



Failed Fantasies in a South African Context: the Case of Modderfontein, Johannesburg

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Abstract

The (proposed) development of private sector-led, large-scale urban projects on the periphery of many African cities has drawn increased attention to the geographical breadth and potential consequences of the phenomena in recent years. This work demonstrates the speculative nature of many of these projects and their ‘world-class city’ aspirations, but also how such plans will exacerbate existing problems, including spatial inequality and environmental degradation. This paper, drawing on 50 interviews and extensive fieldwork, examines one such project in north-east Johannesburg, the Modderfontein New City. The paper responds to existing research and their calls for more grounded studies, and argues that given their distinct logics and developmental mechanisms, large-scale masterplanned edge cities can only truly be understood within the context of their place-specific urban landscapes, and that contrary to the prevailing arguments on this type of project, they do not always exist outside of ordinary governance structures. Supporting the (speculative) conclusions in earlier research, we demonstrate how the plans and early building looked to worsen spatial inequality and environmental problems. However, in highlighting how Modderfontein’s failure is partly the product of a strong local state unwilling to compromise on their own agenda in the face of elite-driven edge city developments, we argue such large scale projects in Johannesburg face hitherto under-researched disciplining processes that can disrupt or even derail projects.

Keywords Masterplan · Edge city · Urban governance · Planning · Johannesburg

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Introduction

Zendai Group's vision is to create unique landmarks and in so doing transform Modderfontein into an international cosmopolitan asset with cultural and art elements. (heartland.co.za)

In an interview in mid-2015, the South African head of development for Modderfontein, a nature reserve in the north east of Johannesburg, spoke enthusiastically about their plans for the site and their dreams of building an entirely new part of the city. The Modderfontein New City, which was to be built by a Chinese developer, was being pitched as the next big development in Johannesburg, somewhere for new Asian businesses to locate, which would challenge existing norms. Visibly excited about what the future held for both her and the development, the Director explained that what was planned for the area would transform the site, and in the future, Modderfontein would be where researchers would want to stay. In 2017, the site consisted of the same half-built roads, and the same—now quite dated—office buildings. There was demonstrably less excitement around the project expressed by both those working on it and the media. The development had not gone ahead as expected and the developer appeared to be stuck, unable to build the 'Manhattan of Africa' they had initially announced. Their hands were tied by a lack of planning permission, and they were suffering from a rapidly declining workforce as working capital slowly ran out.

Modderfontein is a 1600-ha site in north-east Johannesburg which was purchased in 2012 by Zendai, a Chinese developer based in Shanghai. Finance, insurance, and real estate (FIRE) sectors are growing in Johannesburg (Todes 2014) and consequently real estate itself is seeking to profit from this, catering to these sectoral needs and attempting to develop new areas which target tertiary industries rather than more historically relevant sectors. Modderfontein hoped to follow suit, building the 'Manhattan (or New York, depending on who you speak to) of Africa'. Led by Mr. Dai Zhikang, Zendai wanted to build a new piece of city with gleaming skyscrapers of high-end, luxury housing and offices catering to the service sector economy. Operating under the framework of a 'new urban district' (Zendai 2013) and enmeshed in narratives of smart/sustainable urbanisation, the project would consist of 55,000 housing units, 1,468,000 square meters of office space and all of the necessary amenities for urban life (Ballard et al. 2017). However, in the three years after acquisition, they achieved very little, unsuccessfully navigating the local political context (Brill 2018) and failing to get planning permission. In early 2014, the company sold their shares in the project to the China Orient Asset Management Company, who later moved it on to a different developer, based in neighbouring Pretoria, who has extensive experience building large residential areas and is expected to use the land to begin their residential development business in Johannesburg. Therefore, the reality of the development most likely to happen on the site stands in strong contrast with the fantasy images Zendai invoked. By tracing the development of the project in its early years, this paper questions what happens when African urban fantasies (Watson 2014) are unsuccessful?

Drawing on Watson's (2014) speculative paper that addressed edge city developments proposed across the African continent, we contend that an in-depth examination

of Modderfontein offers an interesting point of entry for understanding how these projects unfold. At this point in the development of real estate across the African continent (see Gotz and Todes 2014; Todes 2014; Goodfellow 2017), and especially in South Africa, understanding the logics, drivers, and prosaic actualities of how these large-scale projects occur has become essential. Existing research is suggestive of potential issues and highlights the breadth and geography of this style of planning, but there is relatively little in-depth engagement with the impact of these plans and projects (a notable exception is Murray's 2015 paper on Waterfall). In line with Watson (and later, an equally speculative paper by van Noorloos and Kloosterboer 2018), we find Modderfontein's masterplan would have significant impacts on spatial (in)equality and the environment. While still speculative, we draw on the specificities of both the masterplan itself and the means by which it was developed to address the actualities of the final plan and the strategies of the developer behind it. Understanding the project's five years of (attempted) development, on the periphery of Africa's financial capital and an important node in the global economic system (Harrison et al. 2014; Surborg 2011), challenges us to think about what it means when a project fails and takes a different direction in terms of wider socio-economic goals. Moreover, given the policy (and political) rhetoric around 'world-class city' making against which the project, itself emblematic of 'world class' aspirational masterplanning, was designed, this paper seeks to address how speculative practices and inter-referencing directly influenced the outcome of the project.

