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Amira Osman · John Nagle ·
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The Urban Ecologies of Divided Cities

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Amira Osman • John Nagle •
Sabyasachi Tripathi
Editors

The Urban Ecologies of Divided Cities

Editors
Amira Osman
Department of Architecture
Tshwane University of Technology
Pretoria, South Africa

John Nagle
School of Social Sciences
Education and Social Work
Queen's University Belfast
Belfast, UK

Sabyasachi Tripathi
Department of Economics
Adamas University
Kolkata, India

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Introduction

Amira Osman, John Nagle, and Sabyasachi Tripathi

A city exists in collections of social structures which mutually form a society.
A divided city implies divided social structures and, in consequence, a divided society.
A divided society is a cause/ effect of divided cities through legislative political systems of division.

THE CITY IS [NOT] A TREE: THE URBAN ECOLOGIES OF DIVIDED CITIES is an international collaboration, with associates principally from Europe and Africa, and collaborators from other parts of the world. While the team that put this together is constituted of Amira Osman (South Africa), Ciaran Mackel (Ireland), Alona Martinez Perez (Spain/UK), Tariq Toffa (South Africa), Denise Morado (Brazil), Carla Schmidt (South Africa), it is important to note that the initial idea for the title was from Ciaran Mackel and the title and themes were developed by Tariq Toffa. The whole project is conceptualised and funded under the asupices of the South African Chair in Spatial Transformation. We issued our call expressing an interest in analyses, remedies and healing in divided cities and societies. Although these often relate to specificities of history, context, place and population, they nonetheless speak to a universal condition, with many commonalities in both cause and effect.

The title of this collaboration, being a wordplay on Christopher Alexander's 1965 essay title *A City is Not a Tree*, uses the inference of a city being a tree in a different milieu. Whereas Alexander's focus in terms of the analogy was to describe the physical composition of a city being either the mathematical structure of a tree or that of a semi-lattice, in this instance it refers to the city as a socio-spatial ecosystem.

The question of divided cities represents a complex and multi-stranded urban ecology—at once social and spatial; it cannot be limited to a single science or discipline. This suggests integrated and cross-disciplinary understandings, as well integrated or parallel approaches and solutions.

Urban ecologies of division manifest in multiple forms. One of their most palpable expressions is conflict, with parallels around the world, and often with correlations in the spatial fabric. Violence in such contexts is often a surface expression of deeper socio-economic or ideological differences. Whether as result of intervention by authority or by dissent between groups, a divided city inevitably becomes a place of conflict in various forms and intensity, eroding the joy of living and sense of collective belonging to the detriment of all. In effect, it erodes the collective advantage of being part of a more unified society. In tandem with conflict as a surface expression of such ecologies are the social undercurrents, such as the making of the 'other', the unfamiliar and the unknown, where whole swathes of cities and towns could remain 'other' for many citizens—a *terra nullius*—even for long-term residents.

1 Common Threads and Systemic Currents

With division being a near-universal condition, what kinds of common threads are discernible in various localities across the globe, each with their own distinctive histories and trajectories? One of the most discernible, common characteristics of ecologies of division is their very physicality—cities and territories divided and marked by edges, borders and buffers, where conurbations gather or are dominated by different inhabitants. The interfaces between these are often evidence to the spatial concentration of political violence between stratified groups and geographies.

A. Osman (✉)
Department of Architecture, Tshwane University of Technology, Pretoria, South Africa
e-mail: osmanaos@tut.ac.za

J. Nagle
School of Social Science, Education and Social Work, Queen's University, Belfast, UK
e-mail: john.nagle@qub.ac.uk

S. Tripathi
Department of Economics, Adamas University, Kolkata, India
e-mail: sabya.tripathi@gmail.com

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Space remains a central factor in the nature of a society and the quality of life.

Spatial injustice can also be a marker for many other issues that affect the quality of life in divided cities. Civil rights and questions of equality, for example, are another important sphere of factors within urban ecologies and urban experiences that holds common across many cities and geographies (of which housing is an important aspect). The connection of civil rights and housing in divided cities is well known and intrinsically connected. For example, in Ireland, the Derry demonstrations for better housing for the minority Catholic population in the 1960s, resulted in the conflict known as *The Troubles* and it perpetuated an urban morphology of division due to faith and culture. In South Africa, the Population Registration Act of 1950 required that each inhabitant of South Africa be classified and registered in accordance with their racial characteristics as part of the system of Apartheid, resulting in spatial and urban segregation according to race, a condition that is still evident 27 years into democracy. Both of these conditions are also a result of colonial powers such as the Dutch or the British and, even though they are country-specific, they speak of divisive conditions which manifest globally in different contexts.

Although representing some of the most discernible characteristics within urban ecologies of divided cities, spatialities of division and concepts of rights are often emergent out of, or entangled within, deeper and broader systemic issues, taking form in their specific histories, politics, nuances and locations. Some of these larger, systemic contexts are mentioned below.

1.1 Socio-Economic Structures

The modern structural economic realities of neoliberal capitalist urbanisation are ever-present and prevalent in the urban condition, with cities divided by capital, in processes of gentrification, or social and economic division, displacement of the poor, and the form and shape of a disjointed urban imprint, including the policy positions that can often sustain them. These are often further sustained by narrow economic, sectional commercial interests or attracting large-scale investment, often to the detriment of equity and the spatial and social cohesion of cities and neighbourhoods.

1.2 Social Categorisations, Conditions and Intersections

Divisive spatialities are typically underpinned with notions of belonging, othering, policing and fear, whether in cities divided by ethno-religious or politico-religious groupings such as Belfast, Nicosia, and Jerusalem, or by systemic racial economic inequalities such as the 'post'-apartheid South African landscape. All are further marked by conflict and violence of various kinds, and typified by urban assembles of walls and other divisive urban artefacts.

The intersections between social categories, such as those between race, ethnicity, poverty and space, have been highlighted in recent years through protest movements in many parts of the world, such as 'Black Lives Matter' and 'Rhodes Must Fall'. These protests drew attention not only to the kinds of painful social experience that undermine a basic humanity, but also challenged multiple and interrelated structures of domination and discrimination, as both historical legacies and structural realities. This 'intersectional' agenda would become not only a hallmark of such protests, but would also come to characterise the resurgent value of 'decolonisation' as a critique and intervention strategy, namely its ability to show how dominance and marginalisation correlate across various spaces and levels. Thus, dominance at a geo-political level can also be evident at the level of everyday practices as well as in deep-rooted beliefs and cultural norms, raising interrelated political, economic and epistemic questions.

Further unforeseen intersections and coalescences were magnified worldwide by the COVID-19 pandemic, which clarified—if not accelerated—existing divisive and unequal systemic structures. In the United States for example, Black, Hispanic, and those from lower socio-economic status, were more likely to die of COVID-19. Similar trends in the racial and socio-economic linked nature of deaths or high vulnerability were also observed elsewhere, such as Europe and South Africa. The populations at risk therefore include those exposed to increased health and social vulnerability, namely those who are poor or who live in deprived conditions which impact on health and sanitation, who live in crowded areas or informal settlements (i.e. slums) which impacts on social distancing, and who live in multi-generational households and large extended families in a single dwelling. Hence, heightened vulnerability is not only entangled with existing systemic issues, but also with the emergence of a strong divisive spatial element in the areas most affected.

In the interactions between patterns of viral transmission and other health inequalities with class, race, gender, and other axes of power, there are indications that the new bio-economic privilege will accelerate dispossession and inequalities in the post-covid-crisis city.

1.3 Migration and Nationalism

In considering both larger and systemic contexts as well as their inflections upon the local socio-spatial dynamics (e.g. race, space, class, etc.), *THE CITY IS [NOT] A TREE: THE URBAN ECOLOGIES OF DIVIDED CITIES* crosses

multiple scales, since larger contexts also implicate notions of space across scales, from the architectural to territorial. Thus, the collaboration is concerned not only with the spaces and morphology of cities but likewise with broader notions of territory, geographies, peripheries and linkages, and the broader forces of economics, politics and power through which they are generated. Trumpism and Brexit, for example, were both manifestations of discourses on migration and race, with Trumpism embodying the idea of a 'white America' (without Latinos or black people) and Brexit an idea of Britain where foreigners are not wanted. For those of us in Ireland, Brexit seems more a resurgence of English Nationalism, particularly given the strength of the anti-Brexit vote in Scotland and the North of Ireland.

Europe also has a large influx of refugees from war-torn regions, during a period of high forced displacement globally. Coined the European 'migrant crisis', it has seen a rise in anti-immigration and right-wing groups and sentiment in Europe, particularly toward Muslim immigration and highlighting issues such as integration, removal of refugees from war and conflict zones and migrant populations searching for a better life. The South African context has also seen a rise of xenophobic sentiment, where the post-apartheid inclusive nation-building project has been paralleled by a growth in intolerance and violence towards outsiders, particularly those from other African and South Asian countries. Developing tensions also stem from legislation with rights pertaining to African immigrants, whereby South African citizens cannot be evicted from informal blocks or housing for example, but immigrants have not acquired these same rights. We have recently seen the diplomatic conflict between Nigerian and South African nationals and how these African migrants were treated by other black citizens. Income and opportunities as well as race and nationality exacerbate this conflict. The area of Hillbrow in Johannesburg, once created as a downtown for prosperous European migrants, now showcases some of these tensions between African migrants arriving in South Africa and native South Africans.

As common threads, urban ecologies of divided cities include spatialities, concepts of rights, and systemic concerns as several key constellations, each of which offers entry points and insights that enable a fuller understanding of a broader ecology of interrelated concerns.

2 Questions and Sub-Themes

THE CITY IS [NOT] A TREE: THE URBAN ECOLOGIES OF DIVIDED CITIES is the subject of an international conference series which started in Pretoria, South Africa, in 2022. As questions, analyses, investigations, proposals and provocations, some of the sub-themes of the project were surmised as follows:

2.1 Sub-Theme 1: Historical and Contemporary Processes

The project aims to analyse processes of division and integration in historical and contemporary formations and conditions, to study causal issues as well as ways in which they continue to be produced and manifest.

2.2 Sub-Theme 2: New Grounds

As a core output, the collaborative project aims to create awareness not only of the range of problems but also to enquire into possible approaches and solutions amongst designers, planners, developers, authorities, and communities. The fuller conception and comprehension of the nature of divisions in cities means that more effective principles and strategies can start to be formulated towards healing and transformation into liveable and loveable places, which are a 'home' to more integrated communities, cities and ultimately a more just and unified society. Thus, this sub-theme is interested in how to understand and lay grounds for the possibilities of a new commons and new social and physical formations, seeking ways to work meaningfully for societal advantage. In this regard, what are the different kinds of approaches, tools and possibilities that ought to be learned and explored, between different actors, knowledges and disciplines?

