

RESEARCH ARTICLE

Modelling the city: bedroom drawer blueprints as urban planning in Maputo, Mozambique

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Abstract

It has become a well-rehearsed truism that the growth of sub-Saharan African cities is the result of an amassing of persons, things and knowledge that takes place in the absence of centrally planned development initiatives and without any tightly orchestrated coordination of social life. Under such conditions, the argument goes, urbanites make do with whatever resources are available while increasingly chaotic cities expand beyond their social and material capacities. The question is, however, whether weak – and even absent – systems of urban management can be taken to signify a lack of coordination and planning of urban development. Might it not be, for instance, that cities organize and model themselves through means other than those afforded by formal urban planning schemes? Based on ethnographic data from Maputo, Mozambique, this article explores the shifting material forms of what are locally described as ‘bedroom drawer blueprints’ as an acutely potent type of urban modelling. Current and prospective house builders in Maputo exchange and share blueprints and physical and virtual models of houses that they plan to eventually build. Considered by residents as valuable social and material assets, such blueprints and models also offer an opportunity for experimenting with new forms of aesthetic organization of the city. Comparing the ongoing transactions and sharing of bedroom drawer blueprints with the increasing global circulation of middle-class architectural urban models, in this article I argue that it is the capacity of the former to move between different material forms and modalities that gives them their particular aesthetic potency and drive.

Résumé

C’est désormais un truisme souvent répété que de dire que la croissance des villes africaines subsahariennes résulte d’un amassement de personnes, de choses et de connaissances qui survient en l’absence de programmes de développement à planification centralisée et sans coordination bien orchestrée de la vie sociale. Dans de telles conditions, selon l’argument, les urbains font avec les ressources disponibles tandis que les villes, de plus en plus chaotiques, se développent au-delà de leurs capacités sociales et matérielles. La question est de savoir, cependant, si la faiblesse, voire l’absence, de systèmes de gestion urbaine peut se traduire par un manque de coordination et de planification du développement urbain. Ne se pourrait-il pas, par exemple, que les villes s’organisent et s’inspirent à travers des moyens autres que ceux qu’offrent les programmes formels de développement urbain ? S’appuyant sur des données ethnographiques de Maputo (Mozambique), cet article explore les formes

matérielles changeantes de ce que l'on appelle localement « bedroom drawer blueprints » [que l'on pourrait traduire par « plans de table de chevet »] comme type extrêmement puissant de modélisation urbaine. À Maputo, les entrepreneurs actuels et potentiels échangent et partagent des plans de construction et des modèles physiques et virtuels de maisons qu'ils projettent de construire un jour. Considérés par les résidents comme des biens sociaux et matériels de valeur, ces plans et modèles offrent également une occasion d'expérimenter de nouvelles formes d'organisation esthétique de la ville. Comparant les transactions en cours et le partage de plans à la circulation mondiale croissante de modèles urbains architecturaux des classes moyennes, l'auteur soutient dans cet article que la capacité de ces plans à passer d'une forme matérielle et d'une modalité à une autre est ce qui leur donne cette puissance esthétique particulière et ce dynamisme.

Resumo

Tornou-se um truísmo bem ensaiado que o crescimento das cidades da África Subsaariana é o resultado de uma acumulação de pessoas, coisas e conhecimentos que ocorre na ausência de iniciativas de desenvolvimento centralizadas e sem qualquer coordenação estreitamente orquestrada da vida social. Em tais condições, o argumento vai, as cidades urbanas contentam-se com os recursos disponíveis, enquanto as cidades cada vez mais caóticas se expandem para além das suas capacidades sociais e materiais. A questão é, contudo, se os sistemas de gestão urbana, quer fracos - ou mesmo ausentes - podem ser levados a significar uma falta de coordenação e planeamento do desenvolvimento urbano. Não seria o caso, por exemplo, que as cidades se organizem e se modelizem por outros meios que não os proporcionados pelos esquemas formais de planeamento urbano? Com base em dados etnográficos de Maputo, Moçambique, este artigo explora as formas materiais variáveis do que é descrito localmente como “plantas de gavetas de quarto de dormir” como um tipo de modelação urbana extremamente potente. Os actuais e futuros construtores de casas em Maputo trocam e partilham plantas e modelos físicos e virtuais de casas que planeiam eventualmente construir. Considerados pelos residentes como bens sociais e materiais valiosos, tais plantas e modelos oferecem também uma oportunidade para experimentar novas formas de organização estética da cidade. Comparando as transacções em curso e a partilha de plantas de gavetas de quartos com a crescente circulação global de modelos urbanos arquitectónicos de classe média, neste artigo defendo que é a capacidade dos primeiros de se moverem entre diferentes formas e modalidades materiais que lhes confere a sua particular potência estética e dinamismo.

Introduction

Most cities grow from a generative tension between the planning ideals that articulate what is desirable for some and the distributed spatial agency that facilitates the practical agglomeration of bodies, things and ideas for the many. There is probably no city in the world today that has not been subjected to ambitious and often all-encompassing ideological modelling projects to align the functions and aesthetic design of urban spaces with the social life of residents. And while ideological aspirations for urban synchronicity might be driven by articulate desires to genuinely improve material and social welfare for all citizens, they are often contradicted and contorted by the immediate concerns and challenges faced by people who live in the cities. It is through the hands of the powerful that urban models are crafted.

