is apparent in the way officials who work in the field speak of housing allocation through the database. They are very careful to explain how securely data are stored; how limited access is to the database; and how there are audit chains in place whenever any official logs on to the database.

These security features begin at the start of the application process, with the applications entering a holding area before they are approved for inclusion in the database. Applications are held separately from the database until the head of the local government branch (or one of his two assigned officials) approves the application, ensures that the data has been correctly captured and that the applicant is eligible (at this stage, that the applicant is resident in Cape Town, checked simply by looking at the applicant’s current address), before the application can

become data in the database. Any further interactions with data on the database are noted through an audit trail. This introduction of this feature is directly related to transparency of process:

if you do anything on the system, there's a trail. So if there are any queries, the IT people can always go in the back end and tell you who did the changes. So they also built that in to ensure a fair process and transparent process...

housing official, CCT (4 July 2017)

This was corroborated for the province's database too. An official noted that the database itself has a built-in monitoring function:

...safety mechanisms are built into this thing. Anytime anyone goes into the system, all their movements on the system are recorded. So there's a surveillance function and you can use it for audit purposes.

housing official, PGWC (25 October 2017)

At the stage of drawing names from the database for a housing development, a senior official inserts the criteria that have been decided on by the Project Steering Committee, which have been outlined in the Allocation Request Form (see the following section for more on this process). At this stage, he filters the database according to these criteria, extracting names that meet the criteria outlined in the Allocation Request Form. An official explained that:

[the system] will then extract all that information out of the system onto Excel, and from there, he will then obviously make it read-only format... so that there can't be further tampering.

housing official, CCT (4 July 2017)

The emphasis on the validity of the data contained within the database, as well as the integrity of the process of a fair allocation is apparent through the full allocation process. The point

outlined above pertains to sending the long list of potential beneficiaries to the project managers, who then have to contact the people on the list in order to determine whether they meet the national subsidy eligibility criteria. Once this information has been compiled for the long list of potential beneficiaries, the senior official removes from the list those who do not qualify and sends the shorter list to the City's Executive Director. As this list contains the details of the applicants who are likely to receive houses from the state, it is a sensitive document. The official reflected on this by noting that "I only give the password to one person, that's the person who gets the file the last" (housing official, CCT, 8 November 2017).

All the officials interviewed were careful to point out how the data are protected from outside influence at every stage of the housing allocation process. This stems from the many allegations of the past, when the housing waiting lists in particular were often the subject of critique because they were easily changed by anyone with access to them. Housing allocation is politicised particularly during periods of election campaigning. Politicians' promises of housing delivery makes the housing database and its contents and products particularly valuable. An official remarked on this, saying that:

the data itself is very, very secure. Many people do ask me, 'give me the whole list'. Although I can do it, it will never ever happen... each person on the database could be a potential vote for them [anyone running for a political appointment – politician or councillor]... they're not allowed to have any interference in any kind of list... Am I asked for it often? Yes. Is the answer no? Yes, the answer is always no.

housing official, CCT (8 November 2017)

As a result of this political interest in the data, the development of the data from the application forms explicitly avoids any link to politics. This was highlighted by two officials who were adamant that a political ward number should not be associated with applications. Wards are political divisions of the municipality typically used for election purposes. A City official

explained why allocating a ward number to housing applications would be problematic, demonstrating the stakes associated with housing allocations for councillors, who are politically affiliated members of local government. He explained:

There's a field in the database where I can allocate a ward number. It's not populated at the moment because... I really don't want to do that... if I allocate a ward number to the database, then all the councillors [are] going to fight. If I say, okay, we're now only going to extract ward 1, no, we can't do that... That just wouldn't be fair.

housing official, CCT (8 November 2017)

A former official was similarly adamant that ward numbers should be avoided. On questioning about ward numbers being associated with applications, he exclaimed "Keep away from wards! That's political... We purposely keep totally away from wards, because that's where the problems come in..." (retired housing official, CCT and PGWC 29 November 2016). Where housing allocation is intended to be free of politics, and particularly party politics, the allocation of a ward number to an application would contradict the seemingly apolitical nature of the database, the data, and the allocation process.

This section has shown how the data are kept secure within the database. I have shown how the state has a strong focus on ensuring the integrity of the data and thus the accountability of the database. The database is thus performative from a state commitment to bureaucratic procedure and practice, while simultaneously maintaining the safety of data by fortressing it within these securitisation features.

Examining the bureaucratic commitment to due process: The envisaged practice of housing allocation

Housing allocation policy demonstrates the complexity of the housing allocation process, and although it notes that the process is contested, the contestations in each allocation process is not outlined in the allocation policy. Not only are housing allocation decisions complicated, but they are also the result of many interactions among different actors, processes and institutional bodies. There is thus a disjuncture between the simplicity of procedure as depicted in policy and the complexity of decision-making in practice.

Housing allocation process in practice

The state offers a multitude of housing options to those who qualify for housing assistance. In this section, I focus particularly on new housing developments. These developments, often referred to in policy as greenfields sites, are developments where “there are no pre-existing, legal occupants, and for which the municipality has discretion to select beneficiaries, provided they are eligible for the subsidy” (City of Cape Town 2015: 4). This is an important distinction to make because it means that the database works to its full extent – in other words, there are no limitations placed on the database’s functioning, and the eligibility criteria are strictly those set out by the national housing subsidy.

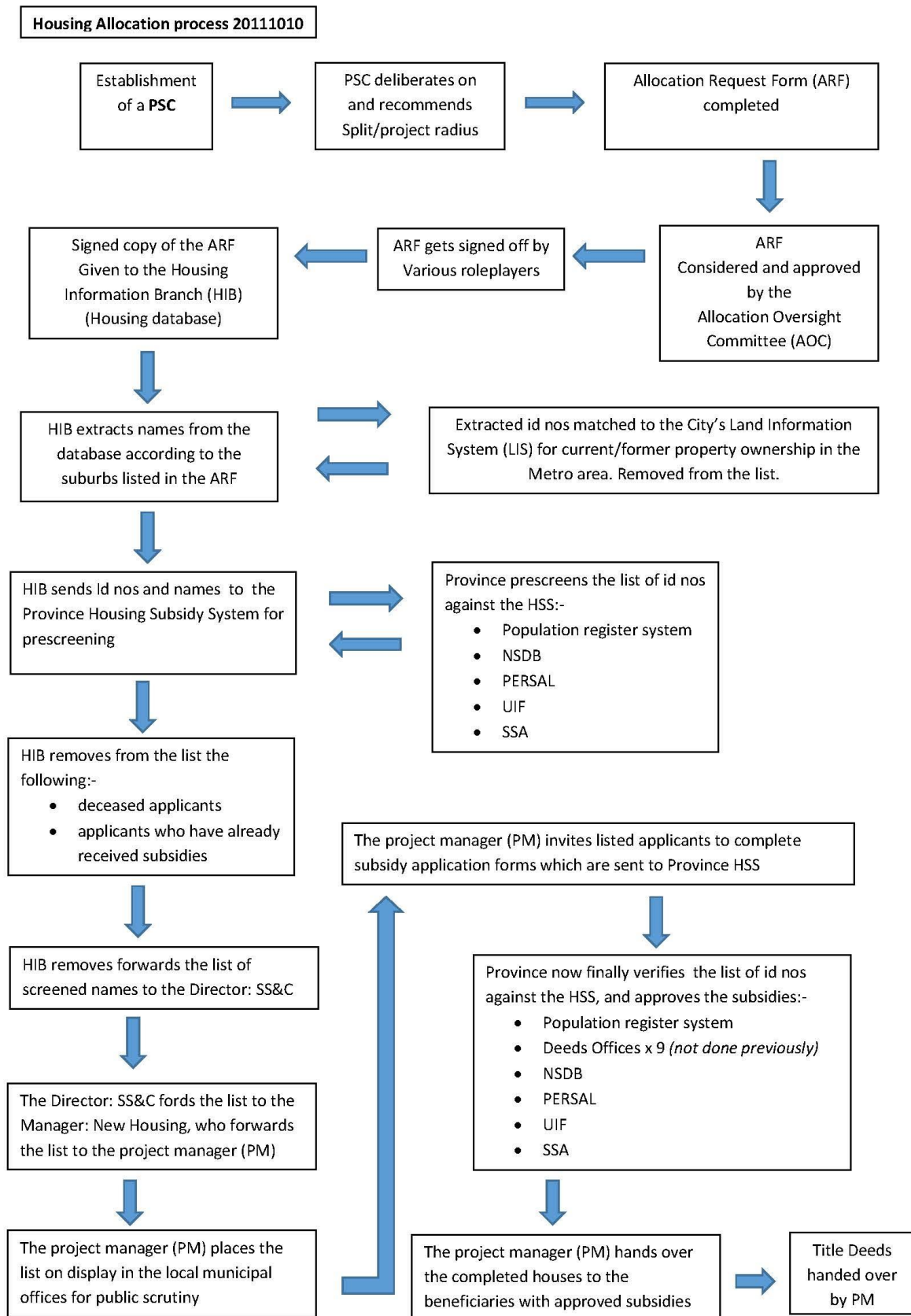


Figure 6.17 An illustration of the process of the state's work to make housing allocation decisions

The City's greenfield housing allocation practice is set out in Figure 6.17, a working document that I received from a respondent. This document, dated 2011, shows that housing allocation for new developments is overseen by the City's Housing Allocation Oversight Committee (see Table 6.1 for an overview of the actors, their roles and interactions with reference to housing allocation practice), but run by the Project Steering Committee (PSC), which is comprised of officials from the City and Province, ward councillors, community representatives and the Project Manager. Establishing the project steering committee is an important step in the process and electing the representatives from the community is a significant, if not unchallenging, aspect of the process. An official described the process as follows:

Before the housing project commences, they call a public meeting within that area. So everybody is then welcome to attend, and then at the public meeting, they then elect people to represent them on the PSC, so they will be then the reps from the beneficiary community. So once they, those reps have been selected, they form the PSC in conjunction with the project manager from the City, as well as the local councillor...

housing official, CCT, 4 July 2017

The PSC is considered to be the liaison between the various City of Cape Town stakeholders, housing project developers and the community, and has a role for the duration of the development of the housing project. The appointment of representatives to the PSC does not always go uncontested – who constitutes a community representative is a subjective topic, and one that does not always reach consensus across a community. Furthermore, the housing delivery process is often protracted, and who acts on behalf of a community can change over time. Despite these questions of representation, the constitution of the PSC is an important milestone in the process of housing delivery.