2.3 Sub-Theme 3: Territories and Taxonomies

This sub-theme is interested in the ways in which ecologies of division shape spatialities, territories and geographies, between or within nations, groups, faiths, economic classes, and races. Where do the difficult questions and tensions lay and where do they manifest? Do they manifest into borders, walls, buffers and security? Are these tensions fragmented or are there sites of intensity? How were these spaces or lines socially or physically constructed, how are they policed, maintained, perpetuated or contested? This sub-theme is interested in the construction of spatialities and territory, the taxonomies of their architectures, as well their contestations.

2.4 Sub-Theme 4: (Re)definitions

If 'place' is neither exclusive to the building/object nor the space around it, but both are inclusive of human inhabitation, encompassing space for the individual and for society, then how the actors who shape the built environment define it is a fundamental component of human interactions and

relationships. In divided and pathological societies especially, this suggests redefinitions and repurposing of what place/space could mean and could be. This sub-theme is interested in the (re)definitions of space as a first step in the making of 'place' and the forming of a sense of 'home'.

3 Questions of Agency

THE CITY IS [NOT] A TREE: THE URBAN ECOLOGIES OF DIVIDED CITIES is an inquiry into understanding the systems and factors that (re)produce and shape the divisive socio-spatial qualities of cities and territories with sufficient complexity. At the same time, the collaborative project is also interested in questions of agency, opportunities for new approaches, and possibilities for new interventions. In this regard, and further to the four sub-themes, we also put forward two general propositions as a stimulus for debate:

The city is a tree.

The city is not a tree.

3.1 The City is a Tree (Reproducing Itself)

The depth and breadth of the challenges described appear to be equalled by their continuance. For example, fuelled by systemic problems the socio-spatial realities of South African cities appear to remain entrenched even decades into a 'post'-apartheid era, or in the case of Northern Ireland, even after decades of urban regeneration there remains a palpable lack of change towards a new shared, re-imagined, post-conflict city. What becomes clear is that the social and urban regeneration and transformations that are sought are complex and will not be predicated on narrow economic interests only, which by itself cannot re-imagine cities and societies differently. Rather, what appears to emerge in these urban ecologies is a mutually constituted dialectical process, of relationally constructed physical, psychological and social conditions. Interestingly enough the divisions that occurred as results of conflict and colonialism and division in both South Africa and the North of Ireland are not decreasing but increasing. Since the Good Friday agreement, more kilometres of walls have been built in Belfast, and more conflict has arisen in South African societies with other issues that address the complexity of the topics we are exploring as a collective group.

If definitions of society and identities are imprinted upon the urban fabric and urban experience, then those spatialities and urban artefacts may also naturalise those identities and divisions. In divided cities, the physical artefacts and spatialities of division therefore not only declare their irrevocable past, they also stamp readings upon identities and the urban psyche without even much notice or resistance. Thus, the physical is not benign or a by-product only, it also entails its own powerful forms of agency, claiming literal and symbolic space.

The dialectic and confluence of conditions also produces its own taxonomy—the naturalised architectures of enclaves, microstates, walls and barriers. Since these emerge out of complex conditions, the conventional tools of a single discipline are limited in their ability to understand and engage them. For many post-industrial, post-conflict cities especially, there exists a fraught relationship between disciplinary tools, conventions and representation on the one hand, with lived urban experiences and the desired transformations on the other hand. For example, in the specifics of the 'figure' and 'ground' of the city in such contexts (a common tool in urban design and planning analyses), neither figure nor ground is truly shared or contiguous or independent actors, but rather they remain themselves no less entangled in the problems they wish to address.

3.2 The City is Not a Tree (Remaking Itself Anew)

Convergent with an inquiry into intersecting systemic currents, *THE CITY IS [NOT] A TREE: THE URBAN ECOLOGIES OF DIVIDED CITIES* is also an inquiry into the possibilities for a disciplinary contribution, understood as one part of a confluence of integrated or parallel interventions. More than a Janus Figure of the city, with systemic conditions and oeuvre of taxonomies, it is also an exploration of the imaginative and potentially creative possibilities which could begin to challenge either-or binaries, and offer the potential for creative space, a 'third' kind of condition, or a political, cultural and social interregnum. The collaborative project is interested in the imaginative and multi-stranded confluence of memory, history, social and political context, and the cultural opportunity of such ground, which might also leave opportunity for a new recipe for future fictive narratives to infuse and inflect upon the existing urban morphology.

For built environment disciplines, how can it be a part of such processes which go beyond a purely disciplinary-defined and delimited programme, helping to construct new physical, social and symbolic ground on which to build or develop? For example, spatial disciplines could consider the inter-disciplinary possibilities between related fields like architecture and urban design, in order to explore notions and understandings of new ground, porous borders and thresholds, as ways of diminishing othering and inequalities, and other opportunities that lay between conventional

interpretations. As strategic practices, these may also extend the reach of the debate between city and citizen, and initiate open-public engagement on the complex issues of identity, equality and space.

4 Conference and Publication

THE CITY IS [NOT] A TREE: THE URBAN ECOLOGIES OF DIVIDED CITIES conference series is interested in international and multi-disciplinary contributions which speak both to and from the built environment, from within and from without, in its outlook, methods and solutions.

The inspiration and discursive foundations for the collaborative project came out of the iconic cases of Belfast and South Africa, bringing together lessons and perspectives therein around divisions by faith, race and class, as well as migration and culture; and thus speak to global concerns. This initial focus was also due to the outreach and peace-building work for which these places have come to be known, and our hope is that, by engaging the socio-spatial sphere of issues, we will make a contribution worthy of a wider conversation. Several key contributors hail from or are based in these contexts, and bring the intimacy of knowledge and personal experience into this conversation and global discourse.

5 Conference Host and Main Sponsor

The conference series is an initiative of the SARChI: DST/NRF/SACN Research Chair in Spatial Transformation (Positive Change in the Built Environment) based at the Tshwane University of Technology, Pretoria, South Africa. This position is held by Professor Amira Osman, an NRF rated researcher and at The Department of Architecture and Industrial Design.

The Chair has launched various initiatives including *African Cities: Envisioning an alternative future*, a podcast discussing African Cities and the challenges they face, and the *Healthy Buildings*, *Healthy Cities Lab*, a collaboration between the Council for Scientific and Industrial Research (CSIR) and the SARChI Chair at TUT, with *Platform 100* being the main vehicle of the Chair. *Platform 100* is an initiative to accelerate change and dialogue about the strategic role of the built environment in the socio-economic and cultural fabric of South Africa and Africa. Through public thought leadership, civic engagement and creative research in the built environment, PLATFORM 100 aims to facilitate the implementation of innovation in the Built Environment through partnerships and accelerate progressive policy evolution toward livable and loveable cities. *Platform 100* has DALBERG as a primary strategic global advisory partner.

Platform 100 website and social media

- Facebook: Platform100Africa
- Twitter: @Platform_100
- Instagram: @platform100za
- Website: www.platform100.co.za/

6 Peer Review

The conference looked for original and brave contributions from within contexts experiencing deep divisions, as well as related concerns from around the globe; contributions which challenge preconceived ideas and the status quo where they pose a challenge to our humanity. Existing divisions and inequalities having been magnified worldwide by the pandemic, making the relevance of the research even greater now than it was previously.

The process to be followed by the DIVIDED CITIES: SCIENTIFIC COMMITTEE guaranteed the academic quality of what was delivered and what is now published in the proceedings. An international DIVIDED CITIES: PANEL OF REVIEWERS was appointed with expertise aligned with the conference sub-themes. All abstracts were double-blind, peer-reviewed. Authors of accepted abstracts were invited to submit full papers, which were also double, blind, peer-reviewed. This is to comply with the requirements for subsidy and accreditation by the South African Department of Higher Education and Training (DHET) of South Africa. All submitted abstracts and papers had to adhere to a format provided through the document titled: DIVIDED CITIES: INSTRUCTIONS FOR AUTHORS.

A rigorous review process was followed to check the abstracts and papers in terms of:

- Relevance to the conference theme and objectives
- Originality of material
- Academic rigour
- Contribution to knowledge

The event in July 2022 was a hybrid event with representation from:

39 countries
223 Registrations
45 institutions
57 submissions
104 number of authors
69 online attendees
64 in person attendees

The conference venue, The Capital Hotel at Menlyn Maine saw a diversity of activities including a workshop on Pattern Language facilitated by

Prof. Michael Mehaffy
The keynote speakers were:
Prof. Geci Karuri-Sebina
Arch. Althea Peacock
Dr. Michael Mehaffy
Prof. Magda Mostafa
Mr. Ahmed Essop Vawda
Prof. Ricardo Sanín Restrepo
The guest speakers:
Dr. Ciaran Mackel
Arch. Mokena Makeka
Arch. Robert Krasser
Dr. Vathiswa Papu
Dr. Grace Kanakana
Dr. Emmanuel Nkambule
Prof. Stephan de Beer
Prof. Noeleen Murray
Prof. Phil Harrison
Prof. Genivieve
Ms. Ayanda Roji

7 An Invitation: Other Conference Contributions

In future iterations of this initiative, and in addition to academic contributions, we will continue to be interested in artistic and literary inputs by authors, artists and poets, including critical reflections, position pieces or manifestos, as other critical modes of exploring aspects of divisions and related themes. These represent a range of engagement which can also often encapsulate wisdom, experiences, hopes and imagination in ways that conventional academic literature does not. The format of these submissions may vary and will be discussed on a case by case basis. The submissions will either be featured in the proceedings book or on the website and via the social media platforms of PLATFORM 100. Exhibitions and performance-based contributions will also be welcomed.

8 Conference Organising Committee

Alona Perez

Dr. Alona Martinez Perez is a Senior Lecturer at the Leicester School of Architecture, De Montfort University with qualifications in both architecture and urban design. Originally from Bilbao, Spain, she trained as an architect in England and Scotland. She completed her PhD titled "The Architecture of the Periphery" at the University of Sheffield with a focus on the theory of the periphery in the European city, using a case study in Madrid. She won the PhD Conference bid for AHRA (Architecture and Humanities Research Association) at Plymouth University and has presented over 20 papers and conferences on peripheral issues.