The dispossessed and marginalized majority of the world's cities live with the consequences as a premise for the everyday creativity with which they give to the urban its vibrancy and drive. Nowhere is this tenuous balance of counteracting forces executed with greater skill and finesse than in the cities of sub-Saharan Africa. Across the region, urban models are being circulated deliriously as if the speed of their movement could somehow stabilize the governance scaffolds and administrative machineries that seem to be designed mainly as aesthetic props for entrenched political elites and their privileged cosmopolitan collaborators. What holds the urban together in this region, we might say, is a fraught but dynamic relationship between an arrangement of speculative fictions of future urban models and the concrete socio-material realities of people's everyday lives where the latter are never in sync with the former.

It is probably not too controversial to speculate that a wide range of urban scholars today would consider the above account to be more or less accurate. In many recent works by urban scholars, urbanism in the global South and in sub-Saharan Africa in particular is taken to be built from dense but flexible webs and juxtapositions of social connections and detachments, ever changing material formations and circulating utopic imaginaries, with the visible ones doing the least of the heavy lifting. In his introduction to a symposium on African urbanism, Pieterse tells us that the socio-cultural dynamics of cities in the region are 'so unruly, unpredictable, surprising, confounding and portentous, it would be fitting to call them rogue' (2011: 1). Infused with a 'shared historical rhythm' of European colonialism (Coquery-Vidrovitch 2005: 4), present-day African cities cover a fractured landscape where much of what used to be still remains as traces of past struggles, desires and dreams that may again be activated. Consequently, '[m]uch of what happens in African cities is invisible or unpredictable and might seem bizarre to the unfamiliar visitor' (Myers 2011: 23).

In this article, I want to heuristically follow a slightly different analytical trajectory in order to explore the social and material dynamics of sub-Saharan African urbanism. While the account above may be accurate, it also leaves ample space for investigating forms of urban modelling other than those introduced through comprehensive spatial ordering apparatuses, such as institutionalized land development and private property investments (or some combination of the two). If the worlds that are being conjured from the incessant production of planning promises rarely if ever materialize (cf. Abram and Weszkalnys 2013), what we need to ask ourselves is not simply how and why the gap between plan and material practices continues to haphazardly constitute the space of African city-making, but, equally importantly, whether that relationship (plan/material practice) could be imagined otherwise. Might it not be, for instance, that cities on the African continent organize and model themselves through means other than those afforded by formal urban planning schemes?

Based on ethnographic data from Maputo, Mozambique, this article explores the shifting material forms of what are locally described as 'bedroom drawer blueprints' (*planta da gaveta do quarto* or simply *planta da gaveta*) as an acutely potent form of urban modelling.¹ Current and prospective house builders in and around Maputo

¹ In this article, the Portuguese noun *planta* is translated as 'blueprint' to maintain the idea that the designs indicate to the owners precisely how a future building is expected to be built, irrespective of whether or not the blueprint might actually function as a technical building manual.

exchange and share blueprints and physical and virtual models of houses that they plan to eventually build. Considered by residents in many different neighbourhoods of Maputo as valuable social and material assets, such blueprints and models are oriented by opportunities that arise for experimenting with new forms of aesthetic organization in the city. Taking my inspiration from Gilbert Simondon's work on 'technical objects' (2012) and recent work by Keller Easterling on urban design (2021), I explore blueprints and house models as based on 'protocols of interplay' that curate or set the parameters for how things interact. By relating and contrasting the ongoing transactions and sharing of bedroom drawer blueprints to the increasing global circulation of middle-class architectural urban models, in this article I argue that it is the capacity of the former to move between different material forms and modalities that gives them their particular aesthetic potency and drive. Rather than claiming that the movements of spatial blueprints in and around Maputo's peri-urban neighbourhoods reflect a wider global phenomenon (which, however, they often do), the argument goes the other way: by carefully tracing the imageries and concrete movements of blueprints within a local urban environment, we might get a glimpse of the dynamics that orient and often condition global urban development today. In that sense, the circulation of urban models in Maputo is a local phenomenon gone global.

The circulation of urban models

According to Ross Exo Adams (2019), the urban character of any locality can be defined in terms of circulatory flows that are at once territorializing and spatially disruptive. What connects the different physical localities is a distributed form of speculative experimentation, where city-making is imagined as a set of modular practices that may have been developed initially in specific sites but that gain impetus by their circulatory capacity (Brenner 2013). It is, in other words, the capacity of a certain repertoire of aesthetic forms and planning ideas to travel and take effect in urban sites other than the ones in which they were first envisioned and formulated that will eventually constitute their efficacy as urban models (Ong 2011). What problematizes the smooth circulation of urban models is that they are carried by an illusion of universal purity. The transfer of urban models introduces a system of global transactions that appears to operate independently of – and therefore is unaffected by – the local environments in which they come into effect (*pace* Appadurai 1988; Ferguson 2006). Large-scale building projects initiated by international construction consortia are often ringfenced against existing built environments in order to accommodate the exclusive needs and requirements of the fortunate few who have the financial resources and relational clout to lift themselves over and above wider society (Murray 2017). Still, at the same time as the capacity of planning ideals, knowledges and aesthetic forms to circulate the globe threatens to become complete detachment, the de- and re-contextualization of urban models bring them back into the messiness of existing cities.