This paper begins with a synopsis of edge city developments in an African context, building on the broad overviews offered by Watson (2014) and van Noorloos and Kloosterboer (2018) to highlight the primary concerns of academics and policy-makers in such situations. It then addresses the specificities of problems in a Johannesburg context, setting the scene for our analysis. After introducing our site in "Case Introduction" section, we highlight our methods. We then address three of the biggest concerns which emerge in the context of Modderfontein: spatial segregation, the environment, and questions of justice and governance. Our analysis suggests Modderfontein had the potential to reaffirm existing patterns of inequality in Johannesburg and lead to environmental degradation; however, the strength of the local state (the City of Johannesburg) not only counters existing arguments about how large scale urban developments occur outside the realms of traditional governance, but is also suggestive of local authorities' ability to prevent these projects having such detrimental impacts.

Project-Based Development: Edge Cities in an African Context

Large-scale or edge city developments are a global phenomenon, and are of significant consequence for understanding issues of inequality in cities because they challenge existing governance—often operating outside planning in an extra-territorial manner or in a way where planning is privatised (Shatkin 2011; Murray 2015; Schindler and Kishore 2015; Swyngedouw et al. 2002). Moreover, in some places, such as India, they receive disproportionate amounts of investment (Shaw 2012), since they are part of

‘world class city dreams’ (Schindler and Kishore 2015), warranting further analysis of their consequences. However, while large scale developments, and specifically edge city developments, are being built throughout the world (Adama 2018; Ballard et al. 2017; Carmody and Owusu 2016; Das 2015; Grant 2015; Shatkin 2008), their development in African contexts has raised a particular set of questions about the consequences of such an elite-led approach to urban growth, especially in terms of equitable development and environmental impacts. There are two seminal papers which address, through broad overviews, the geography of this problem: Vanessa Watson’s 2014 paper on urban fantasies and more recently Femke van Noorloos and Marjan Kloosterboer’s 2018 paper on the contested future of Africa’s cities. Both papers set agendas for further research through the speculative nature of their conclusions and it is these calls for research which we hope to respond to here.

Watson’s speculative paper from 2014 drew attention to the proliferation of new edge city developments proposed across the African continent. Looking across five sites, she built on speculative urbanism (Goldman 2011) and symbolic capital (Acuto 2010) to question how these sites might impact the cities they are designed for. Highlighting that African cities are the ‘last frontier’ for global real estate capital, Watson shows how developers are deploying specific phrases to get buy-in from investors and encouraging the reproduction of a specific discourse about the new developments as a ‘fix’ for existing urban problems. For her, the contrast between the realities of the vast majority of the cities’ residents and the images and rhetoric invoked by, often foreign, investors and developers, is emblematic of the problems these developments would cause. The masterplans she analysed were each large scale, high-level aspirational plans that made reference to ‘successful’ or ‘world class’ cities such as Dubai and Singapore. They form part of the global cycle of ideas about urban form (Bok and Coe 2017) where international consultancies are increasingly part of an ‘expertocracy’ informing urban policy (Raco et al. 2016; Robin et al. 2017; Vogelpohl and Klemp 2018).

Both Watson and van Noorloos and Kloosterboer employ theories of world class city dreaming (Roy and Ong 2011) to explain the rationale for the marketing schemes of the projects, demonstrating the extent to which they are deployed as part of a ‘fix’ to African urban problems through the creation of enclaves and exclusivity. In this way, they can also be seen as a form of capsularisation (de Cauter 2004), where developers actively seek to build projects which facilitate elites moving away from the problems of the city. Carmody and Owusu (2016) characterise these enclaves as examples of ‘ex-urbanisation’, where the new city is built from a *tabula rasa*, free from crime, congestion and socio-economic tensions. These are sites where land is being commodified and privatised in such a way that the new cities often hope to exist outside existing democratic structures and within new, special, planning regulations. These types of neoliberal, elite-led urban forms can lead to what has been coined ‘splintering urbanism’ where assemblages are connected both symbolically and physically to global centres of accumulation, but delinked from their immediate surroundings. Capital can thus pool at sites of global production and consumption while devaluing the territories ‘in-between’ (Graham and Marvin 2001). Consequently, the new cities on the one hand challenge the expected organic nature of urban development and on the other maintain planning legacies largely shaped by colonial-era imperatives (Grant and Nijman 2004). This therefore provides new challenges for city management. Moreover, for many

African cities where there is a substantial disjuncture between ‘world class city’ aspirations and the realities of the majority of the population (Agbibo [2018](#); Parnell and Robinson [2006](#)), these projects reinforce the gap, reproducing extant institutional dynamics and geographies of exclusion.

While for both Watson ([2014](#)) and van Noorloos and Kloosterboer ([2018](#)), such characteristics are paradigmatic cases of a ‘weak’ African state facing external pressures from transnational capital, a case can be made that the impetus for new city developments actually comes from within the state apparatus and responds to widely-known developmental paradigms. Numerous African states experimented with the creation of new capitals in the early post-colonial period, with cities such as Gaborone, Abuja, Dodoma and Lilongwe designed to serve as both administrative centres free from colonial ties and ‘growth poles’ which would spur development in the hitherto ignored hinterlands. However, the cities largely failed to cope with extensive informal development or provide basic services, exacerbating existing patterns of marginalisation while burdening the state with large amounts of debt (Moser [2015](#); Abubakar and Doan [2017](#)). Despite the failure of the new capitals, notions of ‘modern’ enclaves persisted, with elites across the global south espousing entrepreneurial urbanism and ‘world class city’ developments, with the idea of turning their cities into ‘the next Shanghai’. However, such conceptualizations are typically characterised by a near total lack of understanding by elites, of the contextual or institutional differences between their cities and the desired urban visions (Weinstein and Ren [2009](#)).