Table 6.1 The actors involved in housing allocation decision-making

Actor	Role	Interactions
Project Manager (PM)	<p>Liaises with the Allocation Oversight Committee; other officials; provincial government representatives; PSC regarding beneficiary selection, approval and allocation</p> <p>Accounts to the Executive Director via the line manager</p> <p>Ensures that the lists are made publicly viewable</p> <p>Facilitates consumer education workshops</p>	<p>Interacts cross-sectorally across City structures</p> <p>Reports to ED</p> <p>Liaises with provincial government officials</p> <p>Interfaces with potential beneficiaries</p>
Project Steering Committee (PSC)	<p>Discusses and recommends targeted areas and percentage splits</p> <p>Advisory role</p> <p>Facilitates effective communication between the City and beneficiaries</p> <p>Includes officials from the City and Province, ward councillors, community representatives and the Project Manager</p>	<p>Recommendations to ED</p> <p>Internal to City</p> <p>External to beneficiaries</p>
Executive Director (ED)	<p>Approval of target areas and percentage splits</p> <p>May approve exceptional cases with the Mayco member</p> <p>May amend the target area</p>	<p>Informed by PSC</p> <p>Makes decisions with Mayco member</p>
Housing Allocation Oversight Committee	<p>Verifies that the PSC follows the policy prescripts</p> <p>Monitors the selection of applicants</p> <p>Considers cases of exceptional housing need</p> <p>Recommends to ED</p>	<p>An oversight role for PSC</p> <p>Reports and recommends upwards to ED</p>
Housing Information Branch	<p>Manages and administers database</p> <p>Liaises with IT team managing the backend of the database – ensuring its updated</p> <p>Reports to the Allocation Oversight Committee</p> <p>Oversees the Subsidy Administration process</p> <p>Responds to applicant queries</p> <p>Provides a monthly update of the database to Province for feeding into the Provincial and National databases</p>	<p>Communicates with applicants</p> <p>Draws lists of applicants</p> <p>Interacts with PM</p> <p>Uploads housing database information into HSS and National Housing Needs Register</p>
Provincial Department of Human Settlements	<p>Grants City with authority to access the Province’s Virtual Private Network Connection to administer and approve housing subsidies</p> <p>Two permanent representatives sit on the Allocation Oversight Committee</p> <p>Undertakes the subsidy checks</p>	<p>Interact around the subsidy administration and allocation</p>

	Receives downloads of the City's database to feed into the provincial database and the National Housing Needs Database	
National Department of Human Settlements	Responsible for administering the HSS and National Housing Demand Database May appoint external auditors to investigate allocation processes Informs local policy through national directives	Provides an administration role to Provincial Dept of Human Settlements
Mayco member for Human Settlements	Endorses target areas and percentage splits as approved by the ED	
Applicants	Register their need on the database Update their details on the database to ensure that they are contactable Complete subsidy application when appropriate Wait patiently, but presently – they must ensure they are known to the City	Contact local housing office to register and update details
Subsidy administrators	Administer and manage subsidy application process Work only from the database list Assist and advise applicants Register the Deed of Sale process	Assists applicants Works with the City's subsidy administration unit

Once the PSC has been established, an Allocation Request Form (ARF) is completed by the PSC. The ARF documents the project's name, the suburb under which it falls, the number of sites and the subsidy type. The ARF also documents a description of the project, and critically, stipulates the percentage split of the project, the term used by officials to denote the process of how the housing development is divided between beneficiaries from the areas within the project's radius, as well as the percentage of houses that should be reserved for allocation to applicants external to the target areas.

During the allocation of housing opportunities for a particular project, these different categories of applicants are allocated particular percentages of overall allocation, in order to address the City's desire to integrate "the different communities in Cape Town" (City of Cape Town 2015: 16). The policy allows for up to 80 per cent applicants from within the targeted area, with the balance of houses being allocated to applicants falling outside the targeted area, with priority being given to those who have been registered on the database for the longest (City of Cape

Town 2015: 17). This percentage should include any applicants who fall into the special needs category. Based on these policy directives, the percentages of applicants who fall into each category (known as the 'project split') are decided on a project-by-project basis by the Project Steering Committee.¹⁸ Once the split has been decided and recommended to the Executive Director of the City, as well as the Allocation Oversight Committee, a monitoring group, the Housing Information Branch is required by the policy to contact the long-list of applicants that are potentially eligible in order for applicants to update their details.

According to officials, the most important decision made by the PSC, and arguably the one that holds the most weight across the allocation process, is the decision regarding the target radius of the project, which determines the target areas. An official elaborated:

...if the project is this [draws a diagram], they can decide if this is going to be the radius [a shorter line from the middle of the diagram], or that is going to be the radius [a slightly longer line from the middle of the diagram]. All the communities within that radius is a targeted area.

housing official, CCT (4 July 2017)

The establishment of the target radius is illustrated in Figure 6.5, provided to me by a former housing official. For this reason, the illustration is dated, although the logic behind how the target area is established, and the effects thereof, remain applicable with the current allocation policy. The PSC has to determine the radius that they wish to target through the housing development. This radius may be 5km in description, but if the Committee were to stick strictly to this radius, the target area would cut through formally defined neighbourhoods. To address this, the radius is instead defined loosely so that neighbourhoods are not divided, as demonstrated by the irregular line in Figure 6.5. It should be noted that when establishing the

¹⁸ The discussion and agreement of the beneficiary split is the primary role of the Project Steering Committee, alongside playing an advisory role and facilitating "effective communication" to the City as a developer and approved beneficiaries of housing opportunities (City of Cape Town 2015: 11).

target community, the target neighbourhoods are established according to 'formal suburb', rather than ward area. An official noted that the radius is established purely in terms of spatial area. It is strictly not determined according to ward, as wards are political areas. In discussing this, he was adamant that officials "keep away from wards! That's political" (former housing official, 29 November 2016). The housing allocation process is deliberately apolitical in this regard.

An official explained that the "allocation policy states that each housing project must make provisions for persons within our special needs category," and added that the "special needs category goes beyond just persons with disability" (housing official, 4 July 2017). This category includes people:

...60 years and over, it covers military veterans [as a directive from National government]..., people who are part of the TRC commission report, and also street people who constitute a family who underwent rehabilitation within the City's rehabilitation centres... and then we also have vulnerable groups.

housing official, CCT (4 July 2017)

The ARF should stipulate how many of the houses should be reserved for these special needs criteria allocations. An official explained that:

...each housing project must make provision, but the policy isn't descriptive. So we're not saying it must be 10% or it must be 5%. So the PSC, they must still decide on the percentage. On average, we've seen, from the allocation forms that are coming in, the average is usually 5% for persons with disability.

housing official, CCT (4 July 2017)

The request form is submitted to the Allocation Oversight Committee (AOC), which scrutinises the form to ensure that it strictly adheres to the City's allocation policy. The AOC:

...consists of City officials as well as representatives of the Provincial Department of Human Settlements. And then we scrutinise this document [the ARF] to see is it in line with policy. If it isn't, obviously they must then motivate. Either we will decline, or if there is a strong motivation, we can recommend the motivation, and then ultimately it gets signed off by the executive director and the MAYCO member, for, well now it's TDA, but back then it was for Human Settlements.

housing official, CCT (4 July 2017)

The Housing Information branch, the group within the City of Cape Town who manage the housing database also feature on the AOC. Their role here is one of moderator, ensuring that all the applicants in the project radius are included in the project split. A respondent noted that "we are a moderator like that. We don't decide on the individuals, but the principles, that the principles are right" (former housing official, CCT and PGWC, 29 November 2016). While the respondent did not outline what constitutes the 'right' principles, the implication was that the project radius and project split should follow the outlines as written into the housing allocation policy.

Once the AOC is satisfied that the ARF meets the City's criteria as set out by Allocation Policy, it is signed off by the PSC, the project manager and the AOC. It is then sent to the department's Executive Director (ED) for sign-off, and thereafter to the Mayco member (for ratification purposes). This signed ARF is seen as an agreement by the relevant actors in the process of allocation, and the form itself provides "cover" (former housing official, CCT and PGWC, 26 November 2016) to the Housing Information Branch officials, who simply execute what the form tells them to in terms of extracting names from the database from the stipulated suburbs, as well as according to the percentage splits as outlined in the form. This protects these officials from being accused of favouritism, corruption, or of exercising preferences towards certain areas.