Previous roles include Lecturer in Architecture at Plymouth University (2013–2017), Lecturer in Placemaking at the University of Ulster (2009–2013), tutor for architecture at the University of Dundee and Research Director at the Geddes Institute for the project of cities and regions (where she is currently a fellow). Dr. Martinez Perez worked in practice for nearly a decade in both England and Scotland for both public and private sector clients on many prestigious projects in retail, health, education, hospitality and master planning and continues to work on smaller projects.

She is a Fellow of the Higher Education Academy in the UK and holds a Postgraduate Diploma in Architecture and Urban Design, a Master of Science in Urban Design from Edinburgh College of Art, and a degree in Architecture from Huddersfield University. She has been a visiting Professor at the University of Johannesburg since July 2017 working on peripheral development and de-colonisation, a visiting Professor at the University of Trento and has taught as a visiting lecturer at Edinburgh University, University of Pescara and University Federico II LUPT. She has written extensively at international level and has published in Domus, Urbanistica and the Journal of Urban Design. She has presented at International conferences as a keynote speaker.

In 2011 she was awarded the Urbanistica Prize by the INU, the prestigious National Urban Institute (Italy) for two exhibitions and conferences with the project Belfast@Venice.

Amira Osman

Amira Osman is a Sudanese/South African architect, researcher, academic, activist, public speaker, and author. She is now gaining experience in the world of publishing. She is a Professor of Architecture at the Tshwane University of Technology. She currently holds the position of SARChI: DST/NRF/SACN Research Chair in Spatial Transformation (Positive Change in the Built Environment). Amira believes that the architectural profession has a critical role to play in the achievement of buildings, neighbourhoods and cities that are more equitable, beautiful and functional—creating environments that are lovable, increasing opportunities and offering people a better chance at improving their lives and livelihoods. The belief that the profession has the potential to offer both technical and social expertise towards these aims is the driving force behind Amira's work—indeed, she has spent most of her career advocating for these principles. Amira obtained a PhD in Architecture from the University of Pretoria in 2004. She was a convener for the World Congress on Housing (2005) and the Sustainable Human(e) Settlements: the urban challenge (2012), she served as UIA 2014

Durban General Reporter and Head of the Scientific Committee for the International Union of Architects (UIA) and the South African Institute of Architects (SAIA), she was Chair of the Local Organising Committee for the 9th International Conference on Appropriate Technology (9th ICAT) (2020). She is a joint coordinator for the international CIB W104 Open Building Implementation network. Amira has extensive experience curating international events, coordinating complex programmes and exhibitions in terms of design, conceptualising content and managing diverse teams.

Cairan Mackel

Ciaran Mackel founded the design and research-oriented practice *ARdMackel* with a studio in Belfast and has a portfolio of residential, cultural and community projects on a number of which he is currently collaborating with visual arts practitioners. The practice has gained a number of design awards for their buildings.

He is also an Associate Senior Lecturer in Architecture at the Ulster University Belfast School of Architecture and the Built Environment and is currently teaching a vertical studio unit focussed on the Gaeltacht Quarter—a culture-led regeneration project in Belfast. He has been visiting critic to ENSA School of Architecture in Nantes and to Plymouth University School of Architecture. He is a regular contributor to architectural periodicals writing reviews, editorials and essays to generate discussion on architecture and urbanism. He has also been architect—assessor on a number of architectural and building competitions.

Ciaran was a founder board member of PLACE, developed in co-operation with Belfast City Council to provide a city-centre venue as an Architecture and Built Environment Centre. He was also a founder member of Forum for Alternative Belfast. Ciaran currently serves on the Boards of a number of organisations including, The Gaeltacht Quarter, and the Maze Long Kesh Development Corporation and he is also architect advisor to the Ministerial Advisory Group of the Department for Communities.

Carla Schmidt

Carla Schmidt obtained her Master's degree in Architecture (Cum Laude) from the Tshwane University of Technology in 2018. Her master's thesis was titled: *The Design of an Education-Centred Mixed-Use Redevelopment in Central Pretoria*.

It investigated a strategy for the regeneration of Wachthuis, an architectural landmark of Pretoria Architecture and a leading example of Pretoria Regionalism, within the context of reactivating and revitalizing the city and with the objective of creating social space contributing to fostering a sense of community.

In 2015 she was awarded the Fuchs Prestige Prize in Architecture, a Dean's List: BTech Scholarship in 2014, and a Tshwane University of Technology Post-Graduate Scholarship in both 2015 and 2016. As Fuchs Prestige Prize in Architecture winner's obligation, she presented at the AZA 2015 Student Architecture Festival.

She was invited by the CAA to participate in the International Student Charrette and Masterclasses at RIBA's 2017 International Week which explored the themes created through the New Urban Agenda, where she participated as part of the Historical City working group. Carla lectures at the Tshwane University of Technology in Architectural Design II and Archicad in the 1st, 2nd and 3rd year programmes. She is Research Assistant to the SARChI: DST/NRF/SACN Research Chair in Spatial Transformation (Positive Change in the Built Environment).

She is a registered Candidate Architect at the South African Council for the Architectural Profession and works with

M°NL° Studio and Schmidt Associates on a variety of projects.

Tariq Toffa

Tariq Toffa is a researcher, educator and architect, and director of RE: think/design (research, education and design consultancy). He has worked in academia and professional practice, as well as in the NGO sector where he was manager and researcher for the South African chapter of the Dallant Networks/Ford Foundation project Urban Impact (URB.im), and manager and researcher for the Social Housing Focus Trust (SHiFT). His research interests include the socio-spatial and discursive histories of colonialism-apartheid, urbanisms in contemporary African cities and, more broadly, critical thinking around modernity and decoloniality in space, education and society. Tariq Toffa developed the title and themes for the conference which went on to inspire numerous conversations and collaborations.

Denise Morado

Denise Morado is a Professor at the School of Architecture and the Postgraduate Program in Architecture and Urbanism at the Universidade Federal de Minas Gerais (UFMG), Belo Horizonte, Brazil. Architect and Urban Planner, Master in Architecture (University of York, England), PhD in Information Science (UFMG), Post-doctorate in Geography (UFMG). Coordinator of the PRAXIS-EA/UFMG research group and researcher of CNPq (National Council for Scientific and Technological Development). Investigations about contemporary production of urban space, exclusion system in cities, shared and/or collaborative design and production processes, technical assistance to low-income dwellers and social movements, strategies and impacts in the formation of the State-Capital corporation and occupations, removals, evictions and resistance to the processes of production of cities. Author of the book "The exclusion system in the Brazilian neoliberal city", published by Lutas Anticapital.

The Intersections of Past and Present Policies in Producing and Perpetuating Processes of Division in Cape Town

Kenny Chiwarawara

Abstract

South Africa still shows signs of a dual economy characterised by one of the world's highest rates of inequality. Cape Town is regarded as one of the most unequal cities—if not the most—in the world. Colonialism, apartheid, and Cape Town's neoliberal stance have produced exceptional inequality. How have past and present policies and predispositions shaped Cape Town's outlook, particularly in the two low-income communities of Gugulethu and Khayelitsha? Drawing on a review of the literature and empirical data, the paper finds that Cape Town continues to be marked by high rates of inequality, massive investments in the core and wealth concentrated in the CBD and formerly White areas under the Group Areas Act. Areas formerly designated for Black African people remain largely poverty-stricken with unimpressive basic service delivery records. In these glaring inequalities, service delivery protests have erupted. The paper employs the Framing Processes Theory to analyse activists' understandings of their situations and protests. While scholars have stressed the 'issue-based' and 'localised' nature of these protests, they have not adequately interrogated the ways in which protesters frame their struggles in relation to the city. The paper argues that although these protests are 'issue-based' and 'localised', protesters do not understand their struggles as isolated from developments in the rest of the city. This points to a rising consciousness which is necessary to broad economic and political challenges in the future.

Keywords

Cape Town • Policy • Inequality • Segregation • Dual city • Protest

K. Chiwarawara (✉)
Centre for Social Change, University of Johannesburg, Johannesburg, South Africa
e-mail: kchiwarawara@gmail.com; kchiwarawara@uj.ac.za

1 Introduction

This chapter paints a picture of the socio-economic inequalities in Cape Town, South Africa, and the ways people have protested for better basic service delivery in Gugulethu and Khayelitsha. Past and present policies and predispositions have shaped Cape Town's outlook. Cape Town's neoliberal stance, three centuries of colonisation, four decades of apartheid policies have created matchless manifestations of inequality (McDonald, 2012). In other words, pre-1994 policies and post-1994 policies have produced, perpetuated and deepened processes of division in Cape Town. Previous studies have addressed issues of residential segregation and inequality in Cape Town (McDonald, 2012; World Bank, 2022). In these contexts, communities have engaged in dramatic protests for urban development.

Scholars have viewed protests that have ensued in South Africa's communities as geographically 'localised' and 'issue-based' (Alexander et al., 2018; Bond & Mottiar, 2013; Paret, 2018; Pithouse, 2013; Runciman, 2016). While this is true, analysts have not adequately interrogated how protesters frame their struggles in the context of the city. This paper argues that protesters understand their struggles neither as isolated from developments in the rest of the city nor as unique to their locality—but as characteristic of impoverished residential areas and poor people in general. This points to a rising consciousness which is one of the necessary ingredients for broad economic and political challenges.

2 Theory and Methodology

The paper employs the Framing Processes Theory to explain the ways in which protesters regard themselves, their situations, and protests in Gugulethu and Khayelitsha in light of the greater Cape Town. Data were drawn from secondary and primary research. Primary research entailed excavating rich information using in-depth interviews and focus group

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discussions with activists in Gugulethu and Khayelitsha. These two sites, located in the Western Cape province, are important for consideration. Whereas Gugulethu is an older township (established in 1960) with a rich history of the anti-apartheid struggle, Khayelitsha is a relatively newer township (founded in the 1980s) with record protests.

3 Findings

The South African population is predominantly comprised of Black Africans. However, in Cape Town, Coloureds constitute the largest population group (42%). This is followed by Black Africans (39%), Whites (15.7%), other groups (1.9%) and Asians (1.4%) (StatsSA, 2011). Statistics from the 2011 census revealed that, by and large, population groups still reside in localities previously designated based on race. A majority of Black Africans reside in areas that are chiefly Black, e.g. 99% of Gugulethu's and Khayelitsha's population is Black Africans (StatsSA, 2011). The 1996, 2001 and 2011 censuses indicate that these townships are among the leading areas with inadequate access to basic services in Cape Town.