The growing body of academic work on the global circuits of urban planning knowledge and aesthetic forms has documented how cities are being interpenetrated by speculative investment projects that fundamentally transform and rescale how local territories are imagined and acted on, even by those who inhabit them (cf. Tsing 2000). But that tells us little about the capacity of urban models to circulate

in the most local environments of the cities themselves. How is the spatial agency of residents entangled with the global circulation of urban models? And could it be that the circulation of urban models – aesthetic forms and planning knowledge about the ideals of a desirable and achievable urban life – is in itself a viable means of ordering the city for local residents? In that sense, the circulation of urban models may perhaps be considered as a material form of city-making that is productively detached from its physical medium of articulation.

Nelson's bedroom drawer house model

Until 2000, Nelson lived with his extended family in Polana Caniço, a densely populated low-income neighbourhood near Maputo's city centre. During the early months of the year, a series of floods caused by the El Niño weather phenomenon literally washed away a large section of the neighbourhood, including the three-room cement house that Nelson had built himself (Nielsen 2010; see also Christie and Hanlon 2001). Together with hundreds of residents from Polana Caniço and five other neighbourhoods in Maputo, Nelson's family was resettled in Mulwene, an area on the northern outskirts of the city, which until then had been occupied only by small-scale farmers and a scattered group of newcomers. During the first chaotic months of the year, while the municipal authorities were still desperately struggling to cope with the immediate consequences of the devastating floods, all disaster victims stayed in military tents. As the torrential rains continued to wreak havoc on the city, it became increasingly clear to everyone that it would be impossible for most of the victims to return to their homes in the city centre. In collaboration with national and international donor organizations, plots of land were therefore parcelled out in one section of Mulwene by city planners from the Maputo municipality and simple two-room cement houses built for the first group of flooding victims to have arrived in the area. Nelson was one of the fortunate few to receive one of the donated houses (*casas de apoio*) and, by the summer of 2001, he could finally move out of the reed hut that had served as an intermediary home for his family since leaving the resettlement camp in late 2000.

Since his arrival in Mulwene, Nelson has held several posts with the neighbourhood association, which was formally established as an administrative municipal unit only in 2002. For the last five years, he has been in charge of the neighbourhood's water system; the meagre salary in no way corresponds to the hours he spends maintaining pipes and collecting fees from residents. In order to increase the household income, Nelson's wife, Lígia, therefore soon started to sell children's clothing and an assortment of foodstuffs from a small stall in Mulwene's main square. Together with his cousin, who owned a grocery shop in the area, Nelson regularly drove to Nelspruit in South Africa to buy goods for Lígia while also looking for job opportunities. On one of those trips, Nelson came across an interesting booklet that he simply had to buy. The spiralbound A4 booklet was produced by 'Farol and Kenro Developers' – apparently a British construction company – and contained a number of colourful images and blueprints of elegant one-storey house designs (Figure 1). From the introductory text written by the company's principal architect, it appeared that the house designs were intended for 'modern middle-class citizens' prepared to mould their physical surroundings in accordance with their social and aesthetic needs



Figure 1. The house model that is the basis for Nelson's ongoing building project.

and desires. The actual house designs were surprisingly simple and did not give any indication of building materials, construction details or proportions of the exterior space. Each house model was presented using a graphic visualization of the façade and a layout of the ground plan scaled 1:100. The organization of rooms was straightforward. The smaller house models (58 m² and 61 m²) offered two bedrooms, a kitchen, a dining room and a separate bathroom and toilet. The larger models (101 m² and 109 m²) had an additional bedroom, a lounge, a combined bathroom and toilet, and a garage.



Figure 2. The current façade of Nelson's house. The remodelling of the house is based on the house design in the booklet displayed in Figure 1.

To Nelson, the images were perfect. Flicking through the pages, he could immediately envision the home that these house models would allow him to establish. 'Yeah, I immediately knew that I had to buy the book,' Nelson later admitted. 'Because the house that I saw in that book could be my house, you know . . . The house that I will build for my children.' Nelson was particularly fascinated by the 101 m² house model. 'Look at the room for having guests [*sala da visita*], Morten!' Nelson pointed at the lounge, which was designed as a separate section connected to the main house through an opening from the kitchen. The layout of the ground plan also displayed furniture, white goods and something that looked like a television. Nelson pointed at the image and smiled. 'There is even space for a small bar behind the sofas, I think.' It was never Nelson's intention to build an entirely new house based on the South African design. The house that had been donated to him and his family was a basic rectangular building with a slightly sloping zinc roof, which could easily serve as the material basis for developing the dream house that Nelson had found in the spiral-bound booklet. 'It's easy [*é simples*],' Nelson would tell me. 'I just add on to the structures in phases [*em fases*].' Several years ago, Nelson built a beautiful terrace of colourful broken tiles in front of the house; in order to 'add structures' to the house, he removed approximately half of the terrace and built the raised cement skeleton for what will someday become an addition to the kitchen and the living room (Figure 2). Resembling the colourful image, the front of the house on the street side now displays three small steps leading up to a front porch from where you will eventually enter through the living room (which is still without a façade). The original house is accessed through the main door in the middle of the added structure – or through the always open back door, which is what Nelson and his family usually do.