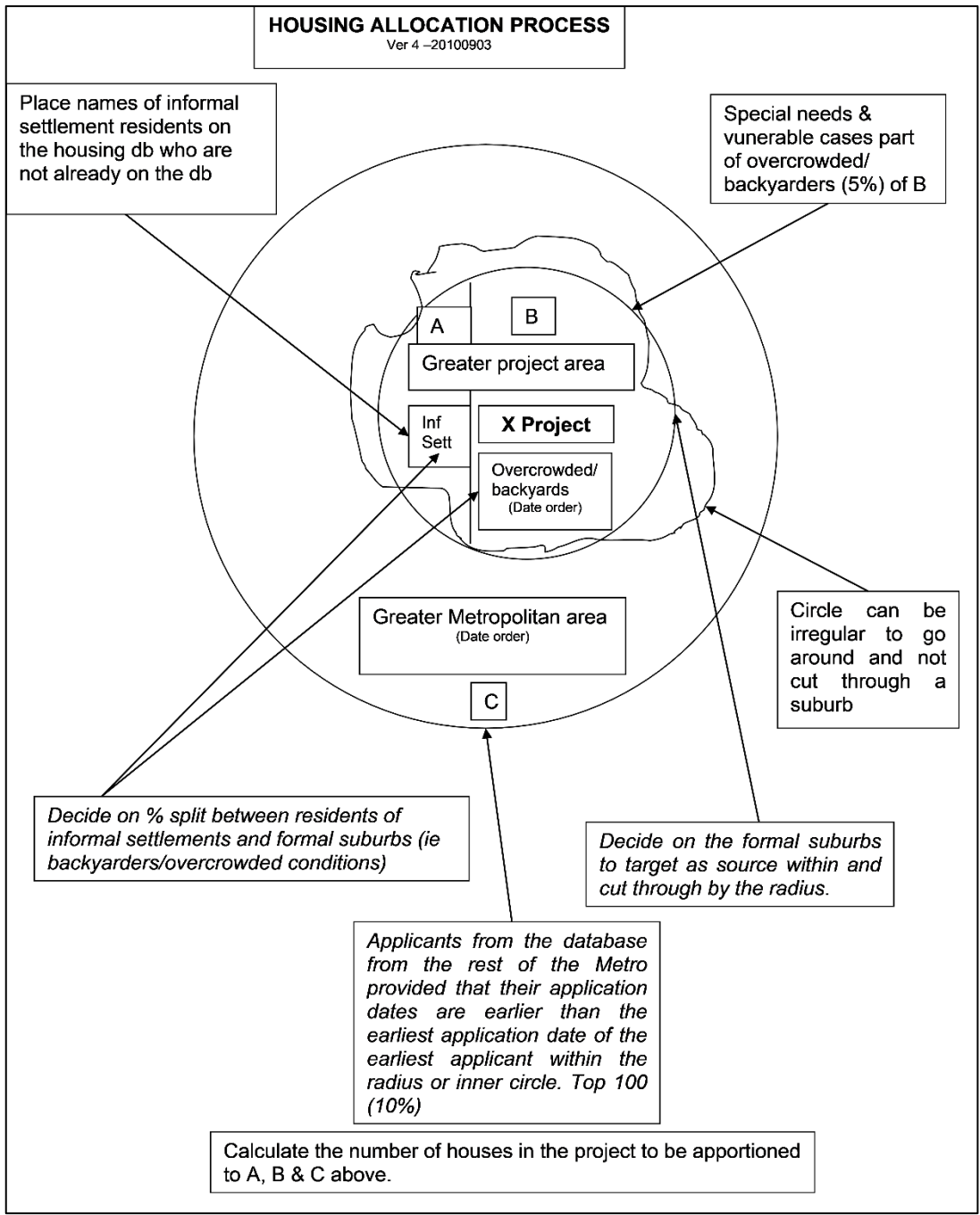


Figure 6.18 Figure illustrating the 'target radius', the target area selected by the PSC

Only once the allocation split has been approved by the executive director and the Allocation Oversight Committee does the Housing Information branch begin its screening processes. Following sign-off from the relevant committees and political appointments, the ARF is sent to the database's 'power user'. This technical term refers to the most senior housing official who

has full access to the database. Following the agreed upon percentages set out in the ARF, the power user commences with the selection of beneficiaries.

[The ARF] tells me where the people must come from for this new project; numbers, where it must come from, people for disabled, special needs categories as well. And this is what I do – whatever name of the area I put into the system, [from] the [request form], and then [the database] gives me all the names that is recorded on the database... these are potential beneficiaries of new housing projects.

housing official, CCT (8 November 2017)

Before the first list of names is made public, the Housing Information branch undertakes a screening process of the first 'long list' of potential beneficiaries to eliminate non-qualifiers. The first tests undertaken at this point are a check against the City's tenant register¹⁹ and Province's Housing Subsidy System (this screening is undertaken by the Provincial Housing Subsidy Administration Unit). A housing official explains how this initial screening process works:

... you've got to do a lot of checks before we actually get to [beneficiaries]. The first thing that I do is I send those names off to Province, and what do they do, they will tell me, when it comes back to me eventually after a couple of days or a week or so... Who owns property, who already has a subsidy, who's alive, who's dead, whether they're a government worker... whether you own property anywhere in the country... When that [screening report] comes to me, then I remove those I should, which is of course dead people, those who have [had] a subsidy before or [own] a property before... That I put in an excel spreadsheet [that] I have password protected, and I send it off to the way it came to me. It comes a long way from the Project Steering Committee, to the ED, so I send it back to same way...

housing official, CCT (8 November 2017)

¹⁹ If applicants are City tenants, they may be offered a housing opportunity if they have no arrears, have no record of anti-social behaviour, and if they ensure that no one will remain at the rental property – including any other dwellings on the rental property (City of Cape Town 2015: 17).

Following this first screening process, the list is sent to subsidy administrators at Provincial government, who check that the potential beneficiaries do not own property or have not received a house from the state in the past. Once the list has been finalised, the soon-to-be beneficiaries are sought. The long list of potential housing beneficiaries is made public, and those whose names appear on it are invited to make a more complete application. An official explained:

[Those] names, going through the process, eventually goes to a subsidy administrator. Each project that we have goes to a subsidy administrator... They go out to find these people. With SMS, whatever, and they then come to a big hall, wherever it is, one of the civic halls that we have, and then everything gets explained to them what they need to do, then they complete the subsidy application... and they must attach what they need to – employment, salary, copies of their IDs, marriage certificates, birth certificates, for everybody, this is the arrangement that they now have. That stack of forms goes to Province, and they do the same checks that I did initially.

housing official, CCT (8 November 2017)

Following the advertising of the lists, the Project Manager and the subsidy administrator assist the potential beneficiaries to complete and submit their housing subsidy application forms. The information from these forms is captured on the Housing Subsidy System, from which further checks are undertaken, including the Population Register, the Deeds Office, the Unemployment Insurance Fund, and other Government systems. As some names may be eliminated from this screening process, there may be several rounds of beneficiary selection.

On talking me through the internal housing process diagram, an official summed up the final phases of housing allocation in one breath. He noted that:

... a subsidy gets approved, and then the project manager calls the people in and hands over the house, and then signs the 'happy' letter, and later on, the title deed.

former housing official, CCT and PGWC (29 November 2016)

This section shows that the process of housing allocation, for officials at the City of Cape Town, involves considerable bureaucratic procedures in order to proceed smoothly. The allocation process, if it goes according to the diagram, ensures that there is a consistent approach to undertaking allocation, and equally a consistent record of action through the use of various forms and committees. The state's commitment to bureaucratic procedure is as a result of the many inconsistencies of allocation practice in the past, what has been described as "administrative injustices", that "dispens[ed] a series of decisions that [were] ad hoc, immoral, inconsistent and very likely illegal" (Cavanagh 1997: 3).

Conclusion

This chapter has demonstrated how the database is both a public facing and a deeply protected technology. Through charting how applications are made, the nuts and bolts of the types of information imagined by the state to be useful for making a fair housing allocation decision, to the ways in which this data are standardised, collated, amalgamated, cleaned and maintained, and throughout all this, protected from outside interference, the database becomes something of a paradox. The database is both technical in its functioning, an efficient state tool that organises the names of all housing applicants, while simultaneously a political tool that represents the state's commitment to fair and just process.

The application process is, to senior housing officials, banal. The symbolism of exercising a right to housing and to citizen/state interaction is lost in the bureaucracy of collating and capturing application information. Yet the realities of life lived in precarious, permanently temporary conditions are made known in the challenges experienced by applicants – the struggle to provide supporting documents lost in fire, or the fear of missing a letter from the City of Cape Town. The complexities of applying for housing are concealed by the bureaucratic mundanities

of the process and the scale of the applications that require processing. This chapter documents the application process through a detailed examination of the application form. As the critical first step in the state's shaping of housing demand data, this examination of the application form shows how the state's knowledge of housing need is shaped through the nationally-prescribed qualifying criteria.

The chapter also documents the process by which the housing application information is captured as 'data' in the database. The database is the state's intervention in a process of historically fraught and contentious allocation decisions made based on race. The implementation of the database is envisaged by the state to implement a fair and transparent method of housing allocation. Fairness, in this case, is defined relationally. In comparison to the allocation methods of the past, for the database to function, all data held within it has to be the same – the data are collected, cleaned, standardised and maintained to the same standard. This equal treatment of data is considered to be fair. The database is transparent in the sense that there is, theoretically, only one way in which housing allocation takes place across the city – through the deployment of the database. In addition, fairness and transparency are implemented through the database as a technical tool, rather than a decision made by an official. Fair, in the sense that all data are treated equally, and transparent because the solution to allocation is technical rather than personal. When understood in relation to housing allocation practices in the past, the state's commitment to the database as a fair and transparent tool is based upon the integrity of the data, and the protection of the process of allocation through the database. Pragmatically, the database provides the state with a tool through which to manage housing application information at scale.

This chapter documents the work that goes into making the database function, including processes of standardisation of historical data, the cleaning of data as it enters the database, as

well as the maintenance of the data as it ages and requires updating. This chapter therefore illustrates how data are subjective and socially constructed.