Although the percentage of Cape Town's formal dwellings remained largely stagnant between censuses 2001 (79%) and 2011 (78%), informal dwellings experienced a 3% increase with 87% of Black Africans living in informal dwellings (StatsSA, 2011). Areas such as Gugulethu and Khayelitsha carry a huge share of informal settlements; 55% of Khayelitsha's households resided in informal dwellings and 29% of households in Gugulethu occupied informal settlements (StatsSA, 2011). While the percentage of households in Cape Town with flush toilets joined to a sewerage system rose from 2001 (85%) to 2011 (88%), this period also saw an increase in the number of households that use bucket toilets from 34 200 to 48 500 with most of these households being Black Africans (StatsSA, 2011).

A comparison of census statistics of Black Africans who largely reside in Gugulethu and Khayelitsha with those of White South Africans in Cape Town reveals unambiguous inequalities in basic service delivery in the City of Cape Town. Official statistics show that 63% of Gugulethu's households use flush toilets, 30% utilise bucket toilets and 3% have no access to any toilet facility (StatsSA, 2011). While 72% of Khayelitsha's households use flush toilets, the percentage which uses bucket toilets is 6.7% and as high as 10.1% have no access to any toilet facility at all (StatsSA, 2011). Contrariwise, nearly all (99%) White households use flush toilets; only 0.1% use bucket toilets and a meagre 0.2% do not have access to any toilet facility (StatsSA, 2011). Additionally, while the local authorities do not remove refuse for 26% of Gugulethu's and Khayelitsha's households, the percentage of White South African households in Cape Town whose refuse is not removed only stands at a paltry 4.7% (StatsSA, 2011).

Using the Framing Processes Theory to analyse how protesters make sense of their world (Snow, 2004), this study's findings reveal that activists from Gugulethu and Khayelitsha believe that the government does not treat different social classes and races the same. The prevalent view among the participants was that the Western Cape government shows no genuine interest and care towards poor/Black residents. While the protests are largely issue-based and localised, findings reveal a rising consciousness of the interconnected nature of the struggles and an understanding of the protests in relation to the city. For example, participants juxtaposed services in Joe Slovo and Milnerton. Joe Slovo is an informal settlement which lies next to Milnerton (once a lily-White community). This shows that the activists see their struggles in relation to the rest of Cape Town. Similarly, participants contrasted services from Gugulethu to Enkanini (an informal settlement in Khayelitsha) with those delivered from Gugulethu to Cape Town, stating that predominantly White and Coloured areas invariably receive better and well-maintained services compared to Black and mostly impoverished areas. Whereas Geyer and Mohammed (2016) argue that racial segregation has been replaced by class-based segregation in South Africa, my participants would frame their situations differently, noting that a person can easily recognise the race that stays in an area from the services in the area, suggesting a close association between race and class. Interestingly, participants stressed the importance of broadcasting their protests to areas outside their localities—for example—they referred to dumping of human excrements at the Cape Town international airport (to broadcast their sanitation woes to both national and international tourists) and the Western Cape's provincial legislature.

It can be argued that even protests where strategic roads are barricaded are meant to inconvenience locals as well as commuters outside the affected community. In a march from Gugulethu to Khayelitsha, Pastor Skosana along with other people from different formations, brandish banners written "Welcome to hell; SA townships" (Meyer, 2011). These protests (often held annually) are meant to broadcast the abnormalities existent in townships and interrupt "the ongoing hypnosis that makes us accept such abhorrent living conditions" (Way of Life Church, 2013). In other words, these protests aim to wake two groups of people up from their hypnosis; those who stay in 'hell' (townships) and those who reside in their 'paradises' (people who bask in the warmth and comfort of their communities and houses). Such wake-up calls lay bare the obscure realities concealed from

the public (hidden from those who do not experience the harsh realities of township life) and broadcasting it on international and national platforms.

Participants referred to other protests that affected poor South Africans including student protests, farm and mine workers protests which points to a growing understanding of protest in general in South Africa. Discussions with participants reveal an understanding of the duality of Cape Town as well as a desire to showcase their frustrations with service delivery outside their immediate locality which points to rising consciousness. This does not suggest that all participants have the same level of consciousness. As Runciman (2011, p. 608) shows in her analysis of the Anti-Privatisation Forum, 'bridge leaders' play a pivotal role in "politicising the seemingly private issues of the community and linking" a movement's message to the everyday experiences of potential recruits. Given the rising consciousness, this paper argues that with the right organisation, activists will likely attack the policies at the heart of the deepened segregation.

4 Conclusion

Intersections of past and present policies have produced and perpetuated processes of division in Cape Town. Although the protests that have ensued are 'issue-based' and 'localised' with no direct attack on the neoliberal policy, there is a rising consciousness of the marginalisation which characterise impoverished communities throughout South Africa in general and Cape Town in particular. Over time, there is a possibility that communities will connect with other impoverished communities to directly attack the neoliberal stance of the government in a bid to create a more egalitarian South Africa.

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Belfast's Hidden Architectures of Division and Cohesion

David Coyles and Clare Mulholland

Abstract

This paper draws on two recent research projects to provide a perspective on the overlooked role played by 'everyday' architecture in post-conflict Belfast. It first reveals the capacity of architecture to latently reinforce and duplicate conflict forces by examining an historic body of *hidden barriers* put in place between 1977–1985 as part of a confidential programme of government security planning. It illustrates how seemingly nondescript buildings and spaces work in unseen ways to foster continued social division within present-day Belfast. The paper then moves on to provide a contemporary counterpoint by revealing the capacity of architecture to stimulate positive micro-politics between divided groups. It analyses a series of publicly funded community hubs which generate novel architectures that aim to promote social mixing and exchange. It illustrates the opportunities and challenges of these spaces working in hidden ways to stimulate and sustain new forms of cross-community contact. The paper concludes by arguing for a re-evaluation of the role played by architecture, in its widest sense, within wider peacebuilding policy processes.

Keywords

Architecture • Belfast • Conflict • Territory • Inter-group contact • The Troubles

D. Coyles (✉)
Ulster University, Belfast, UK
e-mail: d.coyles@ulster.ac.uk

C. Mulholland
School of Natural and Built Environment, Queens University Belfast, Belfast, UK
e-mail: c.mulholland@qub.ac.uk

1 Introduction

The spatial legacies of historic sectarian conflict in Belfast have long been of interest to scholarship. Much of this valuable literature is chiefly concerned with the "interface" zones between contested Catholic and Protestant areas and the "peace walls" and assorted "interface structures" that purposefully divide historically confrontational communities in the city (for example, Boal, 1969, 1995; Hepburn, 1994; Murtagh, 1995; Murtagh et al., 1993). These studies are complemented by the ongoing interrogation of the implications posed by the city's many contested spaces in the aftermath of the 1998 *Belfast Agreement* peace accord (Northern Ireland Office, 1998) during what is now commonly recognised as a "post-Troubles" era (Dixon et al., 2020; Esposito De Vita et al., 2016; Murtagh, 2002, 2011; Shirlow & Murtagh, 2006).

This paper challenges the emblematic preoccupation with highly visible and widely recognised architectural legacies of conflict embodied in peace walls and contested spaces by drawing on findings from two recent architectural research investigations that illuminate the less recognised ways that the commonplace and nondescript "everyday architectures" of Belfast act in ways which are both reinforcing division and promoting integration. The disclosure of *hidden barriers* first reveals how historic Troubles-era security policy continues to latently impact the contemporary city. Then, by way of comparison, the analysis of more recent government-funded spaces illustrates the subtle challenges facing spatial desegregation. The paper concludes by calling for a new evaluation of the role that these overlooked "everyday architectures" can play as part of a more broadly focused peacebuilding policy.

The research projects utilised the analysis of formerly closed government archives and/or historical and contemporary policy documents to first identify a series of architectural case studies in Belfast around which more focused examinations could take place. The identified case studies

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then provided the basis for practice-based fieldwork which drew upon architectural surveys, mapping and photography alongside interviews and focus groups with relevant stakeholders. The collated research data was then analysed and evaluated by the researchers.

2 Everyday Architectures of Territory

The onset of the Troubles in 1969 initiated an unprecedented mass movement of the population that is thought to have displaced close to 15,000 people in Greater Belfast alone (Darby, 1986). However, historic inequalities in the implementation of housing policy meant that the surplus of alternative accommodation for displaced Protestants was paralleled by a scarcity of alternative options for displaced Catholics. This unexpectedly placed large and rapidly depopulating Protestant areas, with swathes of empty houses, side-by-side with much smaller but significantly overcrowded Catholic areas. However, these unwanted dwellings could not be used to meet the demand for additional Catholic housing because they resided in what was still understood to be Protestant territory. To resolve this dilemma, in June 1977 the government established a confidential *Standing Committee on the Security Implications of Housing Problems in Belfast* (Coyles, 2017). Between 1977 and 1985, this committee privately worked alongside the public renewal programmes that were progressing across the city to oversee a plethora of permanent physical interventions at flashpoint locations. The case studies presented in this paper illustrate how this realm of hidden barriers utilised the everyday architecture of inner-city redevelopment to physically separate residential areas. For example, in north Belfast, existing housing was cleared and the area rezoned for industrial use to prevent the Catholic Ardoyne area interacting with the Protestant Lower Oldpark neighbourhood (Fig. 1). And, to the southwest of the city, a new highway was constructed to eliminate contact between the Catholic Twinbrook and Protestant Areema housing developments (Fig. 2). These and many other hidden barriers endure as material territoriality (Elden, 2017) which continues to foster social and physical division in unseen ways within the contemporary 'post-Troubles' city.

Fig. 1 The "hidden barrier" industrial estate, on the former site of 17 acres of housing stock

Fig. 2 The “hidden barrier” highway dividing once connected Catholic and Protestant housing

3 Micropolitics of Everyday Architecture

In Belfast, criticism is often drawn on the duplication of public services to serve “both sides of the community”. As a result, the city contains multiple buildings located in close proximity delivering the same service. Population segregation continues to support these divisive community dynamics and associated conceptions of territoriality, with the notions of “ownership of space” continuing to act as a sustained feature in the post-conflict city. It is therefore important to identify spaces that have the potential to attract cross-community groups. Practical, “everyday” locations, developed with services and facilities that people need, use and want on a regular basis, offer space to facilitate positive “everyday” micropolitics between groups. Such use of everyday spaces and services, over a sustained length of time, can break down individual prejudices about the “other” group, correct negative associations, build shared experiences, and create positive emotions about intergroup interactions (Amin, 2002; Gaffikin et al., 2008; Gehl, 2011; Hewstone et al., 2008; Lownsbrough & Beunderman, 2007). The paper presents case studies of government-funded buildings, developed to deliver much-needed leisure, health and education resources to the wider community (Fig. 3).