Pragmatic devolution of urban management

It might be argued that Mozambique is built on a foundation of failed ideological projects. In 1975, the country's first president, Samora Machel, declared independence for a new socialist African nation state. The former Portuguese regime had been struggling to protect its Mozambican territory against the advancing nationalist FRELIMO² movement, and, since its stronghold at home was rapidly weakening, a seemingly endless fight to maintain a sub-Saharan African colony was no longer considered an advantageous investment (Isaacman and Isaacman 1983). Shortly after independence, the now ruling and self-proclaimed Marxist-Leninist FRELIMO government nationalized housing in a deliberate attempt to undermine real estate speculation and thereby make a major advance towards a genuine socialist reproduction of society (Pinsky 1985). During the early and mid-1980s, serious droughts and a violent internal conflict gave rise to a humanitarian catastrophe, which forced the FRELIMO government to accept a series of economic structural adjustment programmes authored by the World Bank and International Monetary Fund. In order to receive much-needed financial support, Mozambique had to radically transform its macro-economic structures and the functioning of its state apparatus to align with the neoliberal agenda of the international lending institutions (Hanlon 1996). From the 1990s onwards, the FRELIMO government, through different administrative renditions, has consolidated this move from nationalist proto-socialism to neoliberal capitalist rule. Hence, as Castel-Branco has noted (2015: 27), the extensive privatization of state assets and wide scope for private accumulation have created a porous economic system in the country that protects the interests of a national capitalist class while '[t]he workforce is remunerated at below its social cost of subsistence'.

During Portuguese colonial rule, the '*cidade de caniço*' ('reed city', meaning informal) areas expanded gradually, even though the *Estado Novo* regime encouraged strict control of all construction developments (Grest 1995: 149). Segregation was not an explicitly formulated policy but it was maintained nevertheless by strict racist colonial practices that prevented African residents from acquiring property rights while providing only scarce services for residents living in fragile housing conditions in the informal settlements (Guedes 1971: 209; see also Rita Ferreira 1970). After independence, the lack of priority for the city's informal areas continued, with urban residents viewed as 'breeders of bad values' based on the ideological belief that 'the city is one of the centres of vice and corruption and of alienating foreign influence' (Henriksen 1978: 452). Even though the ideological rhetoric has since changed, urban management continues to be massively under-prioritized by the Mozambican government. In Maputo, several programmes have been launched since the early 1980s to upgrade existing residential areas and facilitate plot demarcation and the distribution of land use rights. Most notable was the Basic Urbanization Programme, initiated by Maputo municipality in 1980, which resulted in the planning and demarcation of some 10,400 residential plots (Melo and Jenkins 2021b). The programme was shut down in 1987 despite having proven to be a very effective way for low-income families to gain access to formally parcelled-out land.

² FRELIMO is the Frente de Libertação de Moçambique (Mozambican Liberation Front).

The combination of a weak administrative system and a massive increase in market-driven speculative investments, which are often supported by the political elite, has paved the way for new forms of urban developments that are targeting middle- and higher-income groups. Especially in neighbourhoods with improved infrastructure systems (such as road networks, electricity, water and sanitation), plots and larger areas have been parcelled out with the deliberate objective of developing segregated residential enclaves for the growing middle class (Jorge 2020; Sumich and Nielsen 2020). Some processes have been coordinated exclusively by state authorities, but, in most cases, the demarcation of plots and allocation of land use rights in the city's 'expansion zones' are orchestrated by a range of differently positioned actors, who assert their influence through financial transactions with local leaders or personal connections with influential members of the political elite (Nielsen 2022). Despite numerous failed and often ill-coordinated attempts to formalize the procedures involved in land regularization, access to land and housing in most neighbourhoods outside the inner city occurs through informal channels (Andersen *et al.* 2015). Under the auspices of the World Bank-funded PROMAPUTO programme, in 2013 the Maputo municipality embarked on an ambitious 'mass regularization process' in nine neighbourhoods. By 2016, 11,613 plots had been approved for titling; out of these, however, only 1,538 fees had been paid and as few as 249 titles transferred to the residents (Maputo Municipal Council 2016, cited in Melo and Jenkins 2021a: 88).