The final section of this chapter documents how the database is invoked in allocation policy, and how the state puts it into use in practice. This section demonstrates the state's commitment to bureaucratic due process, and while the database as a technical tool may be invisible to most, this section indicates how it is put to use as a functioning state tool, its critical role in the broader policyscape outlined through an examination of state practices of decision-making through the database. The unseen effort and work by officials to manage and maintain the database becomes apparent through this chapter. The long-term institutional investment in the database, both in terms of time and finances, demonstrates the state's commitment to fairness in allocation practices, even if fairness is defined here as procedural. However, the state's investment in the database is interesting because it is used to make allocation decisions less frequently than perhaps intended.

In the following chapter, I bring together these three empirical chapters and conceptualise the work of the database as a mode of housing governance, a critical state tool that is publicly invoked, but the workings of which, and the state's work to sustain its functioning, remain invisible to most.

Chapter 7: A mode of housing governance: The database's multiple forms and functions

Introduction

Academic and popular debates have side-lined the database's role in housing allocation. It has, for instance, been dismissed as a "convenient fairy tale" (Tilley and Pieterse 2008), a myth (Tissington et al. 2013), a political smokescreen for the state's incapacity to respond to housing need. On the one hand, the database is invoked by the state as a tool of efficiency and effectiveness in the state's pursuit of equitable housing allocation decision-making, a representation of political and bureaucratic legitimacy. On the other hand, concretely, its forms and the functions it plays in housing governance are complex and opaque, rendering it problematically barely visible in housing debate, a mystery to solve. As a result, the database's opacity is often conflated with its apparent invisibility. Inspired by Star's (1999) injunction to examine bureaucracy and its mechanisms, here I work to unearth the database's "inherent dramas". By centring the database as the object of study, I pay attention to its multiple forms and functions to examine the varied embodied technological, political, sociological, and bureaucratic rationalities which shape the way it works as a state tool to allocate housing procedurally and fairly, as an element of policy, and as an indicator of access to housing for the public, for those waiting for homes especially.

These divergent functions shape the opacity of understanding of the database, the particular ways in which it is rendered invisible (Larkin 2013: 336), yet also central, to housing allocation debate. It occupies a range of visibilities. As Larkin (2013) suggests of most infrastructures which appear from invisible, to grand spectacle, and everything in between. Examining the database as an object of study, rather than a subsidiary component in an altogether more

dramatic context of housing allocation, I argue that the database should not be dismissed for its seeming invisibility. Instead, I demystify the complexity of the database and the varied ways and spaces in which it works. In doing so, I make visible the state's work that goes into the production of the database, its varied functions in provincial and national allocation processes. I examine its positioning in the housing policyscape, showing the ways in which it embodies the state's aspirations for procedural, and fair, allocation practices, the state's commitment to bureaucratic procedure, as well as its work to produce a database that is capable of working in these aspirational and bureaucratically procedural ways. This analysis is critical to provide a rigorous analysis of the ways the database operates as a state tool and in these varied roles the ways in which it proves a mode of housing governance.

In this chapter, I substantiate the three ways in which the database functions in housing allocation, conceptualising in each case the work the database does, the materiality of its form, and the relative (in)visibility of its functions. In the first section, I explore the ways in which in its public-facing positioning, the database is rendered technical. As a critical technology for housing allocation, it is a prized tool, key to the state's commitment to procedural fairness. Securitized, protected from undue influence, its actual function is rendered largely invisible. Instead, the database is invoked by the state publicly as the technical solution to housing allocation, a fair and procedural means to allocate this scarce and highly contested resource. Housing applicants are instructed to wait their turn, with the reassurance that they are 'on' the database.

Second, I reflect on the database's production, what constitutes its form, its insides so-to-speak, as well as the work required to maintain it. It is in this internal dynamic that I argue that the state's commitment to the database is clear, evident in the extensive work of cleaning, maintaining, and securitizing the data within the database. This administrative work, however,

is concealed from the public. It is key, yet totally invisible from, and therefore absent in the debate on housing access.

In the third section, I explore how the database works in official policy and in state practice in its invocation as a political and administrative solution to housing allocation. On paper in policy, the database is an essential tool for procedural housing allocation. In practice, sited in the city, the database populates the housing demand registers which are gathered at the regional scale, through the provincial housing department and then fed into the national register. Here I explore the varied, and contradictory, political and symbolic, as well as bureaucratic and instrumental ways, in which the database is made to work across this polycscape as a tool for practices of calculative governance.

I conclude, building on Hecht (2011), by arguing that the database is a mode of housing governance. It is a state tool through which the state navigates and mediates citizens' desperate housing need, through shifting technologies, across political and policy regimes. In making it visible, I examine its form and functions, a gauge on the state's work, its commitment to and struggle with procedural bureaucratic. I make visible the critical state work that shapes it, explaining the effort that goes into its production, what sustains its public-facing seamless appearance.

Rendering technical and barely visible: The public-facing aspect of the database

The database is visible to the public in particular ways, at certain points in the allocation process. This is the database's public-facing framing, where the database is invoked by the state as a prized tool for fair allocation procedure, a representation of its commitment to redress, to due bureaucratic process, and to honouring its commitment to assist housing applicants who are registered on its system.

The allocation of state housing resources is a considerable administrative challenge. The database is, for the state, a way of making sense of housing demand data, both current and historical. Shaped by its technological appearance and thus its apparent neutrality and apolitical nature, the public-facing dimension of the database offers to the state an efficient and practical way of addressing questions of fair housing allocation. This dimension presents the database as a technical object that operates to make seamless and incontestable allocation decisions.

In this technical appearance, the database appears to be a 'flat' technology (Hecht 2011), naturalised as part of the state's toolkit and therefore unremarkable from a political standpoint. Securitised in order to ensure the integrity of the state's process, the housing database and its workings are invisible in most instances. But the housing database is also a performative tool of state efficiency and legitimacy, a technological response to the democratic state's commitment to social justice and redress. The database embodies a number of state rationalities and commitments which are only visible upon closer scrutiny.

The housing database was developed partly as a technological infrastructure to make sense of complex, significant, unpredictable and growing housing demand. In this framing, the database is a tool of calculability, a way of determining eligibility to state housing. But the database was also developed as a concession to political realities – a need for the state to demonstrate its commitment to fair allocation practices through new methods of decision-making, while simultaneously taking seriously the often long periods of time invested in waiting for the state's assistance by so many citizens in the apartheid era. The database offered a logical way of incorporating decades worth of housing waiting information into a single method of allocation across the city, while still accepting new applications, and managing expectations around fair allocation practices. The public's buy-in to the new method of allocation was critical for its successful implementation.

The database is a technical response to an administrative dilemma of fair housing distribution, a technical rendering (Li 2007) of a state's political response to a historical challenge. It is simultaneously also a technological demonstration of the state's commitment to redress. But the database is more than simply a technical state tool. Hecht's (2011) work on techno-politics surfaces the power within technologies used by the state. She positions state tools like the database as not "merely tool[s] of politics", but rather mode[s] of politics" (2011: 2) . This shift in understanding of technologies from 'tool' to 'mode' sheds light on the ways in which they are political in their invocations, development, use and positioning in broader policy landscapes.

Hecht's description demonstrates how the database is political in the way it operates, beyond being simply administrative. The apparently apolitical public positioning of the database, a naturalised assumption of technology in general, is one example of how the database operates politically, as a public display of the state's adoption of technological tools for fair and unbiased decision-making, an expression of the state's commitment to redress. The database is also a mode of politics in the way it facilitates the state's bureaucratic procedural commitment and as a way of the state making sense of vast and growing quantities of housing demand. And the database is also a mode of politics in the way it is embedded in other housing demand policies and systems across different levels of the state. As a tool of politics, these aspects of the database remain invisible, a politics I bring into view, drawing on Hecht's framing of technology. Understood as a mode of politics, the database's complex and ambiguous roles are made visible.

By substantiating the complexity of the database's roles, I build on Hecht's argument, extending it beyond the notion of tools as a mode of politics. I extend this positioning of state tools to consider the database as a mode of governance through which the state navigates its role between the contentions of considerable housing need, scarce resources, and the need to ensure allocation according to its eligibility criteria.

A techno-political lens shows that the use of the database for resource allocation decision-making is a political state project. The debate also demands paying attention to the materiality of the database, what I consider to be its internal dynamics, the database's form and the focus of the discussion that follows below.

Looking within: Making visible the production of the database

A techno-political lens argues that we pay attention to technologies' materiality because "their material, artefactual forms matter fundamentally to their success" (Allen and Hecht 2001: 14). The database's materiality is largely data-based. To thickly describe the database and its internal dynamics – what I refer to as its form – in this I draw on debates on the politics of data production and processes of datafication. In doing so, I make visible the state's practices of crafting housing demand data, which is key to the creation of the public-facing version of the database that appears to work coherently to make outwardly impartial allocation decisions. An examination of the database's 'insides' requires examining the data that comprise it and the ways in which this data have been produced.

Data are critical in modern state decision-making. Imbued with a "superficial neutrality" (Hacking (1991: 184) in Beer (2016: 3)), data lends itself to dispassionate, indifferent, and therefore seemingly objective decision-making. This apparent impartial nature of data is critical to its role in data-driven decision-making and the technologies that facilitate such decisions, and it is the apparent objectivity of technologies like the database and the data within it that renders it invisible in broader debates on housing allocation. Paying attention to the materialities of technologies like the database makes visible the otherwise invisible aspects of the database's internal logics, the processes of producing data (or "datafication") and the ways these are used in the housing policyscape.