Located in North Belfast, they are sited in an area with deep residential polarisation, the studies reveal how the shared need for everyday public resources can cultivate an amiability between communities (Amin, 2008), however the full cross-community potential remains limited by the engrained segregation of the post-conflict city. The discussion sheds some light on the challenges of design and construction of common shared sites in Belfast, alongside their potential to facilitate intergroup interaction and advance the normalisation of the city in the post-Troubles period.

Fig. 3 Carlisle Wellbeing Centre, Shankill Wellbeing Centre, and Girdwood Community Hub (Left to right)

4 Concluding Reflections

The contrasting expositions of architecture in this paper illustrate the dichotomy of post-conflict conditions in Belfast where intergroup stability sits side-by-side with entrenched spatial boundaries and social segregation. The spatial expression of population segregation is not something that is simply evident in the brazenness of divisive barriers both seen and unseen, but something that is witnessed through multiple aspects of everyday life where commonplace spaces can be manipulated to support new connections or established separations. Post-conflict community integration entails multiple complex challenges, but intervention should be actioned at all levels. And here, architecture and planning provide the active platform for both individual and group engagement and negotiation, while working towards a sense of shared society in a once-divided landscape.

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Patterns of Inclusivity and Exclusivity: A Comparative Analysis of Asmara, Eritrea and Durban, South Africa

Belula Tecle-Misghina

Abstract

Asmara in Eritrea, and Durban, South Africa evolved as modern cities, albeit from different planning decisions that critically defined their urban ecologies. Whereas the former expresses a renewed urban vitality, both spatially and socially during its postcolonial era, the latter expresses a divided city. The paper aims to define the causal planning decisions that led to two different trajectories in the evolution and present characteristics of their urban ecologies. A comparative analysis highlights the critical role of urban nodes, notably the market, as a catalyst for urban vitality. A qualitative methodology through a brief literature review and graphical analysis is strengthened by the authors' own autoethnographic experience as a former citizen of Asmara, now resident in Durban. The study finds that the critical planning decisions for Asmara and Durban differently impact their urban ecological patterns, either as places of vitality or decay. The expression of the inherent genius loci of place emerges as a critical element of the urban character.

Keywords

Market • Inclusive • Nodes • Urban design • Colonial • Modernist • Divisive

1 Introduction and Background of the Problem

The postcolonial cities of Asmara in Eritrea, and Durban in South Africa, express contrasting urban patterns due to fundamental planning decisions. This qualitative study explores the influences of such decisions on the urban ecologies of these postcolonial cities through their political-administrative transitions.

The urban evolution of Asmara, since the Italian colonial period, expresses a vital link between conceptual urban plans and architecture (Godio, 2008), that critically defines the urban place vitality of Asmara (Tecle-Misghina, 2014). The urban order and structure are formed by an open space system carefully defined by human-scaled built form. In this context, the Asmara Market area (Fig. 1) formed the cornerstone of the city's urban growth, as the most socially cohesive urban space (Fig. 6).

The city of Durban alternatively evolved upon a planned system of colonial control. The spatial system dominated by roads and some monumental political landmarks, such as the town hall, promoted social exclusion through divisive elements of urban design. The markets, in this context, were socio-spatially disconnected, much later forming a cluster around the Warwick Junction precinct (Fig. 2).

2 The Role of the Market in the Urban Ecology of Asmara

The site of the Asmara market area was active, prior to Italian colonisation, as a trade centre and caravan stop in the early 16th Century. Located at the intersection of caravan routes between Massawa (a port in the Red Sea) and the routes to Sudan via Keren city (Fig. 3), it had a critical position in the Afro-Arabian trade system (Schmidt and Curtis, 2001, as cited in Lusini, 2018, p. 186).

The *genius loci* of Asmara is deeply rooted in the intangible layers of human existence layering of historical memory in place through its architecture and topographical adaptation on what essentially became a modernist city plan (Denison et al., 2006). Lusini (2018) affirms that Asmara's cultural heritage is not confined to the modernist colonial buildings of the city. Despite divisive colonial intentions of

B. Tecle-Misghina (✉)
Department of Architecture, Durban University of Technology, Durban, 4001, South Africa
e-mail: BelulaT@dut.ac.za

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Fig. 1 Asmara market area (Google Maps 2022): (A) Orthodox Cathedral, (B) Great Mosque, (C) Greek Orthodox Church, (D) Covered Grain Market, (E) Food Market, (F) Fish Market, (G) Market Pavilion, (H) Bus station (Author, 2022)

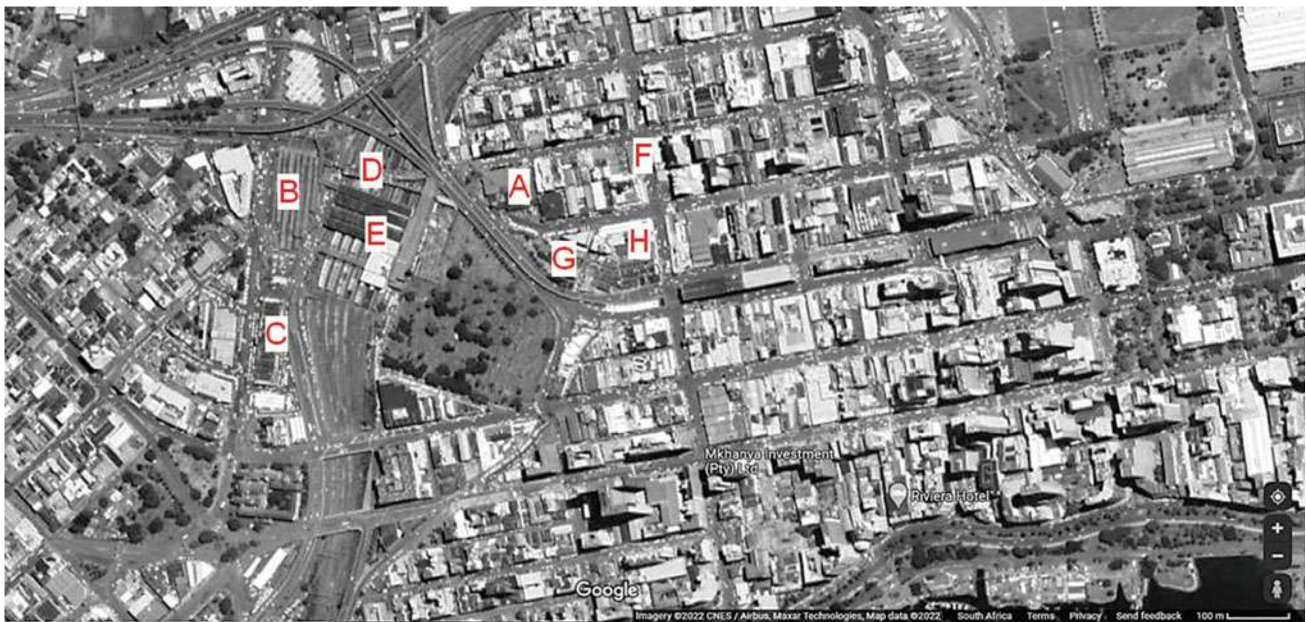

Fig. 2 Durban market area (Google Maps 2022): (A) Victoria Street Market, (B) Early Morning Market, (C) English Market, (D) Herb Markets, (E) Berea Station, (F) Grey Street, currently Yusuf Dadoo Street, (G) Cathedral, (H) Mosque (Author, 2022)

different intensities, Asmara evolved as a socially cohesive city, facilitated by its open public spatial system primarily in the form of an orthogonal grid ordered by gardens, avenues, squares and the market area (Fig. 5).

A chronological analysis of maps, through the author's prior work (Figs. 3, 4 and 5), illustrates the critical role of the market as a primary ordering element in the spatial evolution of Asmara. The analysis begins with the pre-colonial city, proceeding to its present form.

The map analysis above illustrates how the market critically defined the form, order, structure and social vitality of the city. The architectural quality of the flanking buildings

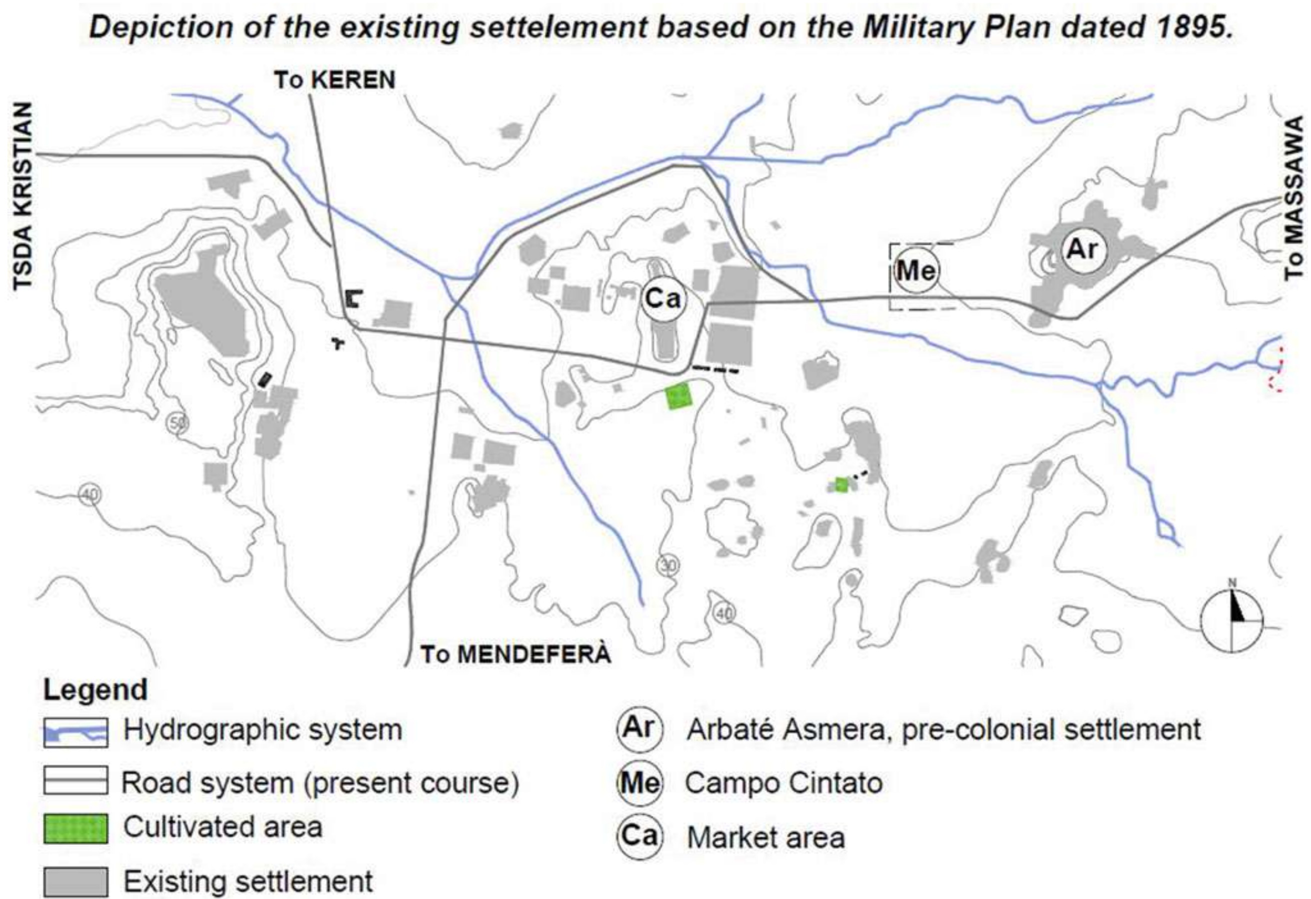

Fig. 3 Map (1895) illustrating the positions of the existing market area and the adjacent *Arbaté Asmera*, the pre-colonial settlement of Asmara (Tecle-Misghina, 2014)

further enhanced place making and vitality (Fig. 6a, b), affording the expression of human layers of dwelling in place, including its ancient and medieval history (Lusini, 2018).