Van Noorloos and Kloosterboer's ([2018](#)) research highlights the breadth of the new city phenomena in more recent times, developing on Watson to show how new city developments are happening—or are planned to happen—across Africa. Using a range of examples from across Africa, they create a typology to highlight what they consider the most pertinent issues for future research: displacement, segregation and justice. For them, this is a moment for critical engagement with the consequences of these projects which have become an exaggerated example of existing problems of socio-spatial inequality. Across the continent, people are being displaced from their land (Deboeck [2011](#)), enabled by top down projects which exist outside of standard regulatory mechanisms, and these populations and their homes are then replaced by consumption-based sites which van Noorloos and Kloosterboer liken to an extreme version of a gated community, something Johannesburg already has problems with (see Mosselson [2017](#)). The resulting enclaves of exclusive development not only remove existing (often marginalised) populations but also encourage elites to move out of other locations, disturbing the fiscal positions of city governments and stretching infrastructural spending budgets. This begins to put pressure on local governments on one hand, with a need to cater for new developments, and on the other devalues government, as planning systems are often ignored, and public accountability is reduced (see Murray [2015](#); Herbert and Murray [2015](#)). Furthermore, these sites, if left unaddressed in terms of public expenditure of (often expensive) public transport, make commuting difficult for marginalised segments of society (Cain [2014](#); Satterthwaite [2016](#)). This is especially pertinent in Johannesburg where the average individual's commute time is significantly above the national average (Geyer and Molayi [2018](#)), and is often worse for low income and black people, who were forced to settle on the urban periphery during apartheid. It's therefore important, when addressing questions of spatial inequality to acknowledge how any planned new cities will fit within existing (or create new) forms of public transport.

Beyond the suggestions of potential problems these projects might cause, van Noorloos and Kloosterboer (2018) also develop Watson's argument around such projects often being part of a desire for global capital to find new spatial fixes (Harvey 1985) in the context of recessions or decreased profit margins elsewhere. Moreover, these connections with global forces are evident in other dimensions of the project: inter-referencing and copy-cutting schemes designed in Latin America or Asia, representing a south-south learning moment. For van Noorloos and Kloosterboer, these references are self-evident, reflected in the models used by developers. In particular, their paper underscores the importance of Chinese actors in many of these projects. They highlight the importance of Chinese financiers and construction companies, noting Zendai's presence in Modderfontein, the impact of oil-backed loans on Angola's *novas centralidades* and how Egypt's \$20 billion new capital (to be erected next to Cairo) will be built jointly with Chinese multinationals including China State Construction Engineering Corporation (CSCEC) and China Fortune Land Development (CFLD). Chinese assistance and cooperation on these projects mirrors the country's geopolitical and geoeconomic imperatives, as Angola and South Africa are among China's closest allies on the continent, while Egypt is a key member of the Belt and Road initiative. In this way, the string of new developments can be considered part of the increased growth of 'Chinese spaces' in African cities (Dittgen 2017).

Finally, and most worryingly, van Noorloos and Kloosterboer suggest that in their reference to modernist visions, many of these projects deliberately choose to model themselves after Dubai, Singapore and China because of their semi-authoritarian governance structures which enable the developers to project a specific image of control. Challenging the narratives of the 'disorderly city' (Murray 2008), these projects become spaces outside governance where security and rules are more strictly enforced.

Given the breadth of geography of both Watson and van Noorloos and Kloosterboer's paper, there is a need to take up their calls for research agendas and address, with more specificity, some of the issues speculated. Cain (2014) responded to Watson's paper in the case of Luanda, echoing much of her narrative while also beginning to highlight some of the issues addressed in more depth in the van Noorloos and Kloosterboer paper, in particular around Chinese involvement. Moreover, his work returns to themes of inequality, highlighting the necessity of government intervention to maintain the financial success of the new developments in Luanda, which removes vital money away from meeting basic services for the majority of the urban population. Such grounded research again calls for further engagement on the topic of new city developments, especially around the financial viability of the sites and what happens when the developer is unsuccessful. Consequently, we draw from the work of both the broad paper and their highlighted future research agendas, and the more specific empirical work of Cain to question what happens when the development does not go ahead as planned? Furthermore, responding to Cain's questions around the need for state support in conversation with suggestions of a weak state elsewhere, we question how the state responds to the proposals, and the consequences for development, when contradictions arise between the stated goals of the project and existing urban policy.