Debates on the politics of data production argue that data can never be considered to be “raw” (Gitelman 2013: 2). Where data are sometimes presumed to be unbiased, neutral, objective and impartial, debates on data politics suggest that data are not self-evident; rather, they are shaped in particular ways, from how, why and by whom it is collected, how it is maintained and stored, and how it is interpreted. The assumed objectivity of data is alluring for decision-makers because of its apoliticality – hence the proliferation of “datafication” (Dourish and Gómez Cruz 2018) and using data for decision-making. But when we look into and under data (Gitelman 2013: 4), we start to see some of the ways in which data are shaped.

Cape Town’s database is an excellent example through which to examine the production of data and problematise some of the assumptions around data’s apparent objectivity. The database holds within it housing demand data through which the state’s criteria for eligibility sort to make allocation decisions. This data is a mix of historical housing application information and more recent expressions of housing need. This mix of data has necessitated a number of state processes of re-imagination in order to be used by the state in the post-apartheid period. Furthermore, work on the data is continuous, what is required to make it functional (or, beautiful, as Halpern 2015 eloquently suggests) for allocation decision-making.

Examples of the re-imagination of data are numerous within Cape Town’s database, which has had to undergo numerous re-configurations of local government arrangements, many that affected the data and its organisation. At each of these moments, the city’s housing demand data were re-imagined, amalgamated and standardised according to the allocation logics of the time. While initially a slow process of transcribing hand-written records into a custom-written computer programme, in time the computerised waiting lists enabled officials to more swiftly ascertain the different types of information collected by each local authority, and how best to merge these different information types. Through field-mapping exercises, officials were able to

collate the application information as best they could. But the apartheid city and its segregationist practices left a number of gaps in application information across the city, as a result under-representing a significant portion of the population because of segregation and limited access to the city for those classified racially as black. In practice, a considerable number of people who had been formally denied access to the city were invited to prove their residence in the city in order to be inserted onto the waiting list at the appropriate date. This example of the insertion of applications 'out of order' is one example of the processes undertaken by officials to standardise and update the data fairly in order to make the datasets useable for decision-making purposes.

The standardisation of the data, and the ability to amalgamate and later divide waiting lists according to new institutional jurisdictions, required considerable effort on the state's part have been critical to the efficient functioning of the database, an efficiency that supports its seamless appearance in the public domain.

This research shows the ways in which the data in the database have been socially constructed (Dourish and Gómez Cruz 2018; Gitelman 2013). The state's shaping of this data, and the effort required to aggregate, standardise and divide the data according to the newly-defined neighbourhoods have remained invisible, however, in the public sphere. This is partly because of the nature of the data. The housing demand data are sensitive because it holds the particulars of applicants, from identity numbers, status of employment, earnings and so on, this information is particularly personal. The data are also politically sensitive because potential manipulation would affect the fairness of subsequent allocation decisions. As a result, the data are black-boxed by the state, kept safe behind firewalls and limited access to the system, this data tends to remain out of sight to all but a handful of officials who have access to it.

Framed as 'data', rather than applicant information, the internal form of the database is easily assumed to be objective and apolitical. Yet the data held within the database are produced, maintained, and interpreted for particular outcomes. The housing database is an excellent state tool for making a case for situated understandings of data-driven decision-making. I show here how the housing demand data needs to be understood in a situated and contextualised manner in order to make visible the politics of datafication in housing allocation.

A situated understanding of data is what Jasanoff (2017: 12) describes as an "observational standpoint", the nuance and context of data that is erased when presented as reality, rather than a moulded version of reality. The context of data creation and production is important when considering historical housing allocation processes in South Africa. In Cape Town, the production of the city's housing demand data started prior to the state's computerisation process in the 1980s, where the information was formalised into a particular way of knowing citizens and their housing need. In this period, this information was race-based, and organised according to practices that facilitated the segregated city.

In the post-apartheid period, the data were revised to ensure that what the city referred to as "latencies of race" were removed from the data. This example of a re-imagining of data illustrates how they are shaped by particular contexts, and also how they can be re-shaped with new political logics guiding how the data changes. This and other examples of how the data are standardised, maintained, and aggregated through processes of data cleaning also demonstrate how the "ambiguity, conflict and contradiction" of the data are "obscured" by the ways in which they are "divided and classified" (Gitelman 2013: 9).

Paying attention to the creation of data, as I have done through this examination of the database, its form and function, makes visible the state's work that shapes data and the technology that holds them. It allows me to pay attention to the work completed to smooth over the ambiguities,

conflicts and contradictions to which Gitelman refers. The state's work in standardising, cleaning and maintaining the data similarly obscures the "observational standpoints", or the logics, assumptions, and rationales that underpin the production of data.

These observational standpoints are important, as the South African case demonstrates, because data are produced in particular contexts. Cape Town's housing data has quietly undergone much work to make sure that they align with the post-apartheid political ideologies of equal access and fairness – specifically, housing information is no longer classified according to race. Instead, access is framed through meeting the state's eligibility criteria for housing need which is based upon income levels, disability, time spent waiting for assistance, proximity to housing opportunities, among other indicators.

This shift in logic demanded paying attention to the contexts in which the existing housing demand data were created. While the state could have decided to abandon the existing housing information and instead begin a new way of allocating houses, it equally considered another aspect of the context of the existing data, and that is citizens' commitments to time spent waiting for state assistance. This component of the data – the time spent waiting – was the closest indicator of the state assistance 'queue', and as a result, was fraught and highly charged politically. Dismissing citizens' time spent in this queue was politically disagreeable, and so the application data, with all its apartheid indicators, had to be preserved.

This preservation of data required undertaking a considerable project of de-racialisation, standardisation, and updating to ensure that those citizens who were not permitted formal access to the city and its housing assistance during apartheid could be added into the data, with the length of time they had lived in the city taken into account. This huge endeavour was premised on the state's understanding that the data were socially constructed to a particular rationality that had to be re-engineered in the post-apartheid period.

The need to re-engineer data did not end once these various 'legacy systems' and the interim housing demand register had been integrated into the database as we know it. Rather, the maintenance of the data and the database are everyday jobs. This work is critical for ensuring that the data are useable for the City, for the province, and at the national level. This work is what Ribes and Jackson (2013: 148) refer to as a "complicated ontological choreography", the work of ensuring that data are able to be used over extended periods of time, in ever-changing technological systems. This work to sustain the functionality of data involves, as they describe it, "a complex assemblage of people, instruments, and practices dedicated to [data's] production, management, and care..." (Ribes and Jackson 2013: 148).

In the case of the housing database, this work on the data is invisible, undertaken by a small number of officials who have security clearance to make changes to data like their identity, income, disability and family contexts, that are personal and private to the applicants. The potential breaching of the confidentiality of this information could result in political targeting which would be detrimental to the *raison d'être* of the database if the data were to be tampered with to make potentially unfair allocation decisions. Ironically, however, this work is critical to maintain the state's allusion to fair practices, to ensuring that data are equivalent across the database. The state's work of cleaning the data to maintain is critical for the efficient functioning of the database as a holder of up to date, accurate information, embeddable within the provincial and national platforms.

The production of the database builds on the work undertaken by the state. But this work to maintain the database's functioning is concealed from public view, and therefore absent from housing debate. Invisible from view, instead the database is invoked publicly as a way of reassuring housing applicants who wait patiently for state assistance that decisions are made through a technical, impartial state tool. The database is also actively invoked in various policy

discussions, functioning within a wider, multi-scaled state policyscape. The third critical way in which the database acts as a mode of governance, the database plays an important, but largely unexamined, role across scales of government.

At multiple scales: The database's function in the policyscape

The database is used less frequently than the state might like to admit. The scale of housing need, the state's capacity to respond to this imperative, and the realities of state housing development in response to successfully contested land occupation legal battles means that there are rarely no existing claims to the state's housing developments. In these cases, homes are already earmarked for those named in court proceedings. Furthermore, the re-allocation of council-owned rental housing stock happens sporadically. Yet the database is invoked and emerges as an object in a broader policyscape of housing allocation, a possible political and administrative solution to allocation challenges.

The database is entrenched in housing allocation policy and in practice. The City of Cape Town's housing allocation policy describes the database and its role in allocation, showing that it is a tool that prioritises protocols that ensure compliance with the nationally stipulated eligibility criteria. The policy invokes the database in a particular way. It is drawn on primarily as a descriptor of the work of allocation, but also demonstratively as a response to the administrative challenge of making decisions in the context where demand outweighs the supply of opportunities. It is also invoked in the anticipation of contestation of housing allocation decisions, what drives and legitimizes the securitisation of the data, what protects the state's practice of allocation decision-making.

While not described as such in the policy, in effect the database is a tool that enables calculative state practices. As a tool of calculability, the database is a repository of housing demand data

through which each project's unique algorithm sifts to make allocation decisions. This algorithm is based on how each housing project's steering committee agrees to define certain aspects of eligibility – these include the percentage split of applicants from backyard shacks, overcrowded council houses and informal settlements, as well as proximity to the development). This decision, signed off in the Allocation Request Form, guides how allocation decisions are made, and dictates how beneficiaries are selected from the database. The Allocation Request Form is a bureaucratic requirement that is used by the state as a way of ensuring and recording participation by the project steering committee. The form is completed by the project steering committee and provides a safeguard to the officials who select names from the database according to the stipulated criteria. The need for this form hints at the nature of the contestation in housing allocation decision-making. Furthermore, it is in this form where questions of justice are implemented at the micro-scale – where allocation might be skewed towards particular neighbourhoods as a result of previous discrimination. Where housing need is greater than the state's capacity to deliver houses to all who require assistance, the database's role as a tool of calculability is critical and thus politicised. Through this form, there can be no confusion about why certain applicants were selected over others when the housing waiting list is publicised. This is one example of how the state protects the integrity of the database, by ensuring that its role as a tool of calculability cannot be questioned.