At the fourth party congress in 1983, the FRELIMO leadership promoted the need for 'decentralized building and building capacity' (Jenkins 1998). Given well-known administrative limitations in accommodating the growing demand for regularization and access to land, especially for low-income families, it was acknowledged that 'simple mechanisms to involve people in the solution of their own housing problems still had to be found'. At the fifth congress in 1989, the mandate to carry out land management was further decentralized through the promotion of assisted self-help house construction based on a 'need to promote civic engagement in the resolution of acute development problems (*ibid.*). With the realization that the necessary administrative resources required to build the physical architecture of a socialist nation state were not available, self-help housing was promoted as a way of maintaining a nationalist project through local residents' individual construction projects. The result of this gradual devolution of urban management is immediately apparent. From the 86,300 house units built between 1980 and 1997, it is estimated that some 4,000 were supplied by the state and 1,500 to 2,000 by the private sector. The remaining units (more than 80,000) have been supplied through auto-construction or assisted self-help schemes (Jenkins 2001: 637).

Knowing how to plan a construction project

Over time, as the formal provisioning of land and housing became more fragmented and lacking in overall coordination, the demarcation and allocation of land in many neighbourhoods came to be increasingly organized around basic layout plans (*plantas*): that is, simple topographical plans outlining a number of demarcated plots within a specific residential area (Carrilho *et al.* 2005). In the absence of formal authorities to administer the planning and distribution of land, a number of individual agents and organizations – community chiefs, real estate agents, entrepreneurial

newcomers, political entrepreneurs, foreign investors – take part in the often chaotic and tense development and implementation of basic layout plans. What might happen is that a group of entrepreneurial newcomers and real estate investors contract a local architect to design a layout plan for a section of an expansion zone or an already existing residential area. Without having acquired the formal authorization to use the layout plan as an administrative instrument, this group of collaborators commence a process of informal plot demarcation and the sale of land in cooperation with local leaders and former landowners, before eventually approaching the municipality in order to regularize the area (Chiodelli and Mazzolini 2019; Nielsen 2011).

Throughout the city's various neighbourhoods, urban planning is carried out from simple layout plans and graphic house models – blueprints – which, although aesthetically suggestive, contain the minimum amount of concrete information about the required building materials and details about construction design. Returning to Nelson's ongoing construction project, his initial decision to transform the house that he lived in with his family into what he described as his 'dream house' (*casa dos meus sonhos*) was based simply on finding the model design in the spiralbound booklet from South Africa to be beautiful (*bonito*). Nelson later admitted that he literally had no idea about how to carry out the building project, let alone whether it might ever be successfully concluded.³ In fact, quite a few of the Mulwene residents who are in the process of building houses based on simple layout plans and draft model designs claim that they have put very little thought into whether their projects are feasible or not. Justino lives in a small two-room house near the market place that also serves as the neighbourhood's bus terminal. He built the house himself more than a decade ago when he was working as a storeman in Matola, Maputo's twin city. Today, Justino is unemployed and lives off his wife's salary as a nurse while adding to the household income through occasional odd jobs as a bricklayer in the neighbourhood. In the late afternoons when the heat is bearable, Justino can often be found in the backyard (*quinta*) doing some light gardening or, more likely, chatting with visiting friends and neighbours. During a recent visit to Justino's house, he showed me a new blueprint of a house that he now plans to build. 'You want to see my house, Morten? It's amazing!' Justino ran into the house and came back with an A4 document in a transparent plastic folder. Justino's 'house' proved to be a sketchy drawing of the ground plan of a building made with a pencil (which is why Justino never took the document out of the plastic folder). The design indicated a five-room house with a kitchen, two connected living rooms and two bedrooms with separate bathrooms. Near the left margin of the document, someone had noted in handwriting that the house was intended for a 'nuclear family'. Justino explained that he had several blueprints (*plantas*) for houses that he wanted to build but that this was, truly, the perfect house. 'A friend of mine is building this house in [the neighbourhood of] Kongolote. I visited him one day and saw the design for the building project and I really liked it. So he made a copy, which he gave to me.' Justino grabbed the document from the table and waved it at me. 'This already exists, you know. It has a complete plan [*Já existe, sabes. Tem planta completa*]. It was an engineer who made it.' I asked Justino why he thought

³ On the relationship between time and house building in two African contexts, see Melly (2010) and Nielsen (2014).

that the house was beautiful. ‘Well . . . because I saw the entire plan [*planta toda*]. This plan has everything.’

Basic layout plans and blueprints suggest spatial arrangements for larger residential areas and house models without specifying the details required for their practical implementation. They are crucial not only for the construction of houses and the demarcation of plots but also for providing individual projects with a degree of permanency and legitimacy in the eyes of municipal and state authorities.⁴ Still, despite the importance that both residents and officials ascribe to layout plans and blueprints, their lack of detail is striking. After an extended visit to see Celso’s house construction project, he and I went for a beer at a nearby bar with Daniel, my neighbour and dear friend. I had been quite impressed by Celso’s building project, which was coming along at a much faster pace than he had initially anticipated. During the tour around the house, I had asked Celso about the construction plan, and, as we sat down around a wooden table in the small and noisy bar, he returned to my question.

Celso: You asked me who made the plan for the house and I said that I made it. And I think that you were surprised that ‘this guy knows how to do this’ [*você ficou admirado que esse gajo sabe fazer esse*]. But I don’t know how to make a plan. I just made a sketch [*esboço*], you know. It indicates the divisions . . . it indicates how I would like things to be. But that is not a real plan . . . A plan has to define the size of the cement blocks, the height of the foundation, all the calculations . . .