3 The Urban Transformation of Durban and Its Markets

The initial form of Durban (Fig. 7) illustrates a formal grid pattern of streets and a central square dominated by the Town Hall.

The city subsequently evolved through eras of spatial contestations characterised by socio-economic displacement and resilient spatial appropriation. Rosenberg et al. (2013) and Luckan (2014) elucidate the development of a dualistic city—the British Centre and the Grey Street/Warwick precinct—through socio-economic contestation, mainly due to the arrival of Indian traders (Itafa Amalinde Heritage Trust, 2010, p. 28) and the growing demand for their goods amongst different population groups in the city. The consequent proliferation of "black" business in the city led to strategies to spatially displace the "Indian menace" from the British centre (Rosenberg et al., 2013). Such displacement, however, paradoxically led to a watershed moment that catalysed the establishment of the Grey Street/Warwick Junction Precinct (Fig. 2).

This district developed around some key urban landmarks such as the Grey Street Mosque, the "squatters" Market, and the West End Station, now known as the Berea Station (Fig. 8). The "squatters" market, an important place of social cohesion, in the "black" city, was later relocated to Victoria Street, transforming it into a vibrant hub of socio-economic activity. It was unfortunately inexplicably destroyed by fire and rebuilt as the Victoria Street Market (Rosenberg et al., 2013)—a building that internally contained the market activities, consequently losing the vibrancy of a street market that once was.

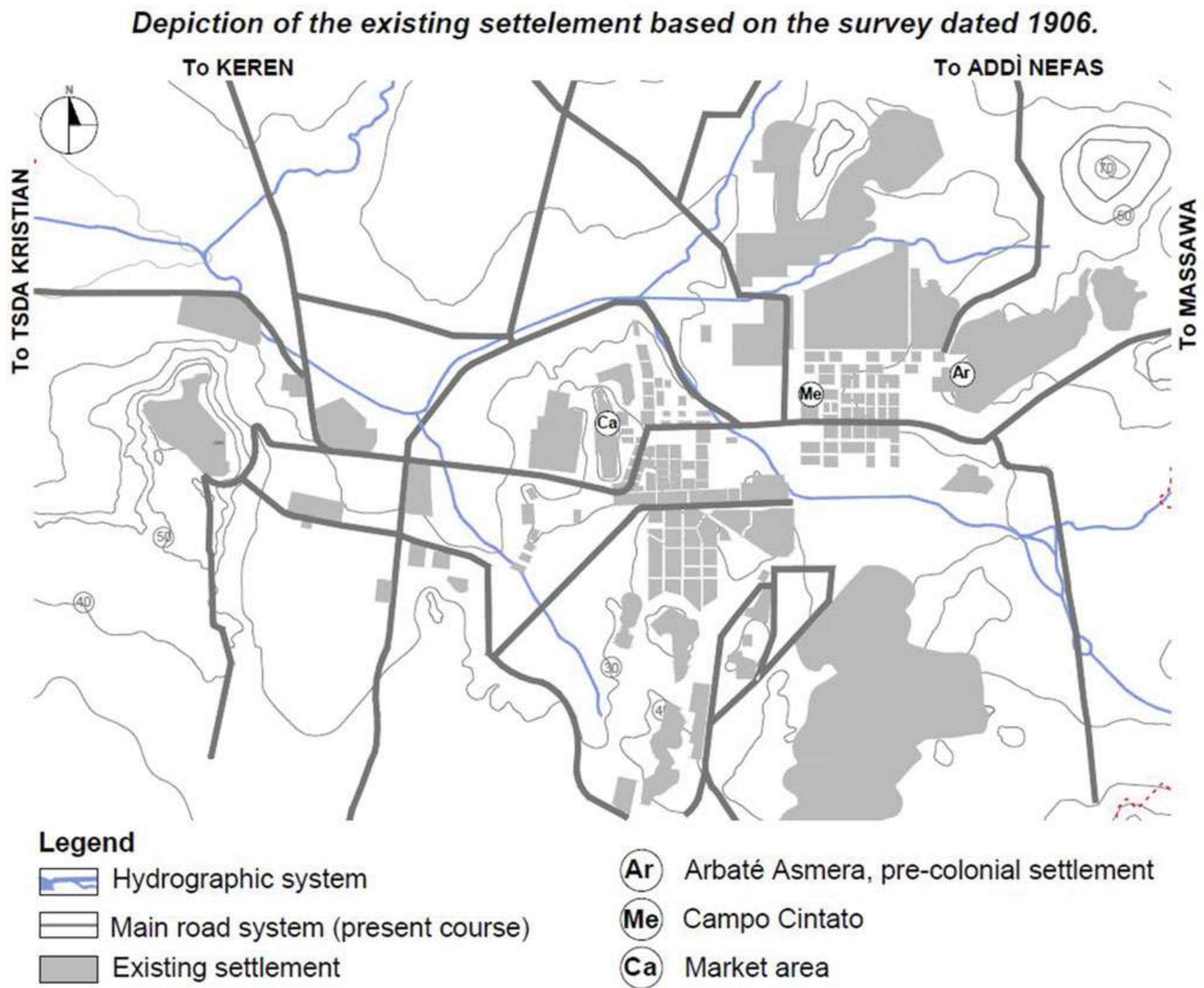

Fig. 4 Map (1906) illustrating the position of the existing market area defined by buildings in a definitive linear form (Tecle-Misghina, 2014)

During the post-apartheid era the Warwick Junction Precinct started to proliferate as an informal trade precinct through appropriation of various dead and lost spaces (Trancik, 1986) around the Early Morning Market and beneath motorways and abandoned bridges (Fig. 9). As such, the vibrancy of markets spread through spatial recycling (Luckan, 2014), and progressive design interventions such as the new linking trade bridges, that spatially transformed the precinct into a vibrant network of differently scaled markets at multiple levels of the street (Fig. 9).

While the spatial transformation of Durban progressed from resilience and spatial recycling through appropriation, as in the Grey Street/Warwick Junction Precinct, in the post-Apartheid era, however, there was also an undesirable exodus of formal businesses and residents, resulting in the decay of some parts of the city.

4 Analysis and Conclusion

The study found that the impact of colonialism played out very differently in the evolution of the urban ecologies of Asmara, compared to Durban. Both cities evolved through political administrations that, however, differently influenced key design decisions in their urban form and patterns of evolution.

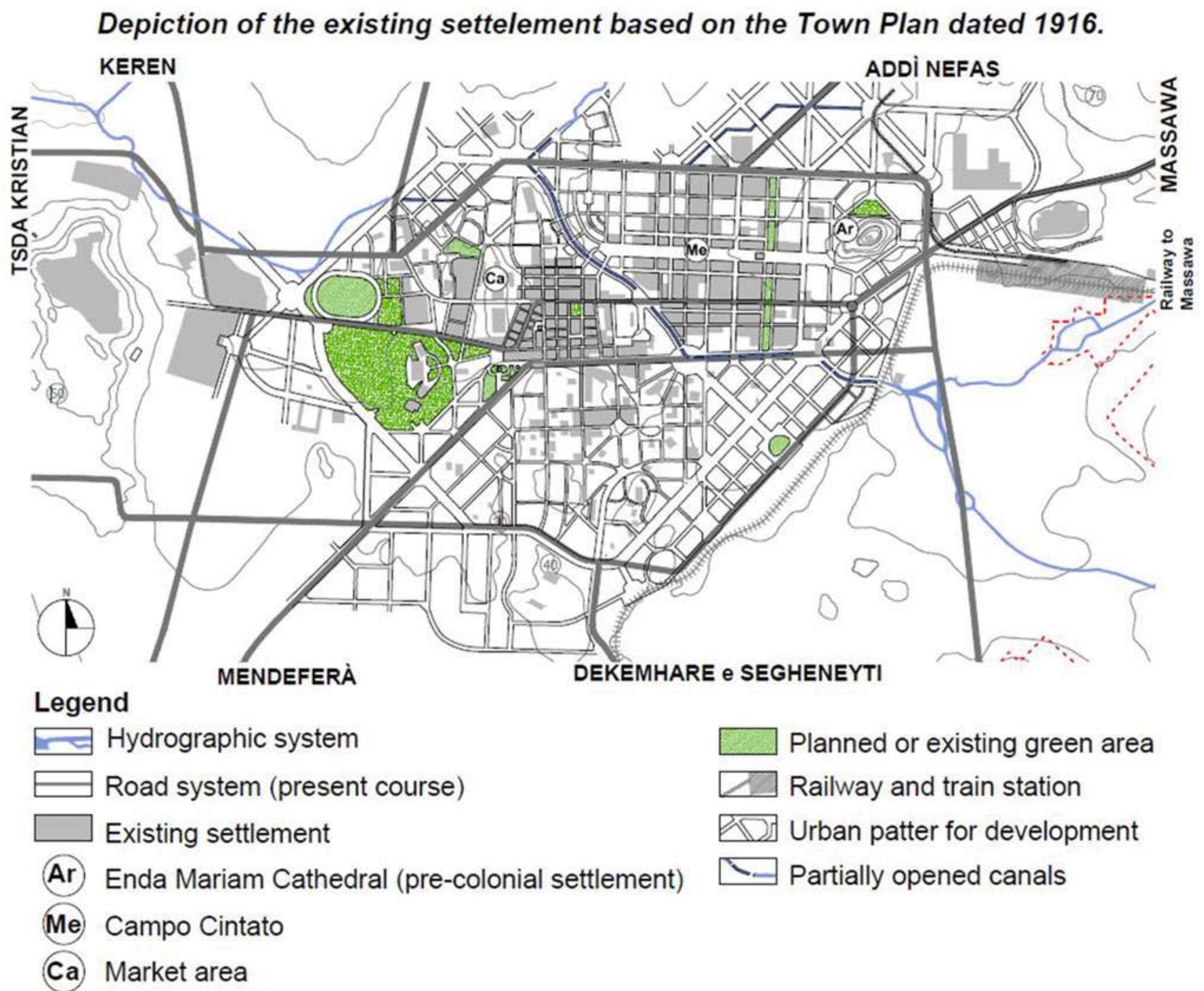

Fig. 5 Depiction of existing settlement based on the Town Plan dated 1916. The market area is evident in its elongated form defined by buildings (Tecle-Misghina, 2014)