The integrated housing database is also part of the state's suite of tools for ensuring applicants' eligibility for housing assistance. Entry into the database requires meeting the most basic of the state's eligibility criteria – in Cape Town, this is the requirement to live in the city. The other eligibility criteria as stipulated by the state are taken into account, but not meeting these does not exclude an application from being captured on the housing database. Rather, adherence with the eligibility criteria is checked at the point at which an applicant is long-listed to become a potential beneficiary. At this stage of housing delivery, the data within the database are

updated by the applicant at the City's request and this information is cross-checked with other state databases to check the information's veracity.

The extent of the state's commitment to bureaucratic procedure is further demonstrated by the multiple national databases that are consulted before any housing allocations are made. The particulars of housing applicants are filtered through various state-generated databases to ensure that only those who meet the eligibility requirements, and who have not been assisted by the state for housing before, may be allocated a housing opportunity. The procedures that ensure this require multiple checks across local, provincial and national databases that reflect applicants' employment details, income information, and even check for potential cases of identity fraud. These checks are critical for continuing to uphold the database's reputation as a technical, reliable, procedural tool for making allocation decisions. All of these procedures reflect the state's commitment to apolitical decision-making.

The database works to ensure fair housing allocation practice at the local level and beyond. Its embeddedness in processes beyond that of the local state is not apparent when looking at the database in its public invocations. Yet its embeddedness is part of the state's project of fair allocation practices. While the database draws on other datasets to establish applicant eligibility during the allocation process, it is also drawn upon by other datasets. Beyond the local level, the database is also embedded in provincial and national processes. This is a critical component of the database's role as a tool of calculability and legibility (Scott 1998; Vale et al. 2017; Street 2012).

As the City of Cape Town's dataset on housing demand, this information is shared with the provincial government to include in the Province's housing demand database. This arrangement, where the city's data are shared with the provincial government on a monthly basis, is peculiar to Cape Town and largely a result of how the database programmes were

developed, and a long-term institutional arrangement. Similarly, at least in theory, the provincial dataset is embedded in the national housing register.²⁰ The inclusion of local data across the different spheres of government demonstrates the significance of the database beyond merely a local-level tool for determining housing allocation.

What remains undisclosed in the public framings of the database is that the database records applicants' housing demand, rather than their housing need. This suggests that the database is less useful for state planning purposes than it was previously imagined to be. Housing demand is assumed by the state to be far higher than housing need where need is defined through the state's eligibility criteria. The eligibility criteria remain static, they are rarely revised to account for changing income levels and the cost of living, for example. Whether or not this affects distinctions between need and demand is debatable, and beyond the scope of this research. That the City's demand data are fed into the provincial and national registers means that this flaw in design is carried across the state's systems for collating housing need information. However, a system of calculability that works according to housing need, but collects data on housing demand, will mean that the state cannot determine the extent of the housing crisis by using the tool that it has developed to ascertain housing need.

Clearly, the database and the data held within it are embedded in a broader allocation policyscape. As a tool of calculative governance, the database is a key tool for making citizens' housing need legible to the state (Scott 1998), which thus enables the state to sift through housing applications in order to select a list of potential beneficiaries. The database is also a tool for determining eligibility for state assistance. In this role, the data held by the database is checked across various other state datasets, and in turn, is embedded in provincial and national housing demand registers. The database and the data held within it are used so that the state

²⁰ While the housing demand data held by the Provincial state is supposed to be transferred to the National Housing Demand Register, neither local nor provincial officials could confirm if the data are indeed embedded at the national scale, or at what frequency this occurs.

conforms to national visions of eligibility, with the database facilitating calculative practices through its algorithms for selecting beneficiaries, similar to those outlined by Borges (2006) in the case of housing in Brasilia.

The embedded nature of the database and its data are invisible to most. Yet this embeddedness contributes to the state's mandate for fair decision-making, that considers information held across the state to double check the validity of housing allocations. This function of the database in the broader polycscape, like that in the previous section, contributes towards the surface-level understanding of the database that is typically invoked in the public domain, that this is a protected, technical and therefore seemingly apolitical way of ensuring fair housing allocation. The notion of calculative practices of governance contribute to the technical appearance of decision-making, rendered through data and the database, both of which seem to be neutral, objective tools for decision-making. As Rose (1999), Murdoch (2000), (Neylan 2008)and, in the local context Donovan (2015), show, governance through calculative practices cannot be assumed to produce fair practices just because they are based on number crunching rather than human decision-making. Instead, we have to look at the components that constitute technologies like the database to see the work that goes into shaping them, and the contexts from which are derived.

Conclusion

Analysing the database as an object of study and as a complex state tool, one which is used in various ways and at varying scales of housing allocation. This argument is important for surfacing the state's work in the field of housing allocation. In making this argument, I bypass the polemical and false claims that the database is a myth, a convenient fairytale-of-sorts, or simply political, a tool for pacification. Instead, the research shows that the database is a state tool that is used as an agent of change. While it may not be used as often as officials would like,

the database is representative of the state's hopes for assisting those who need it and its commitment to redress. At the same time, it embodies officials' aspirations for a singular process of fair allocation, as well as the complex ways in which national and local policy are implemented and made material for decision making at the city scale.

In short, the database is a product of changing political imperatives and technological advances that enabled data-driven decision-making. It is also a site of state work, where processes of standardisation, amalgamation, imagination, cleaning and maintaining ensure the functionality of data for decision-making. But because much of this work to produce the database and the data held within it is invisible, the database is not transparently a site of politics. The database is not politicized directly because it is barely visible in the broader housing delivery context. It is not a focus of direct debate, even though it is the state tool that determines eligibility and thus shapes fair decision-making. In this positioning, it is a site of extensive state intervention, a product of historical injustices so evident in the geographies of decades long waiting lists for public housing. At the same time, it is an active place of statecraft, what shapes the practice of and aspiration to address present political imperatives for redress.

Yet in scholarly work on housing and its allocative politics, its redistributive potential, the database remains, at best invisible, more often dismissed. Much of South African housing debate focuses on the governance of housing (Amin and Cirolia 2018; Charlton 2009; Lemanski 2020; Mabin 2020; Ballard and Rubin 2017) or alternatively on citizen's resistance and activism in order to access safe housing (Lemanski, Charlton, and Meth 2017; Levenson 2017; Ngwenya and Cirolia 2020; Oldfield 2000). This body of work offers rich insights into the citizen-state encounter around housing access or the lack thereof. It also illustrates the manifold challenges of housing delivery, a form of governance in which the state's housing project is confronted by the need for citizens to negotiate shelter while waiting.

In researching and conceptualising the database as a mode of housing governance, I address this gap. I make visible the database as a state tool and the shifting regimes, institutions and technologies of governance that shape it. In doing so, I substantiate the ways in which the database is essential for envisioning the state's housing policies. Within existing examinations of South Africa's housing crisis, there is an array of state work that is barely visible.

Demystifying the database as a state tool is not intended to destabilise the state's claims of fair and transparent housing allocation decision-making, nor delegitimize the work of the database or the officials who have designed and maintain it. Rather, the intention is to focus on the ways in which the state undertakes its practice, and thus reveal and unpack the state's work of crafting its tools. Doing this not only surfaces the state's work in crafting its tools, but also illuminates the "observational standpoints" (Jasanoff 2017) from which the state shapes its tools; the "gradations texture and contradictions" (Charlton 2018b) that are navigated in the production of tools that appear to be apolitical, "self-evident" (Gitelman 2013) and therefore beyond examination and critique. In the final chapter I conceptualise the state's work of crafting its tools through processes of unpicking, stitching together, and finishing off, critical yet invisible processes undertaken in the development of tools in all contexts of governance.

Chapter 8: Crafting state tools: Building a vocabulary for the state's work

Introduction

In unpacking the database in terms of its development, its form and its function, I have shown that the database, its data, and its use in the practice of allocation is a mode of governance that is shaped by the state. While the database seems like a technical intervention in a politicised context, and the data appear to be neutral representations of applicant's lived realities through which the state makes allocation decisions, this thesis complicates dominant narratives of the database and data-driven decision-making as technical, apolitical interventions in an otherwise complex, contested, and political environment. I show how the database and the data within it are shaped by the state according to particular logics, rationales and commitments. This unravelling of the database brings to light the work undertaken by the state to create and maintain these tools so that they function seamlessly and therefore can slip into the background of state practice.

Here, I argue that we need a vocabulary to describe the state's work of crafting its tools. I build on the metaphor of crafting to describe the kinds of work that state officials undertake on a day-to-day basis to facilitate the appearance of coherently functioning, efficient instruments of decision-making. Examinations of state craft explore the effects of the state's processes of decision-making, the outcomes of the implementation of tools for implementing policies and processes (Sharma and Gupta 2009; Gupta 2012; Bernstein and Mertz 2011; Hull 2012).

Growing debates focus on the role of technologies, data and algorithms for automated decision-making, and question the politics that underpin these seemingly neutral tools used by the state to make decisions with significant consequences for citizens (Eubanks 2018; O'Neil 2016).

However, a lacuna exists in examining the state's crafting of these tools, the everyday acts of imagining, creating, maintaining and deploying these tools so that they can make decisions. While crafting takes on variety of forms, I offer three terms that describe the state's crafting, developed through the unpacking and examination of Cape Town's housing database as a key but unexamined tool developed by the state to ensure fair and transparent decisions in the contested field of housing allocation.

'Unpicking' refers to the work of undoing existing policies and practice, removing outdated, contested and irrelevant aspects relating to state processes. In relation to the database, the process of unpicking refers to the disbanding of racist institutional configurations and the unravelling of their policies of housing allocation and the associated tools that recorded housing need.