Daniel: (Interrupts) It’s a plan but it is not official.

Celso: Yeah, it’s not recognized by an engineer. An engineer from DMCU⁵ has to approve the plan . . . he has to sign it.

Daniel: And that is really expensive.

Morten: What is really expensive?

Daniel: The plan! The money you pay the bricklayer to build a house like Celso’s is nothing compared to what you pay an engineer to make a formal plan.

Municipal land surveyors and architects would emphatically confirm Celso’s and Daniel’s arguments about the importance of a plan or blueprint for the realization of a construction project. Gabriel was the municipal engineer responsible for formalizing land parcelling and house construction projects in Mulwene. I often accompanied him on his inspection rounds in the neighbourhood. Almost like clockwork, he would begin to grumble about residents’ flagrant lack of knowledge about the importance of construction plans.

⁴ For an interesting and deeply disturbing comparison, consider Fontein’s discussion of ‘Operation Murambasvina’ initiated by the Zimbabwean government in 2005 (2011). During this brutal campaign to ‘restore order’ by clearing many of the country’s poorest urban areas, individual cottages were spared if they ‘had a plan’ (*ibid.*: 370) – that is, if the owners could somehow document that the buildings had formal legitimacy.

⁵ The DMCU is the Municipal Department for Construction and Urbanization (Direcção Municipal de Construção e Urbanização).

The biggest problem is that people don't understand plans, Morten. They just want to use their own criteria. I ask them: 'Do you have a plan?' And if there is a plan, I tell them what is wrong with it. I say: 'You have a 20 x 40 m² plot but in your layout plan it says 15 x 30 m².' And then, when the person doesn't get it, he will say: 'But I just want to build this house because it is beautiful.'

In sum, layout plans, blueprints, models and simple graphic designs are foundational for imagining and carrying out land parcelling and house-building projects in Mulwene and many other residential areas in and around Maputo. It is through these planning devices that models for future land occupancies and houses are negotiated and come to take effect for residents and officials alike. Even in those instances where municipal and state officials discovered critical irregularities or that (mostly vaguely defined) construction criteria were not being followed, it was unlikely that ongoing construction projects would be anything other than momentarily delayed while the house builder and official found a viable and often monetary solution.⁶ As Tvedten has recently suggested, land and land ownership are at the heart of dominant discourses about urban life in Maputo 'in the sense of plots for building one's own house' (2018: 43). The house is primary; everything else is organized around it, including the legality of land occupancies, and projected and ongoing building projects.

Material flows through distributed urban models

In a recent study of urban planning practices in Maputo that crosscut formal and informal registers of material agency, Melo and Jenkins conclude that:

This 'bottom-up' form of appropriation through the implementation, disruption or copying of official planning processes has continued to promote a close morphological resemblance between various planned areas in Maputo metropolitan area, whether (officially) supplied by the government or (unofficially) self-planned areas. (Melo and Jenkins 2021a: 91)

To be sure, even though the large majority of residents living in Maputo do not have formal use rights to their land and very few construction projects have been approved by municipal or state authorities (Kihato *et al.* 2013), the aesthetics and building style of many residential areas outside the city centre indicate that the demarcation of plots and the design of individual houses have followed one consistent modular form. And, in a sense, they have. As I have described above, since the colonial era, the organization of most residential areas in Maputo has de facto been in the hands of the

⁶ Recently, two house-construction projects in one of the city's 'expansion zones' were stopped and the buildings demolished. According to municipal officials involved in the process, not only were the houses illegally built, but their extravagant architectural design and opulent ornamentation made it impossible for the authorities and local media to ignore them. 'Município de Maputo destrói quatro residências na zona de Mapulene, Bairro da Costa do Sol', *Televisão de Moçambique*, 5 March 2021. Available at <https://www.tvm.co.mz/index.php?option=com_k2&view=item&id=7687:municipio-de-maputo-destrói-quatro-residências-na-zona-de-mapulene-bairro-da-costa-do-sol&Itemid=277>, accessed 12 October 2021.

residents, while the city authorities have been responsible for ‘ad-hoc urban interventions’ to encourage and support ‘self-help house construction’ (Boucher *et al.* 1995: 12). The frantic rate at which investment-eager real estate speculators and international construction consortia are transforming the physical landscapes of the city has only intensified this tendency. Even though the entanglements of ill-coordinated spatial activities, procedures for planning interventions and economies of visibility and influence that continue to push the city forward do not by any means articulate a uniform master plan, the materiality of many housing areas in the city’s variegated urban landscapes nevertheless reflects a uniquely – but also oddly – regular aesthetic.