Johannesburg has a long history of urban development through project-based schemes (Beall et al. 2002); however, in more recent times, this has manifested in a very distinct spatial form: the development of large-scale projects on the periphery (Herbert and Murray 2015; Ballard et al. 2017). The most successful and well known of

these projects is Waterfall, a large scale privately run almost-city which lies near Midrand in the Johannesburg-Pretoria growth corridor, an area known for being innovative in its urban governance and economic policy trajectories (Rogerson 2003). As Murray notes, this site represents a new turn in how urban development happens in the city and is poised to become “the most important business and residential growth point in the entire Midrand region” (Murray 2015: 505). Murray’s research on the site contextualises it against development elsewhere in the world, but in this case he historicises the account as well, explaining Waterfall as the most recent manifestation of instant masterplanned towns, beginning with Howard’s Garden City. As with the speculative fears outlined by Watson, Waterfall exists outside normal planning regulations, controlled by a single real estate developer as a “distinctive kind of extraterritorial enclave” (Murray 2015: 506) with unique approaches to governance. Murray’s paper highlights how, as an “exemplary form” of independent masterplanned cities, Waterfall is “immune” to oversight from City authorities (Murray 2015: 514). The full consequences of the development remained unanswered though, as Murray’s research was conducted while the site remained half-built with a relatively unclear path. Now, in our own research, Waterfall has taken on a new life within the imaginations of those in Johannesburg’s real estate industry as something worthy of aspiring to. It is against the backdrop of the ‘success’ (as defined by the real estate industry) of Waterfall that Modderfontein, as a rival and geographically close site, must be engaged.

Case Introduction

Johannesburg is Sub-Saharan Africa’s most important financial hub, and the command and control nexus for South Africa’s economy (Surborg 2011). With a metropolitan population of approximately 8 million people, it functions as a magnet for everything from domestic migrants and regional refugees, to transnational corporations and global capital. The city dominates South Africa’s urban hierarchy, accounting for 13.7% of national output, 55% of national office space and 74% of the country’s corporate HQs (Rogerson and Rogerson 2015). As an economic hub and financial centre, the city is the preferred choice of international investors seeking to expand operations to both South Africa and the southern African region as a whole (Rogerson 2009), something which was actively developed as part of a branding exercise to be a ‘World Class African City’ in the early 2000s (Robinson 2008; Gauteng official, June 2017). However, despite its growing economic primacy, the city has experienced substantial micro-spatial restructuring since the end of apartheid (Carmody and Owusu 2016). This has been characterised by capital flight from the old central business district (CBD) towards securitized suburban locations in the north (Sandton and Midrand), as well as by the construction of large-scale, private sector-led housing developments (though they are tied to the state via land acquisition and infrastructure/service requirements). Both processes tend to aggravate extant societal polarizations and marginalizations. As the Johannesburg Spatial Development Framework 2040 (SDF) states:

Post-apartheid housing delivery has arguably exacerbated apartheid spatial development patterns, by building housing in areas far from economic activity, with the availability of land being the primary logic behind their location. The

private sector, through car-oriented developments (for example malls, gated residential estates and office parks) has further aggravated spatial segregation (SDF 2014).

As Ballard et al. (2017) note, since 2014, there has been a significant shift in how South Africa addresses problems in the housing market. This has primarily taken the form of growing pressure to deliver public housing as megaprojects, or within Gauteng (Johannesburg's province) as new cities. The projects are meant to increase the quality of housing produced for low-income populations while concomitantly serving as catalysts for development in peripheral areas. Framed through discourses of inclusion, sustainability and accessibility, new developments fall in line with the SDF's vision of a "compact polycentric city," where the urban core is "linked by efficient public transport to dense, mixed use subcenters" (SDF 2014). Of utmost importance to this urban vision are the city's Bus Rapid Transit (BRT) system and the Gautrain, Johannesburg's light rail system. The Gautrain, though panned by critics upon its announcement for its focus on middle-class residents, (van der Westhuizen 2007; Thomas 2013), has had a profound impact on land values throughout the city and led to significant clustering around its hubs (Ballard et al. 2017; City official 2017).

Despite the official and discursive shifts, Johannesburg's housing delivery system remains essentially an extension of apartheid-era policies (City planner 2017). High-density townships feature little land use diversity and are disconnected from the broader economy, limiting opportunities, and forcing residents to rely on informal livelihood practices (Grant 2015). Downtown Johannesburg has undergone several revitalization and regeneration strategies (Winkler 2006, 2013), but structural impediments have limited their success despite the opportunities provided by its central location. Additionally, the mining belt remains a significant obstacle for integration and infill and has become a symbol of north-south segregation (SDF 2014). Against this backdrop of spatial inequality, there also exist spatial ecological disparities which the City seeks to address. As the Johannesburg Integrated Environmental Policy (JIEP) explains, environmental concerns in Johannesburg are directly linked to real estate concerns and the development of new cities on the periphery; "The City therefore is faced with enormous challenges such as development pressures emanating from urbanisation" (2005: 8). As Schäffler and Swilling (2013) note, for the City, an important strategy is to maintain and develop existing green infrastructures, such as the Modderfontein reserve. It is within this context of urban restructuring that we analyse the Modderfontein New City.

Modderfontein is a large site in the northeast of Johannesburg which has been relatively underdeveloped compared to neighbouring sites because it was home to South Africa's first dynamite factory, which supplied the gold mines of the Witwatersrand and only closed in the 1990s. The land eventually set aside for the project was owned by AECl, an explosives and specialist chemicals company, and managed by their property developing subsidiary, Heartland. Heartland began piecemeal development but was initially constrained by proximity to the explosives factory and the presence of the Modderfontein Reserve, a private 275-acre park. In 2011, Zendai, a Shanghai-based developer, began looking for overseas investment opportunities as they believed that property purchase restrictions put on developers by the Chinese government necessitated international expansion. By 2012, Zendai had purchased 1600 ha of AECl's 'surplus' land in Modderfontein with funds from Bank of China and announced

plans to build ‘the Manhattan of Africa’ through a fan-fared media release (Ballard et al. 2017; Brill 2018; Zendai 2017).