Asmara's spatial–temporal transition from Italian to British to Ethiopian to the *Dergh* and eventually independent Eritrea (1991) was a gradual evolution of the character of the city along a progressive positive trajectory of socio-spatial vitality. The human-scaled design of Asmara and the intangible heritage therefore continues to stimulate its socially cohesive urban character through multi-layered place complexity, as elucidated in the *Australia ICOMOS Burra Charter, 2013*. This also critically contributed to the city being awarded the status of a UNESCO Heritage site. Presently, the Greater Asmara Area (GAA) that resulted from urban sprawl (Tewolde & Cabral, 2011), continues to rely upon the vitality of its historical core/genius loci in its growth.

Durban, on the other hand, experienced various socio-spatial shocks since its colonial inception and into the post-apartheid era, that radically changed the character of urban place in the city. A positive outcome is the enhanced socio-spatial inclusivity through various socio-economic opportunities in informal spaces, as evident in the spatial transformation of the Grey Street/Warwick districts. The divisive strategies of apartheid planning, however, continue to fuel and express socio-spatial divisions and discohesion; push–pull

Fig. 6 **a** Asmara—Mixed-use building flanking the elongated marketplace (Author, 2022). **b** Asmara—The Colonnaded covered market along the North–South market axis (Author, 2022)

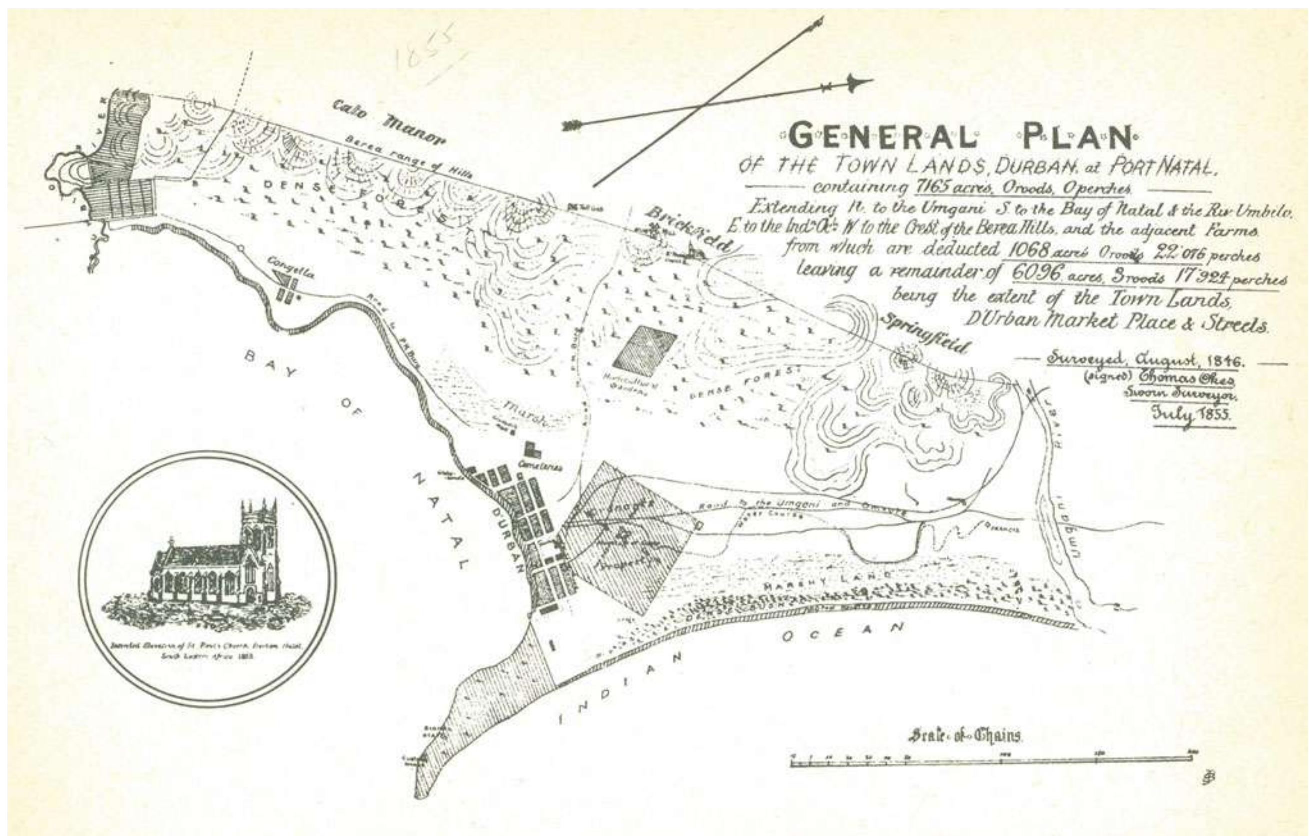

Fig. 7 General Plan (dated 1855): Town Lands Durban, Port Natal (Courtesy of UKZN Architectural Library)

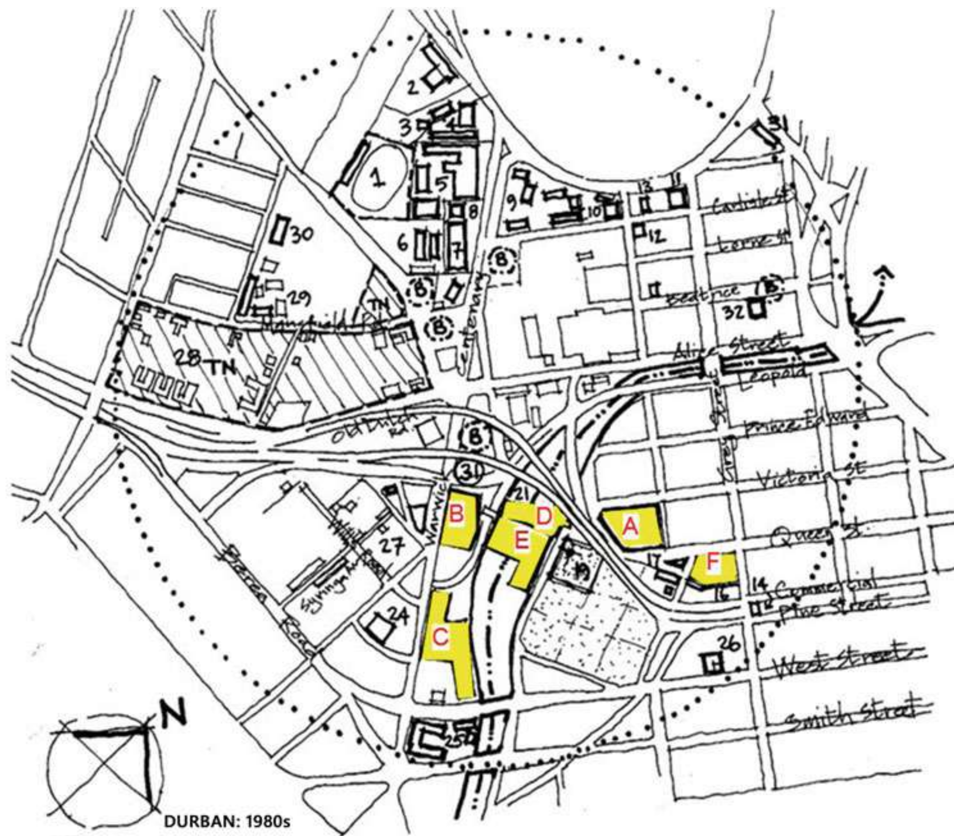

Fig. 8 Evolution of the facilities and institutions in the Warwick Junction Precinct (WJP) during the apartheid period from the 1970s to the 1980s (adapted from Rosenberg et al., 2013, p. 70). (A) Victoria Street Market, (B) Early Morning Market, (C) English Market, (D) Herb Market, (E) Berea Station, (F) Grey Street Mosque

Fig. 9 Differently scaled markets at multiple levels of street, vitalising socio-economic-spatial interrelationships (Author, 2022)

factors through the planning of new town centres and gated estates compromise the potential vitalisation of the historic city, consequently leading to areas of abandonment and decay.

The study found that in Asmara the latent *genius loci* nevertheless expressed through place albeit upon divisive administrative intentions and a modernist city plan. On the other hand, the imposed control of the colonial plan in Durban perpetuated an evolution of contestation and division that continues to compromise its potential to enhance urban vitality and social cohesion.

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Comparative Study of Asian Cities' Fabrics—The Morphological Approach

Beisi Jia

Abstract

The urban morphology and housing form in traditional cities in South and West Asia are important components of urban cultures, especially in the new developments in 'The Belt and Road Initiative' of China. Although western colonialism in modern history had strong impacts on the urban forms, the change is evolutionary and a gradual process of sustenance and mutation. The objective of this research is to reveal morphological characteristics through cross-cultural comparative studies of the self-built urban fabrics. On the basis of morphological theories and methodologies, four cities are selected and compared in terms of three spatial hierarchies, with the morphological patterns being independent of any paradigm.

Keywords

Morphological patterns • Comparative study • Asian cities

1 Introduction and Significance of Research

Asian civilisation has the longest history in the world. As home to the largest populations in the world today, Asia contains 15 of the world's 20 most populous cities, and these cities represent various ethnic, religious and social backgrounds (Khan, 1996). In the nineteenth century, European urban planning ideas, promenade streets, monumental vistas, garden cities and traffic efficiency in modern cities were confronted with diversities in urban living quality in Asia (Wang & Jia, 2019). High-density, low-rise, self-built communities are growing rapidly in city centres and the surrounding suburban locations.