If urban development in Maputo’s residential areas can be said to be based on a modular form, it is one that defines the *protocols of interplay* of material things and not the regularity of their physical manifestation. Here, I follow Easterling, who considers protocols of interplay as indeterminate and often contradictory parameters for how things interact (2021). Rather than being driven by a managerial desire to identify and then rigorously stick to planning solutions, protocols of interplay curate the entanglement of always emergent events, things and ideas. In this regard, it makes little sense to look for a master plan or specific solutions, for ‘[n]othing works, and to worry that things might go wrong is to miss the point. Things will always go wrong’ (*ibid.*: 11). Protocols of interplay cannot easily be associated with specific names or locations and it is therefore difficult to determine whether they have caused systemic failures. Instead, they can be considered as a shaping of dispositions for working with the entanglement of things in ways that will enact recurrent changes in urban spaces.

Today, basic layout plans and distributed blueprints enact dispositions for the organization of the city that are deeply intertwined with its socio-political historicity without being an immediate effect or outcome. Out of necessity, the parameters of physical planning have been markedly opaque and always dependent on the ‘agencing’ (to quote the Introduction to this special issue, where the editors discuss Ingold’s re-thinking of agency (Fontein and Smith 2023)) of materially organizing the urban landscapes of the city. Since long before independence, the design of physical spaces and buildings has therefore been distributed across a range of critical nodal points, which have never been stable or easily determinable. So, whereas Nelson’s ‘dream house’ clearly activates imaginings and operational procedures that are entangled with the global circulation of urban models, they cannot be dissociated from those historical protocols of interplay that enact ‘self-help’ as a viable mode of establishing secure occupancy in the peripheries of Maputo.

In ‘Technical mentality’ (Simondon 2012), the French philosopher Gilbert Simondon suggests that technical objects may undergo a process of ‘concretization’ when they achieve a unified purpose that gives rise to functions exceeding those of the original intention. Through a process of concretization, then, the technical object acquires a form of independence from the external environment that produced it. It ‘tends towards internal coherence’ (Parisi 2017: 158) by gradually developing a mode of agency that allows for its elements to innovatively serve a plurality of objectives. In his insightful analysis of Simondon’s work on technology, Brian Massumi notes how the technical object ‘takes off’ from the initial schema of its inventor into a new



Figure 3. Nelson outlining in the sand the design idea for the rear of his house.

(a)



(b)



Figures 4a and 4b. Nelson's extension of his house at the rear (left) and his neighbour's imitation (right).

modality of existence, 'which is that of the technical object's relation to its own autonomy' (2009: 41). This 'autonomy' reflects the gradual coming together of a milieu around the technical object, which enables its concretization and expands its capacities beyond itself.

Without assuming that the plans and draft blueprints circulating across Maputo are equivalent to the technical objects discussed by Simondon, I do believe that we can take from his analysis the crucial insight that material objects and things

contain a capacity for exceeding their physical materializations.⁷ The urban models and blueprints that currently structure the organization of Maputo's variegated physical landscapes may begin at a centre – the image of a middle-class housing unit, for instance – but they extend outwards in various directions from this centre so that their material efficacy becomes distributed across a wide range of nodal points. It is here, we might say, that plans and blueprints come to operate as protocols of interplay for the organization of the city's physical landscapes.

I visited Nelson during a fieldwork trip to Maputo in November 2021 and we soon ended up discussing the status of his ongoing house-building project. The South African booklet did not describe the rear of the house model and so Nelson had recently made a design for this section himself. As I was reminded several times during our extended conversation, it had not been an easy task. 'I had no one to consult, you know. The model was all in my head,' Nelson said with a laugh before bending down to outline the house design in the sand in front of us (Figure 3). 'It was important for me that the house has aesthetics [*estética*].' I asked Nelson what aesthetics meant. 'Well . . . the house has to feel spacious. So, for example, you can't have a front door and a back door opposite each other. Then the living room will feel like a corridor. You have to make detours [*desvios*] when moving through the house.' Nelson therefore decided to have two separate but attached rooms and a toilet on the side of the house where the front door is while the back door and patio are on the other side, so that you make a 'detour' when moving through the kitchen.

Last year, Nelson's neighbour, Carlito, finally gathered enough money to rebuild his house, the size of which was no longer adequate for his family. All houses on the street are identical, donated houses, and after careful consideration Carlito decided to base his rebuilding project on the rear of Nelson's house (Figures 4a and 4b). Because of his limited financial capabilities, Carlito built only the two adjacent rooms and the toilet; the kitchen and the back door, which would open onto a small patio, which he also imagined as being part of the rebuilding project, would be added at a later stage. To Nelson, Carlito's imitation of his own house was quite poor. 'There are too many windows! You never put two windows in the same room. That's too excessive [*está exagerado*]! And the roof doesn't have the right balance.'