As a development organisation, Zendai had little experience with this size of project; in Shanghai, they had been involved in significantly smaller schemes including ‘Thumb Plaza’ and ‘The Himalayas Center’ (Zendai 2013; Dittgen 2017). To address this relative lack of experience, Zendai kept the existing Heartland team and hired a number of international consultancies to draw up a comprehensive masterplan for the area (Brill 2018), as is typical of large scale developments aimed at international audiences (Watson 2014). Indeed, Zendai’s original plans called for a megadevelopment which would serve as not only the base for its own expansion into the continent, but also “become a hub for Chinese firms investing in Sub-Saharan Africa” (Dai quoted in SCMP 2014). As part of this process, the consultancies did what they considered a holistic analysis of the site and potential options, ran stakeholder meetings across the summer of 2014 and worked directly with the local planning authority, the City of Johannesburg, to develop a scheme appropriate for the site. The masterplan submitted for planning permission in 2015 was for a mixed-use site, largely focused on transit-orientated development around a new Gautrain station and as a centre for ‘advanced’ industries (see typology by van Noorloss and Kloosterboer 2018). The site is therefore a good example of a masterplanned edge city, which developers hoped would spatially fix footloose global capital (Harvey 1985). In line with the characteristics identified in existing literature, Modderfontein was defined by futuristic visions associated with ‘world-city’ images; autonomy over governance; a masterplan produced as a visioning exercise dominated by high-level analysis rather than concrete, street-level plans; and largely driven by the private sector (Watson 2014).

Methods

The analysis presented in this paper is based on 50 interviews conducted with those working on the site between June 2015 and April 2018. These interviews were with senior members of the developer team, town planners from within the developer, external consultants, former architects who worked on the site, the environmental team, the local planning authority and the wider engineering team. These interviews were then coded to reflect the dimensions identified in earlier literature: the environment, governance and social justice. During this time, the developer, Zendai, was attempting to get planning permission and therefore this analysis centers on the masterplanning process as well as the expected outcomes. During the course of the interviews, there were a number of changes to Modderfontein, at the start of the process the site was set to be a destination for Chinese business and was being run by the perceived ‘visionary’ from Zendai: Mr. Dai; by the end of the process, Mr. Dai’s finances had forced him to sell the site and it was then sold on to a local developer with experience in Pretoria and links to Taiwan. At the same time, as these changes to the ownership and consequentially the organisational structure, there were changes in the institutional layout of Johannesburg with a new Mayor for the City, and therefore new objectives. These changes were therefore considered in who was interviewed. The answers to interviews were juxtaposed with media releases by Zendai, interim reports and the masterplan itself, to demonstrate the contradictions and realities of developing an urban fantasy in this context.

Negotiating the City's Desires: Spatial Segregation and Creating the Next Sandton

Since the end of apartheid, the City of Johannesburg has sought to correct its historical spatial failures (Todes 2012; Todes 2014) through infill in the city centre, brownfield development and attempted regeneration. Much of this has been done through a “precinct and project logic” (Beall et al. 2002: 110) where the City and its quasi-governmental bodies such as the Johannesburg Development Agency (JDA) have encouraged development through incentive schemes around transport nodes. At the same time, this ‘building by projects’ has dominated the other end of the property market too, with elite enclaves where spaces of luxury protect the city’s upper classes and create enclaves of exclusivity (Lees 2004). In this way, the everyday practices of many urbanites in Johannesburg embody the logic of capsularisation as well as Ma and Wu’s (2005) concept of differentiated city spaces, where some spaces of the city are divided into those of globalisation and elitist consumption (globally-oriented parks/buildings, shopping malls, supermarkets) and hidden away due to fear, (de Caeter 2004; for more on neighbourhood specifics of fear in Johannesburg see Bremner 2000; Hook and Vrdoljak 2002), while others are of marginalisation and informality. In the Johannesburg context, the proximity and interdependency of these sites can lead to friction and contestation, resulting in further securitization and differentiation.

These urban practices are then translated to the real estate market and manifest as a geographically fractured pattern of development. The interdependency of the real estate market, where price is almost entirely based on the relationship between one site and another (Murray 2008) as real estate is an inherently relational market, ensures that project successes in some locations have occurred at the expense of developing others. Consequently, the city remains a relatively spatially divided region where the JDA is left with the unenviable task of directing development in line with the City of Johannesburg’s planning policies.

The city’s growth engine is arguably Sandton (Herbert and Murray 2015), an area of high-rise buildings to the north of the CBD which forms the financial centre of the region, plays a key role in the command and control of South African and transnational capital throughout Southern Africa, and exists as one of the northern suburbs with high standards of living (Beavon 2004; Dirsuweit and Wafer 2006). Given its prominence in terms of attracting international headquarters and therefore its position as an important node in the multi-scalar global economy (Pieterse 2008), Sandton has become a place worthy of aspiring to for many new locations across the city (Herbert and Murray 2015). At the same time, Sandton is plagued with problems: congestion, broken traffic lights and difficulties with parking; such a combination of situations has made Sandton a prime point for inter-referencing. As with the new cities which preceded it, Modderfontein hoped to be ‘the new Sandton’ (as with Waterfall, see Murray 2015); though it is important to note that this ambition was met with criticism from certain City officials, as inner-city Johannesburg has an office vacancy rate of 16.6%, and the decentralised office nodes of the city have rates of approximately 10% (Carmody and Owusu 2016). As one Heartland executive noted: “Sandton was born from the ashes of downtown Johannesburg, they didn’t want Modderfontein to bring about the end of Sandton” (Zendai employee, February 2018).