'Stitching together' refers to the state's work of joining together imperatives, commitments, policies and practices as a way of responding to shifting citizen needs and state promises. In the Cape Town housing allocation context, aspects of policies from across the city were incorporated into a single allocation policy. Likewise, data from applicants across the city was amalgamated and standardised, and later re-cut according to new municipal boundaries.

'Finishing off' refers to the state's work of making its tools appear to function seamlessly, the nitty-gritty work of ensuring that they operate coherently. The process of finishing off the tool renders it invisible, concealing within it the texture, gradation and contradictions of the work that goes into crafting the tool and sustaining its functioning. Finishing off in relation to the

database includes the securitisation of the data, the rendering technical of decision-making through the database's technology. Together, the unpicking, the stitching together and the finishing off of the database is a state process of crafting, processes through which the state reimagines and re-formulates the modes of governance of housing allocation according to current imperatives, commitments and logics.

I offer this vocabulary as a contribution to literature that speaks to state tools, and propose that these terms – unpicking, stitching together, and finishing off – are useful for positioning the housing database in academic debate, making visible the specific work undertaken by officials to ensure that the database functions. This vocabulary enlivens the work of the state, adding texture and gradations to the state's practices. This vocabulary of crafting makes visible and articulates the state's crafting in this critical, but often opaque tool for housing allocation decision-making. In the following section, I elaborate how the state's work of unpicking, stitching together, and finishing off have shaped the housing database and the data within it, to produce housing allocation decisions.

Unpicking, reformulating: logics, rationales, and state tools

The housing database was developed as a response to the inconsistent, unfair and often corrupt allocation methodologies of the past. The housing database is framed by the state as a tool for addressing the entangled bureaucratic and political challenges of housing allocation. Because the database is the successor to the race-based waiting lists of the apartheid era, the successful functioning of this instrument required of state officials a careful process of unpicking policies and practices of housing allocation so that they could be re-formulated for a post-apartheid allocation practice premised upon fairness. This work of unpicking was in the past a significant project, critical for the public legitimation of this state tool. The state's work of unpicking involves a process of unravelling, making decisions about what is discarded and what remains.

In practice, this meant, for the state, the removal of overtly racist methodologies of allocation and racial categories from application data and keeping aspects of policies, practice, and data based on logics of efficiency, ease of standardisation and aggregation. Through this critical state project of unpicking – or in the state’s language, practices of standardisation and uniformity – policy, practice and data were aligned with post-apartheid principles of equality of access.

The work of unpicking in relation to policies was most apparent in terms of rationalising the matter of time spent waiting for assistance on the housing waiting lists. Because these lists were racially constituted, officials had to either remove this component of data, which was, understandably and justifiably, highly emotive for those waiting, or find a way to add to the lists the names of those who had not had access to them in the apartheid period. This was the more attractive solution politically, but an administrative challenge. The unpicking of this policy required finding new ways of making sense of a claim to housing, and backdating application entries so that the register was more representative of the city’s demographics and need.

The unpicking work was also apparent in the application data. The fairness of housing allocation decision-making is premised upon the database’s capacity to hold all housing applications, through which allocation algorithms stipulated by each specific housing project, sort. While this is the premise of the housing database – a repository for all housing application information, both current as well as the past – there is an assumption that the database as a repository is a simple administrative task. This assumption removes from view the crafting work undertaken by officials to ensure that the database operates as a functioning collation of housing demand data. Unpicking of the data required the removal of latencies of race from the data, the re-configuration of identity number formats from the apartheid versions with racial indicators, to the new versions without. In addition, the unpicking required reconciliation of data that existed in different platforms across the city. The state’s work of unpicking is not only historical. The work of unpicking continues in the present period, where data are scrutinised for accuracy and

completeness, their attributes examined closely before being captured into the database and aggregated with the existing data.

Unpicking is an everyday state practice, ensuring that data meets the standard field codes so that it can be collated and aggregated, that missing data are flagged, and maintaining the data so that it remains up to date and therefore useable across the new database systems as well as the provincial and national systems in which it is embedded. This invisible work of unpicking and reformulating – or the “ontological choreography” (Ribes and Jackson 2013: 148) to ensure that data remain relevant across changing times, technologies, systems in which they are embedded – is critical to the development as well as the functioning of the database. Unpicking is a process of undoing, of untangling existing logics, rationales and modes of governance. It is also a process of reformulation, through which the state critically examines existing policies, practices, and data, unpicking what is no longer useful, and in the process, re-imagining the rationale and intentions of what remains.

Moreover, in the South African case, the work of unpicking is responsive to the injustices of the past, and therefore has a broader logic to align policy, practice and data with democratic imperatives of justice and redress. Yet the work of unpicking is concealed by the finished-off nature of the database, invisible to all but the handful of officials who are tasked with this process of reimagination. In the following section, I turn to the state’s practice of stitching together, another form of crafting that repurposes existing policies, practices, and data to produce a mode of governance that functions in a seamless fashion.

Stitching together, repurposing: policy, practice, and data

Accompanying the process of unpicking is the work of stitching together. As part of the reimagination of existing policies, practices, and data emerges a repurposing of what remains.

The state's practice of stitching together and thereby re-purposing existing policy, practice and data, is essential for ensuring continuity in delivery.

In the Cape Town housing context, the processes of unpicking and stitching together have occurred several times as a result of shifting local government between the late 1980s and the early 2000s. This stitching together work brings together re-imagined and repurposed policy and practice. Through processes of stitching together, the housing demand data were aggregated into a single dataset, which was then split according to newly-defined, desegregated, municipal boundaries. Stitching together offers the state a way to reconfigure housing allocation according to principles of fairness. It is the imagination of new, fair, ways of doing housing allocation and the making of the database into a mode of governance. Like unpicking, the stitching together of the remaining policies, practices and data that were unpicked from the past versions was a political logic, appealing to citizens' existing stakes in waiting for housing. Stitching together dates spent in the city allowed for a fairer non-racial waiting list, a way of backdating claims to the city in a previously segregated context.

In terms of housing application data, the process of stitching together ensures that the data are aggregable, standardised and uniform across a formerly divided city. This work of joining together ensures that the data are suitably standardised so that the algorithm can sift through the database according to the allocation criteria and produce a shortlist of housing beneficiaries who are deemed to be fairly chosen.

Like the unpicking process, stitching together is critical for the overall functionality of the database, ensuring the seamlessness that renders it invisible. And like unpicking, this state craft is invisible, concealed behind security features that are crucial for the integrity of the database's depiction as a tool that overcomes corruption, nepotism, favouritism and political interference. The work of stitching together state tools is sometimes dramatic as in the South African context,

where the shift from apartheid to democracy required stitching together and repurposing of policies, practices, and data. But stitching together is also often banal work, the necessary maintenance of state tools where policies, practices, institutions and technologies change over time. This work produces the database as a functional state tool. The following section turns to the state's craft of finishing off state tools, which has the effect of rendering them invisible.

Finishing off, rendering technical: State tools and their (in)visibilities

The opacity of the database's workings means that its form and functions in housing governance are barely visible in housing debates. This affect is in large part because the database appears coherent, a seamless tool. It appears an efficient mechanism to allocate housing according to the state's eligibility criteria, a representation of bureaucratic and political legitimacy. This appearance is the product of the state crafting, in particular the work of, what I conceptualise, 'finishing off', the tying together of loose ends, the polishing of the database product so that it functions in a way that seems to be seamless, thereby producing decisions that look technical. The coherent operation of the database is part of the allure of a technological intervention for decision-making – it has to operate smoothly in order to be beyond scrutiny. Finishing off denotes a process of beautification, building on Halpern's (2015) notion that functionality and utility render data beautiful, a polishing of the tool so that it functions smoothly, works as intended, and is secured.

In relation to the database, the finishing off process requires maintaining the data so that it is uniform across the database. It is about the addition of modern requirements, such as SMS notifications to applicants, and geo-mapping new applications. This is about ensuring its outward appearance as a functional and modern state tool, while simultaneously also about ensuring its political legitimacy through constant improvement to securitisation measures. Finishing off is a critical component of the state's work, which, together with unpicking and

stitching together, reproduces the database as an efficient state tool. The state's work of finishing off provides the database its legitimacy, politically as a state tool that addresses challenges of housing demand, and bureaucratically as a tool that makes sense of the complex administrative terrain of housing application information.

The intensive state work of unpicking, stitching together, and finishing off – the work that makes the database operate in a coherent and seamless manner – is what renders its form and function opaque. Through its efficiency, as well as the opacity of its form and function within the broader housing governance terrain, the database is rendered invisible. Despite this rendering, the database is not singularly invisible (Larkin 2013) as it is sometimes characterised. Instead, it is barely visible for the most part, invoked publicly at some points in the allocation process, and otherwise operating behind the seamless façade of its technology. To conceive of the database as exhaustively invisible erases the states work in crafting it; the processes of unpicking, stitching together and finishing off, as well as the database's functionality as a mode of governance in housing allocation decision-making.

Rather, the database occupies a range of visibilities: from the public tool for decision-making, invoked as a demonstration of the state's commitment to citizens who have applied for housing assistance, a technical assurance of fair allocation processes, to the securitised technology with limited accessibility, and versions in between these extremes, the database's form and its function in the broader policyscape is rendered opaque by its seamless veneer.