Carlito's imitation of Nelson's house design speaks to the dispersive power of urban models. In a very physical sense, it constitutes the rear of the 'middle-class' house design that Nelson found in the South African booklet. But it also reminds us how plans for the organization of the city circulate through different material articulations, ranging from globally transportable models for the making of sequestered urban welfare hubs and ideological scaffolds for entire cities to the simpler layout plans of districts and neighbourhoods and individual house sketches (*esboços*). What holds these different elements together is not the frictionless transmission of information; in fact, there is no all-encompassing system other than the heterogeneous and ill-coordinated transfers of plans and ideas between different

⁷ Taking their cue from Harvey and Know, in the Introduction to this special issue, the editors introduce the notion of 'excess' to capture how materialities and things contain potentialities that cannot be captured by descriptive strategies (Fontein and Smith 2023). My discussion of Simondonian technical objects follows a similar analytical pathway while emphasizing how material potentialities might give rise to a particular urban mesh that provisionally constitutes the becoming of the city.

hands, positions and bedroom drawers. But across this unstable domain of actions and events, we may detect a certain transductive ‘logic’ of eruption for the ‘emergence of objects, things, processes rather than a mode of generating conclusions’ (Grosz 2012: 43). This logic of eruption, which I have described here as protocols of interplay, allows plans and blueprints to move between different material forms and modalities without becoming fixed to any one of these. I argue that the materiality of Nelson’s house-building project is distributed across a heterogeneous domain of spaces, things and ideas. The building process may have picked up pace when Nelson found the booklet in Nelspruit, South Africa, but it is just as much a testament to the widespread ethics of auto-construction, which hinges on a historical (national) legacy of building the nation through residents’ ‘self-help projects’. It emerges from the immediate drawing in the sand of the rear of the house in the design model and it is reflected in Carlito’s questionable imitation of Nelson’s ‘dream house’. In this way, urban plans and models accommodate the coming together of heterogeneous forces, desires and ideas but they also delineate the structuring of that which surrounds them – the ‘domain’ (Simondon 2012) that is produced by their circulation and in which they take effect.

Conclusion

In the Introduction to this special issue (Fontein and Smith 2023), the editors make a timely call for a complication of the recent turn towards the ‘informal and ephemeral as defining features of African urbanism’. Driven by a hyper-alertness towards the intricacies of social life and an accompanying refusal to peg urban analyses to causal (systemic) inferences about conditioning contextual factors, this growing body of work on the vibrancy of urban life in African cities has allowed otherwise imperceptible expressions of everyday concerns, affects and orientations to be articulated with acute clarity. But since, as the editors remind us, ‘substances and materials, technologies and things’ are imbricated in the making of the dynamic and always changing urban milieu, the challenge is to figure out how the material operates and is operated on through the ‘agencing’ of the city.

In Maputo, the becoming of the urban occurs through the entanglement – agencing – of excessive human and material relations. Indeed, it would be difficult if not outright impossible to get house builders, architects, officials, real estate investors and neighbourhood administrators in Maputo to agree on the layout and design of any model for the city. At the same time, many urbanites throughout the city engage in the propagation of modular forms, which carry the seeds of transpositional efficiency and a remarkable consistency. For Nelson, a beautiful house (*casa bonita*) is one that connects him and his family to the world around them in a way that allows for new imageries to productively open up uncharted terrains without too many setbacks along the way. During our conversations, Nelson made it quite clear to me that he did not consider his house to be anything like the middle-class ‘dream houses’ in the booklet. But the middle-class imaginary was an apt vehicle for expanding his urban milieu beyond the physical confines of the building itself. A key feature of the urban materiality produced from the distributed house model was that it was never equal to any physical instantiations.

Again, the circulation of information does not involve a kind of modular repetition in which the same type of house is endlessly imitated throughout the city, as if orchestrated by a master architect. Rather, the consistency of urban modelling – what Simondon describes as ‘metastability’ (1992) – derives from a process in which activities auto-generate themselves and acquire a kind of autonomy in relation to their surroundings. I therefore venture to speculate that urban modelling is a productive operative modality for the city to stabilize itself materially. Is the materiality of Nelson’s house model imbricated only in the physicality of the building that he is currently reshaping? How about the drawing in the sand that suddenly made Nelson realize that he would probably have to rethink the slope of the roof towards the rear? Or Carlito’s half-baked imitation, which never ceases to annoy Nelson? Clearly, there are no easy responses to these questions. And, I argue, that is precisely the point. Here, we may again recall Grosz’s succinct description of the Simondonian idea of a transductive logic for the emergence of objects and things, ‘rather than a mode of generating conclusions’ (Grosz 2012: 43). Hence, in order for differently positioned agents to establish new configurations of the city, they capitalize on the ‘potential energy’ (Massumi 2002: 37) of urban modelling described above.

In this article, I have suggested that the organization of Maputo’s physical landscapes may be investigated through the protocols of interplay that curate a wide range of overt modelling practices. Throughout the city, models and blueprints, drafts and layout plans circulate without any overall coordination or in any systematic way. Large-scale gated communities are currently being planned and implemented through public–private contracts and financial agreements between state institutions and international construction consortia. At the same time, a small team of officials at the Maputo municipality try their best to steer a weak administrative system that is ill equipped to deal with growing investments in land and ongoing informal house-building projects – one of these being, of course, Nelson’s ‘dream house’, which is guided just as much by a one-page image of a ‘middle-class’ house that he bought in South Africa as it is by his own ideas of a spacious and ‘aesthetic’ architectural design. Circulating between and through these heterogeneous positions and places, the materiality of the city emerges as a resource or ‘potential energy’ that is never equal to the physical manifestation of the urban.

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