Zendai had clear aspirations of building a high-end, luxury, mixed-use development which would cater to the elite of Johannesburg in much the same way as its neighbour, Waterfall. Their vision was considered futuristic and early marketing releases were received with very mixed results by the public (Zendai director, May 2015): the overtly utopian images dispersed to South African media outlets by the developer's Chinese consultants did not fit with current understandings of city visioning in Johannesburg. However, their dreams of building a new piece of city were mostly stifled by their inability to comprehend how City officials felt about social and spatial justice, and their reluctance to adjust plans accordingly.

In strong contrast with the aims of Zendai and their rhetoric, the City wanted the developer to build a more inclusive site which reflects the realities of the housing market in Johannesburg. Consequently, the City demanded the developer include 5000 affordable homes in their plans and ensure the development complemented existing public transport, so individuals would be able to access work in other parts of the City (Cain 2014; Murray 2015). These stipulations would help the project fit in with the SDF's 'inclusionary housing' regulations, and the City were even willing to financially support this to ensure the project was developed in line with their equality goals, as a transport engineer explained:

...so the City was obviously going to contribute financially to some of this as well. Not just the infrastructure but they had a whole model around the more inclusive housing - they have different ways people would purchase the property and some of it might have just been effectively given to people. There would be different tiers of assistance from the City (Engineer, May 2017)

However, those working at Zendai felt very strongly about their plans, so despite the insistence from the City, Zendai was exceptionally reluctant to engage with the issue of affordable homes, even if it was significantly delaying their planning permission application. As one of the planners from Zendai stated: "So Council wanted us to include social housing as a portion of the bigger development, which as a developer I have issue with" (Zendai Town Planner, June 2017). While the City and Zendai "had the social housing discussion quite frequently and quite lengthily" (ibid.), there was very little negotiation that took place, since Zendai were clear about their position—they wanted to make luxury housing, and this was known by all those working on the project (Engineer, May 2017).

This insistence partly came down to ignorance about the market on the part of the developer (Brill 2018). As one of the engineers working on the site explained: "you know you people are just completely detached from reality and how little money people earn" (Engineer, May 2017), especially when they come from cities where things are built differently (Brill 2018). Yet the reluctance to incorporate the City's demands also reflects how the strategy of the developer was relatively fixed, dictated by both a desire to maximise profits (Engineer, June 2017), and to build in line with the vision Mr. Dai announced on acquisition.

Failure to address the social housing issue meant the developer was not granted planning permission for over two years, while the City deliberated over what might be done to constrain the efforts to build an entirely new piece of city. Ultimately, Zendai (for various financial reasons) sold the site on to China Orient Asset Management

Corporation, an institution which mainly manages non-performing assets. In turn, they eventually sold the site to a new developer, one who has extensive experience in Pretoria but little in Johannesburg. However, this developer's reputation precedes them; unlike Zendai who were relatively unknown when they announced their acquisition, the new owner, M&T, is known for relatively low quality, monotonous town house developments. Consequently, despite not engaging with the project for two years, the City put the plan to planning council in June 2017 to ensure that at the very least some ideas about social justice would be guaranteed and the new owner would be held to some account (City official, June 2017).

Environmental Concerns

As identified by Watson (2014), one of the biggest potential problems with large-scale developments is their environmental consequences. This is particularly pertinent in Modderfontein because it has a (relatively opaque) history of being a contaminated site given its proximity to the explosives factory.

Modderfontein is a huge site and one of the largest sections is the nature reserve, home to a number of species, including a dazzle of zebras. The nature reserve is not just a site for preserving flora and fauna though, it is used by locals for weekly Park Runs (an organised mass participation event held every Saturday globally), cycling, and for nature trails; it is therefore an important local resource (Schäffler and Swilling 2013). The original developers Heartland, and later Zendai, took this environmental dimension of their plan very seriously: they had a number of in-house employees who worked exclusively on environmental issues, they hired environmental specialists, and they had employees out in the field constantly working to clean the water. This was all done at a very local level and led by the original employees from Heartland: "there wasn't an environmental specialist from China that was part of what we were doing" (Zendai environmental team, May 2017); which is perhaps suggestive of how the Chinese component of Zendai viewed this dimension of the process.