Conceptualising a vocabulary of the state's crafting shows how visibilities of the database are partial and situated. For those who work directly on the database every day, it is visible on a daily basis, its existence apparent from when they switch on their computers in the morning and receive notifications of applications waiting for approval to enter the system and be included on the database. For this handful of officials, all components of the database are visible

– the data that comprises its internal dynamics; the ‘back end’ of the database interface, a language in itself; and the ways in which it functions in the broader housing policyscape, embedded in registers at the provincial and national scales. For these officials, the database is a continual work in progress, far from the finished-off technology that is presented to other actors who engage with the database. For other officials, only the public-facing veneer is visible, the user interface comprising their engagement with the database, through which they enter or extract information for housing applicants, for development planning purposes, or for cross-referencing of applicants. Here, parts of the database are visible, based on the user’s levels of access to the database’s information.

In contrast, for researchers and journalists, and those who wait to access housing from the state, the database is visible only as a finished-off product, impermeable beyond the simple sign-in webpage for those who have applied for housing assistance. The finished-off and inaccessible nature of the database renders it invisible. This could be positioned as an intentional state rationale for concealing the politics that underpin housing allocation decision-making. Indeed, the invisibility of the internal dynamics of the housing database is arguably deliberate. The integrity of the data are critical to the functioning of the database, and it has to be protected from outside influence, particularly given Cape Town’s history of unfair, often corrupt and nepotistic allocation practices in the past. The ‘black box’ nature of the database, then, and the data within it, is not surprising given the context in which this technical system of allocation was introduced. The integrity of the process of housing allocation, and the protection of the data through which high-stakes decisions are made, are critical.

However, the invisible rendering of the database and the mystique that comes from this opacity contribute to misplaced assumptions that the database is either apolitical, invisible, or a myth. The intangibility of the technology, the lack of clarity in how and when it operates, and the opacity of the decision-making structures lead us to question its existence. But by privileging

this limited understanding of the database, by looking only at the finished-off product, we fail to take into account the different visibilities of the database and the effects of these.

The always ongoing work of crafting state tools

The vocabulary of unpicking, stitching together, and finishing off makes visible the actual work of the state, its crafting of a tool like the housing database. This vocabulary is important because it shows the state work that goes into the production of tools that are usually incidental to debates on state practice. This vocabulary describes the state's building of calculative practices of governance (Neylan 2008; Borges 2006). The concepts of unpicking, stitching together, and finishing off are critical for elaborating what this state work entails.

For the database and the data held within it, this vocabulary makes clear that the database exists and operates as a key tool for allocation, even if the state uses it less frequently than it might like to admit. The state's crafting demonstrates its investment in making allocation practices fair and transparent and its commitment to the ongoing daily work which enables the practice of housing allocation. The investment in state tools demonstrates the centrality of the state in resource allocation in South Africa (Bénit-Gbaffou and Oldfield 2011) and why, when examining the state, attention ought to be paid to its tools as well as its actors, to show how these are also "everyday social construction[s]" (Mountz 2003: 624) that "dissolve under scrutiny" (Gupta 2012: 45-46).

The concepts of unpicking, stitching together, and finishing off also articulate how the database and the data within it are socially constructed within particular contexts, and therefore not the neutral tools that they seem to be at first glance. This vocabulary and paying attention to the specific crafting work makes visible the "observational standpoints" (Jasanoff 2017), or the logics, assumptions and rationales, that shape the database and its data. This positioning of the

database and the data held within it is critical to situate the state's project of resource allocation through technological tools like the database.

Examinations of statecraft (Sharma and Gupta 2009; Gupta 2012; Scott 1998) pay attention to the ways in which the state does its bureaucratic work and the power inherent within the ways it practices its decision-making. However, these analyses of state practices largely focus on the effects of statecraft, rather than the state's actual *crafting* of its practices through specific tools. The majority of South African literature on housing, for instance, is preoccupied with housing access as a state project, one that shapes and is shaped by citizen-state encounters. Focused on the effects of the state's decision-making and its tools on governance and the lived experiences of housing challenges, it largely overlooks the ways in which the state makes legible its citizens (Scott 1998; Rose 1999) for practices of calculative governance, and consequently disregards analysis of the state's actual tools, their forms and functions, their genealogies, their work as sites of practice and politics. This gap is what I address through this research. In bringing into view the housing database, the technologies, logics, assumptions and rationales that underpin it, this research provides a new lens that elaborates the complexity of state practice in processes of housing allocation.

In re-rendering the housing debate through this focus, I argue that state tools have to be examined as critical components in the execution of policy. In doing so, I extend the notion of statecraft, paying attention to the crafting of state tools, the 'doing' work undertaken by the state to make decisions according to its social obligations. Building a techno-political framing to articulate this argument centres the power inherent within state tools and brings into view the co-constitution of technology and politics (Hecht 2011) for calculative practices of governance (Von Schnitzler 2016). This framing problematises the assumption of an underlying technical neutrality in state tools, and as a result, demands examination of the veneer of invisible state tools. By surfacing this work, I substantiate the state's processes as a form of datafication,

processes in which superficially apolitical data are made and shaped according to the ways in which the state needs to make legible its citizens. By shifting attention to the database as a state tool, I bring into view what appears invisible on the surface. The materiality of tools and the internal dynamics that constitute them become the subject of inquiry.

Conclusion

Attention to the making of and maintaining of state tools is critical. It offers an alternative entry point into the South African debate, and a vocabulary of crafting that offers ways to take forward the project of disaggregating the state. Examination of the development, the form, and the function of the database highlights the importance of this state tool and the varied forms of state craft that sustain it. This research makes visible the database and its various aspects; its public-facing position, its internal dynamics and the policyscape in which it sits. The state's work of crafting the database – the unpicking and reformulating of logics and rationales, the stitching together of policy, practice and data, and the finishing off and rendering invisible and technical the decisions made through this tool – is central to the state's project of fair housing allocation. This vocabulary of crafting nuances debates on state craft and the state's tools through which it governs.

In short, this research reveals the varied forms of statecraft that have unpicked and stitched together policies, data and practices, the state's work that lies beneath the seemingly seamless, finished-off façade of the database. Examining this state craft unravels the state's work to 'finish off' the database, to produce its surface veneer, and the work to consolidate and legitimate its logics. The project of making the database visible highlights the "gradations, texture and contradictions" of these tools, and the statecraft that is key to their development, form and function. This analysis opens up the South African housing crisis beyond the impasse where citizen demand exceeds the state's capacity to supply houses, and shifts the narrative away from

an ambivalent, unwilling or uncaring state, to one that makes visible and describes the state's craft in housing allocation decision-making.

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Appendices

List of Archive Sources

I was privileged to have spent time in the University of Cape Town government publications stacks, which were housed in the Jagger library that caught fire in April 2021. While some library material has been recovered, the records for what has been salvaged have not yet been disclosed. I assume, because of its position in the building, that the materials listed have been lost. Below is a list of the materials that I consulted and used (or thought might be useful for my research). The specifics of the documents have been referenced in text in the body of the thesis.

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- The Divisional Council of the Cape housing committee minutes (February 1984-June 1987), UCT library Government Publications records.
- The official yearbook of the Republic of South Africa, 1988-89.

Western Cape Archives

Miscellaneous records pertaining to housing in Cape Town in the 1980s and 1990s.

City of Cape Town Website Resources

- City of Cape Town Housing portfolio committee meeting agendas, minutes and supporting documents (monthly, January 2004 – September 2011).
- City of Cape Town Human Settlements portfolio committee meeting agendas, minutes and supporting documents (monthly, October 2011 – January 2017).
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List of Interviews

- Interview with University of Cape Town academic who worked in partnership with the Provincial Department of Human Settlements on a housing allocation framework (4 November 2016)
- Interview with University of Cape Town academic and former civil society organisation actor, who worked on questions of housing and allocation in the Western Cape and Cape Town more specifically (9 November 2016)
- Interview with retired City of Cape Town official, current Province official, who worked on housing information in both institutions (29 November 2016)

- Interview with City of Cape Town official, formerly involved in housing policy and research, now in sustainable urban management (4 July 2017)
- Interview with Provincial Government of the Western Cape official, involved in housing policy and research (25 October 2017)
- Discussion with a member of a non-profit organisation involved in informal settlement upgrading projects (2 November 2017)
- Interview with City of Cape Town official involving in housing information (8 November 2017)
- Discussion with a Stellenbosch University academic, with research interests in housing allocation practices in the 1980s (10 November 2017)
- Interview with former City of Cape Town official, previously involved in housing project management (30 November 2017)
- Interview with City of Cape Town official working at a neighbourhood housing office (14 December 2017)

Interview Schedule

While I adapted the questions for each interview to take into account the respondent's position, history, and knowledge of the database, I based my interviews around the following themes.

- Respondent's role and position
 - What is your role in the City/Province/elsewhere? How does this connect with the database and housing allocation?

- The functioning of the database
 - how it works, when is it used, by whom, at what stage of delivery

- The positioning of the database
 - internally in the CCT
 - externally - how does it sit in relation to Province and National processes (and their databases); how does it interact with policy?
 - For respondents at Province – what is the City's database's role in relation to Province? How does it differ from Province's database?

- What are the rationales/logics behind the database?
 - Logical, systematic and procedural way of going about allocation – is this the case, something else?

- Does the database change and adapt?
 - If so, at what particular moments? For what reasons?

- History of the database
 - From waiting lists to database – how did this transition happen? How do lists differ from database? How did the database come to be?
 - How has the history of the database influenced today's database?

- Data
 - What data are collected in the current database? How are the data sorted (according to what criteria, and how are the criteria decided upon)? Have the types of data collected changed over time? Have the criteria for sorting the data changed at all? What was the logic underpinning these changes?

- The role of the allocation policy
 - How is the database used in relation to the allocation policy?
 - How has the policy changed the database, and vice versa?

- Anything else to add? Resources I should consult? People I should speak to?