Despite this very real attempt to engage with how the development might impact the ecological value of the site, as the masterplanning process progressed, the environmental dimension became increasingly centered on current major themes in real estate (i.e. the smart and eco-city narratives found in the vast majority of recently masterplanned new developments). The final product of Zendai's work, the masterplan submitted for the planning application, has an extensive section about the environment, yet there's relatively little deep engagement with the actual issues at hand or a direct address of the potential negative effects of the project. Rather, the plan highlights how issues will be 'minimised', though this was to be expected as there was very little budget for in-depth environmental assessment within the masterplanning process (Environmental Consultant, June 2017). Instead, the document was largely high-level (Watson 2014) and this was further exacerbated by the nature of many working on it (Brill 2018). For those who are normally based in the UK, the processes around the environment are heavily standardised, and they brought with them ideas formed during UK projects with little re-contextualising (ibid.); for them, the environmental issue was more about reducing the impact through design changes: "And all the normal sustainability strategies work better [...] with density as well" (Engineer, April 2017). However, this poses problems

in its own right, as the density was a reflection of his UK-based standards and did not fit with the expectations (albeit relatively mismatched ones (Murray 2008)) of Johannesburg planners.

The environmental question was rather sidelined in the end, despite initial promising actions by early developers. As with existing research on large scale projects, 'the environment' is primarily invoked in the plan as part of a particular discourse to attract investors and occupiers based on a perceived value in being classified as eco- or smart. As Watson (2015) notes, such terms often form part of the entrepreneurial urbanism model, in which ambiguity is operationalised as a way to make critiques of the project more difficult. In the case of Modderfontein, the overarching rhetoric was that of 'integrated development' reflecting the concerns of the City only on a superficial level. The project promised:

Integrated planning, rational layout, systematic construction, optimised allocation of various commercial and living functions and an integrated development environment are all aimed at making Modderfontein a multi-functional city (Zendai 2015).

Yet as we have noted, the rhetoric did not match either the design or the desires of the developers, further suggesting superficiality and attesting to Rapoport's (2014) characterisation of 'urban fantasy' consultants as producing a 'standard menu' of graphics and ideas, regardless of place or context. She notes that these 'menus' need to represent certain visions of modernity (or development in the African context) to attract unwitting politicians or investors, and that the terms 'eco', 'sustainable' or 'smart' are generally nothing but marketing ploys (Watson 2015). This was exacerbated in this case as the developer came under huge financial strain and despite promises for large investments, had to make financial trade-offs, deciding to spend very little on environmental issues.

Governance and State Control

Modderfontein has traditionally existed outside of the regular constraints of the City. Initially governed by the explosives company as an almost private settlement, the last decade has been a constant battle between the authorities and the owners to get a strategic masterplan developed (City planner, June 2017). However, the degree of autonomy associated with large-scale private sector-led developments throughout the literature is not as evident here, where both the environmental concerns and inequality questions revealed the strength of the local state and its ability to resist pressure from transnational groups. In doing so, the example of Modderfontein challenges narratives around weak local states and shows the power they can have when given the ability to enforce existing regulatory regimes.

When Zendai started the masterplanning process, one of their first actions was to hire an extensive team of consultants, mainly based in London. These consultants had largely formed their strategies based on previous projects, especially those within the rest of the African continent, indeed one of the leads from London had previously worked on a similar new city design in West Africa. For these individuals, there was an

expectation that the developer would take a strong lead on this project (Watson 2014), as one of the financial consultants from London elaborated:

They [the developer] fit the constraints [of City policies] which are very significant, but when it comes down to it - its the developer who works up a scheme and goes forward with it really (Financial Consultant, April 2017)

This was also true of the developer since most of the Chinese workers only had experience working in China and consequently “Generally they [Zendai] probably recognise they’re used to having more control over projects” (Engineer, April 2017). Furthermore, this expectation held true locally too—“If you look at the history of it [Modderfontein] - obviously they have their own team and their own way of running things” (Zendai environmental team, May 2017).

However, as is suggestive through the specific example of social housing, the City of Johannesburg were strong in their stance against some dimensions of the Zendai vision which they considered counterproductive to wider city goals. For them, the discussions with Zendai were particularly challenging because the City also came in with clear expectations of how development occurs: “it’s [conversations] how we normally start these processes - we’re all very aspirational and go ‘yes we will get to the same page’... But I think from the city’s side we were all ‘yes again we have to work with you and we will’, but it was clear it was a very manufactured process to get us to a very particular outcome” (City planner, June 2017). They anticipated that the utopian visions outlined by Zendai would eventually be tamed and put more in line with the rest of the city, but this did not happen to the extent they expected. Instead the City felt patronised (Brill 2018) and rather than beginning a dialogue, the actions and leadership of Zendai resulted in a stalemate.

Contrary to both Watson’s ideas and the City’s experience with projects in other parts of Johannesburg (see Murray 2015), in Modderfontein, the City was unwilling to give the project special status and allow it to operate outside existing policies. This was evident, for example, in one of the City’s main concerns—the development’s lack of integration into existing transport systems. While Modderfontein was to be connected to the city via a new Gautrain station, it was not integrated into BRT and had few infrastructural or service connections with the existing city; severely limiting transit opportunities for the majority of Johannesburg’s population as Gautrain’s ridership is mostly composed of middle class residents. Gautrain CEO Jack van der Merwe once famously said “Our focus is on the car user ... if you have enough money for a car, you have enough money for the Gautrain” (van Der Westhuizen 2007). Additionally, there was no policy support for a development of the magnitude Zendai desired within the northeast of the city (Ballard et al. 2017). Given this, the City pushed back and forced a dialogue around buses and other forms of low-income transport.

Time and again, interviewees referred to the necessity of the developer working within the constraints of what the City is trying to achieve. Watson notes that in her cases “the private sector (with bases in, or links to, economically stronger regions of the world) has become a dominant player in nearly all of these projects” (Watson 2014: 22). In Modderfontein, this is undoubtedly true, since both state and private sector actors considered the private sector to be dominant; yet the city’s autonomy was not fully undermined, and in many respects, it was their negotiating strength, for example

in terms of insisting on affordable homes, which stretched the developer beyond their financial means. Even those interviewees critical of the City noted that “I think Modderfontein was different because it was such a high-profile project, so it attracted very close scrutiny” (Architect, June 2017). This strongly contrasts with existing narratives on how new cities or large masterplanned areas exist outside the control of planning authorities or regular structures and are often self-governing or regulating.

However, this is not to say that the City is always strong or capable of challenging developers. Examples from elsewhere in Johannesburg highlight that this is not always the case (see Murray 2015; Herbert and Murray 2015), and furthermore we do not seek to show the City is anti-development. Rather, the Modderfontein case is suggestive of the potential capacities of an African state when the developer is unable to navigate the necessary political relationships. It also shows the potential strength of African institutional settings and challenges narratives around their weakness. The city of Johannesburg was able to keep the project within the existing planning system as well as ensure public participation. Additionally, it was able to avoid what Datta (cited in Watson 2015) terms the ‘rhetoric of urgency’ in which plans of this magnitude are fast-tracked and bypass regulations (social, environmental or technical) that may slow down the construction process. The strength of policy and planning instruments has been demonstrated elsewhere in the world and this example reaffirms this in a new context, highlighting the importance of understanding institutional strength in situation over the course of a project, to truly understand how governance shapes the private sector.

Finally, it is also important to note that governmental responses to Modderfontein were not monolithic. In fact, Gauteng’s provincial government backed the project and Mr. Dai held a well-publicised meeting with the premier of Gauteng province, Nomvula Mokonyane, to negotiate permissions and building rights. David Makhura, Mokonyane’s successor, spoke highly of the project and incorporated it into the province’s ‘new towns and cities’ policy (Ballard et al. 2017). The province had previously authorised the construction of Steyn City and Waterfall under the Development Facilitation Act of 1995 and has a record of favouring large-scale greenfield sites for a variety of reasons. However, the DFA was repealed in 2013, putting the Modderfontein site under the city’s authority.

Conclusion

Zendai’s vision for Modderfontein is unlikely to be fully realised; however, their masterplan will undoubtedly shape what is developed on the site. In 2017, the site was sold to a new developer, MT, known for relatively low quality, low-density residential developments (Civil Engineer, May 2017). As a consequence, the City finally put the original Zendai masterplan from 2015 to planning council for approval, in a last-minute attempt to ensure the new developers met at least some social goals. As outlined here, Zendai’s plans largely failed to address both the social equity and environmental concerns of the City and are likely to worsen both, if the development exactly reflects the plan. However, the strength of the City in the face of the masterplanning exercise suggests they are capable of forcing developers’ hands, so the flexibility inherent to high-level masterplans (Watson 2014) such as Zendai’s offers potential not just for the developer to manipulate the future of the project, but for the City to continue to heavily influence how development unfolds.

The failure of Zendai's Modderfontein project is the result of a complex series of contradictions, negotiations and breakdowns which cannot be summarised simply. What is clear, and what we wanted to focus on here, is that the state/corporate dynamics which shaped the implementation and design process were never fully resolved. Indeed, as one executive suggested: "the vision wasn't compatible with the circumstances" (Heartland executive, 2018). The original visions for the project were undoubtedly unsuitable for the South African context if implemented as the marketing suggested, for a variety of reasons (including expertise, rate of sale and factors relating to social exclusion) (Brill 2018), but we need to look beyond this to understand the dynamics at the heart of the process. While visionary and emblematic of utopian ideas, the implementation and even attempts to get a plan in the first place demonstrate the incremental processes at the heart of development, which suggest a more nuanced understanding of how these developments go ahead and necessarily opens up a more effective dialogue to make them more democratic and addressing their potential flaws. The processes and impacts, as Watson (2014) notes, are at times 'complex and contradictory' but in unpacking them, it's possible to understand how they are produced and the means by which future development can be better controlled.

This paper responded to previous calls for research and examined both the prosaic realities of the project's development and its place within Johannesburg's urban form. It contributes to literature on African urbanism and urban development projects to empirically demonstrate some of the fears suggested in earlier work on African edge cities. Despite the project's collapse, this examination illuminates the diversity of realities which exist in an urban African context and the necessity of engaging with these processes on the ground. From this analysis, we can further understand the agency of African states in responding to the challenges posed by transnational capital, and how governmental institutions can discipline that capital in order to achieve, or simply not disrupt, their own developmental goals. Specifically, the example of Modderfontein speaks to two ways such projects can be challenged beyond this one case—firstly, a strong negotiating position on the part of a state, demonstrating a clear social justice agenda, enables it to push back against the developer. Secondly the state's agenda must be supported by a legislative and regulatory environment which enables its implementation in the face of discourses of urgency and attempts at fast-tracking (Watson 2015). Modderfontein shows, especially in contrast to the successful development of neighbouring Waterfall, that this latter point is of vital importance, as it was the regulatory changes that took effect after Waterfall's approval which re-asserted the City's authority and enabled them to challenge the perceived strength of an international developer.

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Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

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