Since the late twentieth century, the regionalism approach has been limited to having architecture and segregated practices as isolated subjects from the urban context. Except in environmental studies, human perception and preferences related to these conditions are highly subjective and fuzzy (Tzonis, 2005). The fundamental aspects of quality from buildings, blocks, streets, neighbourhoods and districts as a whole are largely ignored. This study analytically investigates the morphology and spatial patterns of the area as systems rather than single buildings. The morphological characteristics of four highly dense, fast-growing cities with the popular self-built structures inherited and maintained in different backgrounds to enrich the understanding of the embedded social, historical and economic impacts (Table 1).

2 Methodology

Morphological research initiated from Conzenian constitutes a perception of the physical urban fabric as documents of civilisation and the urban landscape. According to Muratori-Caniggia, the various processes of change in urban residential districts not only affect the urban tissue and form but are also closely interrelated with the urban life and physical structure of cities (Wang & Jia, 2019). The morphological analysis is organised into three sections, each focusing on three spatial levels: urban network form, neighbourhood blocks and (typical) housing forms. Firstly, cities with different characteristics require different modes of organisation and management, leading to different patterns of streets/roads. Secondly, neighbourhood blocks with different characteristics are located in city districts, facilitating the connection and transition of fabrics. Thirdly, buildings are basic elements that shape the spatial relationship between the inside and outside, between individuals and communities and between income and land price.

B. Jia (✉)
The University of Hong Kong, Pokfulam, Hong Kong
e-mail: bjiaa@hku.hk

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Table 1 Population density of the five cities

Cities	Population (persons)	Average population density (persons/km^2)	Population density in central area (persons/km^2)
Sana'a[a]	1,707,586	13,552	
Bagdad[b]	10,710,350	9,444	85,140
Jakarta[c]	10,562,088	15,906	
Hanoi[d]	7,588,000	2,269	38,896

[a] Population of Sana'a 2022—Yemen (aznations.com)
[b] Population of Baghdad 2022—Iraq (aznations.com)
[c] Population of Jakarta 2022—Indonesia (aznations.com)
[d] Home Page—english.hanoi.gov.vn; Population of Hanoi 2022—Vietnam (aznations.com)

3 Comparative Analysis

3.1 Urban Network Form

Historical Islamic cities exhibit similar patterns centred on the mosque, and the street network leads to the mosque from the city gates (Alsadoon, 2020). The water distribution system also contributes to the form of old cities. The rest of the cities are residential districts formed by communities and served with community facilities (Fig. 1).

The self-built communities in Sana'a remain relatively unchanged by modernisation, although it has undergone tremendous urban growth in the last half-century with low-income groups in suburban areas can be observed clearly from the random street networks and urban sprawl (Wa'el Alaghbari et al., 2008). The urban context in Baghdad, however, represents two contradictory extremes: a deteriorated and neglected historical centre and the large-scale peripheral modern neighbourhoods, in which the enormous scale of the grid design pattern has resulted in incomplete, dirty, unsecure public spaces (Alsadoon, 2020). Fast-growing Jakarta equipped with American-style highways was left with large-scale self-built communities in between. As a result of these developments, modern Hanoi now contains different urban areas with distinct rural networks (Fig. 2).

3.2 Neighbourhood Blocks

The prototype of a neighbourhood (Hara) of Sana'a consists of a housing unit, a mosque, open space, a water fountain, a fruit and vegetable garden and a hot bath (Haidara & Talibb, 2013). The traditional city of Baghdad, which was cut through by a Western-style avenue in 1916 had elaborate narrow alleyways, internal passages and gateways (Fig. 3).

About 68% of Indonesians build their own houses (Andriyanto, 2018). Jakarta's neighbourhoods are characterised by Chinese shop houses along the streets and kampong houses behind the streets. A large, self-built community (or kampong) consists of about 10 sub-neighbourhoods (Dewi, 2016). Influenced by Chinese tradition, and the land division from agriculture, elongated plots are relatively deep in parallel patterns enclosed in traditional blocks in Hanoi (Fig. 4).

Fig. 1 Urban networks in comparison: small scale and organic pattern of Sana'a in contradiction with the large-scale grid system of modern suburban in Baghdad. **a** Sana'a. **b** Baghdad

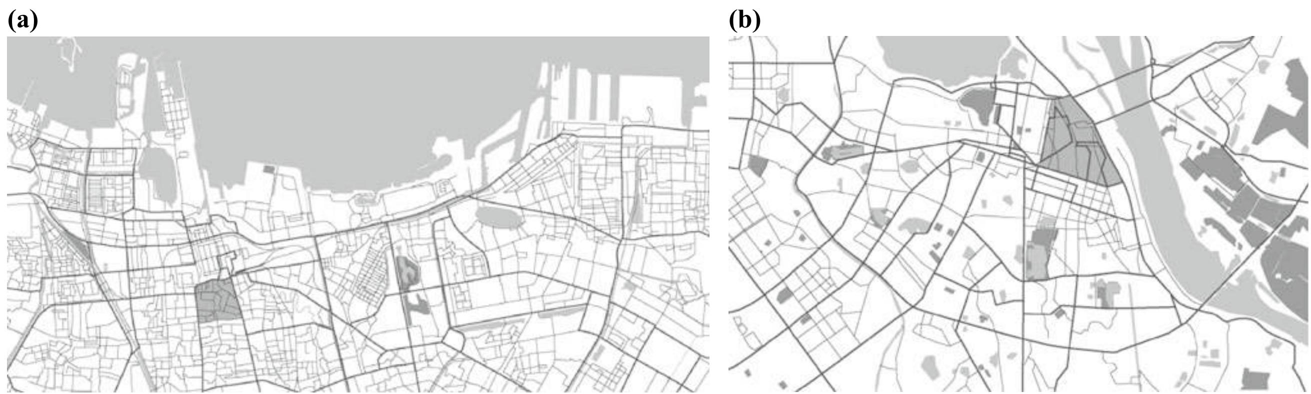

Fig. 2 Urban networks in comparison: the large urban sprawl driven by motor highways in Jakarta is in contradiction with Hanoi where the network is loosely distributed. The network is less dense compared with those in Sana'a and Baghdad, indicating a lack of formal infrastructure at the community level. **a** Jakarta. **b** Hanoi

Fig. 3 Comparison of street and blocks between the coherent pattern in Sana'a and the destruction of the old city in Baghdad by the modern avenue. **a**, **b** Sana'a (*Photo source* Posted by Mehri Petek in Pinterest https://www.pinterest.com/pin/32228953558297840/). **c**, **d** Baghdad (*Photo source* https://twitter.com/iraqipic/status)

Fig. 4 Comparison of streets and blocks: disorganised pattern in Jakarta in contradiction with the diversified urban fabric in and long and deep plot pattern generated by streets in the centre of Hanoi. **a**, **b** Jakarta (*Photo source* Dewi, 2016). **c**, **d** Hanoi (*Photo source* https://www.dailysabah.com/gallery/vietnams-hanoi-thecity-of-tube-houses/images)

3.3 Housing Form

Sana'a is marked by tall houses where several generations and branches of a family lived in one building (Fig. 5a). The first floors traditionally housed livestock. The top floor was the most prominent reception room of the house. Even today, houses are built by small contractors with craftsmanship that can last for millennia (Mehta, 2009). The buildings in the old city of Baghdad had two to three levels. The inner part of the house was protected against visual intrusion from the street or neighbouring buildings (Fig. 5b). The windows and balconies were projected from the street front side of houses, providing privacy (Alsadoon, 2020).

In Jakarta, kampongs *cluster* has houses that belong to informal workers. A small house consists of two floors (Fig. 6a). The ground floor is used for production, and the upper floor is used for the residence of craftsmen and workers (Andriyanto, 2018). Land plots in Hanoi are indeed very narrow, with some being only 2–3 m wide. These plots are a combination of three spaces: production, storage and dwelling houses (Kien, 2008). These townhouses were highly popular in the past and still represent a useful typological model for the construction of private dwelling in an urban setting (Fig. 6b1–b2).

4 Conclusion

Transformed from history, all these cities accommodate large populations characterised by informal economic and construction activities. The morphological patterns are inherited from history and therefore vary from modern ones. Their morphological characteristics are related but also different at all spatial levels. The urban networks are less organised, except for the grid pattern of modern plans in suburban Baghdad. Sana'a almost completed inherited the traditional urban patterns, and Jakarta is featured by modern highways stretching into large suburban areas. At the neighbourhood level, old Arabic cities are organised by religious and ethnic groups. In Hanoi, shopping streets are the dominant form and continue to intensify in terms of density. Jakarta has a mixture of housing types in all its super block communities. At the housing level, the type of tower houses in Sana'a differs considerably from the courtyard type of houses in Baghdad. Long and deep house types are continually maintained in Hanoi with increasing floors and heights to accommodate the population growth today.

The persistence of balance and conflicts between formal planning based on the decisions of the upper level of the

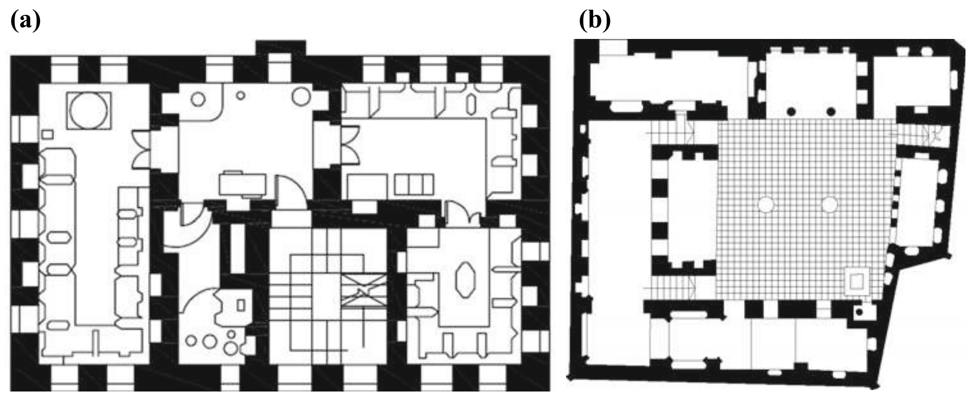

Fig. 5 Residential plans in comparison: small footprint tower houses in Sana'a leaving no room for courtyards are popular in houses in Baghdad. **a** Sana'a. **b** Baghdad

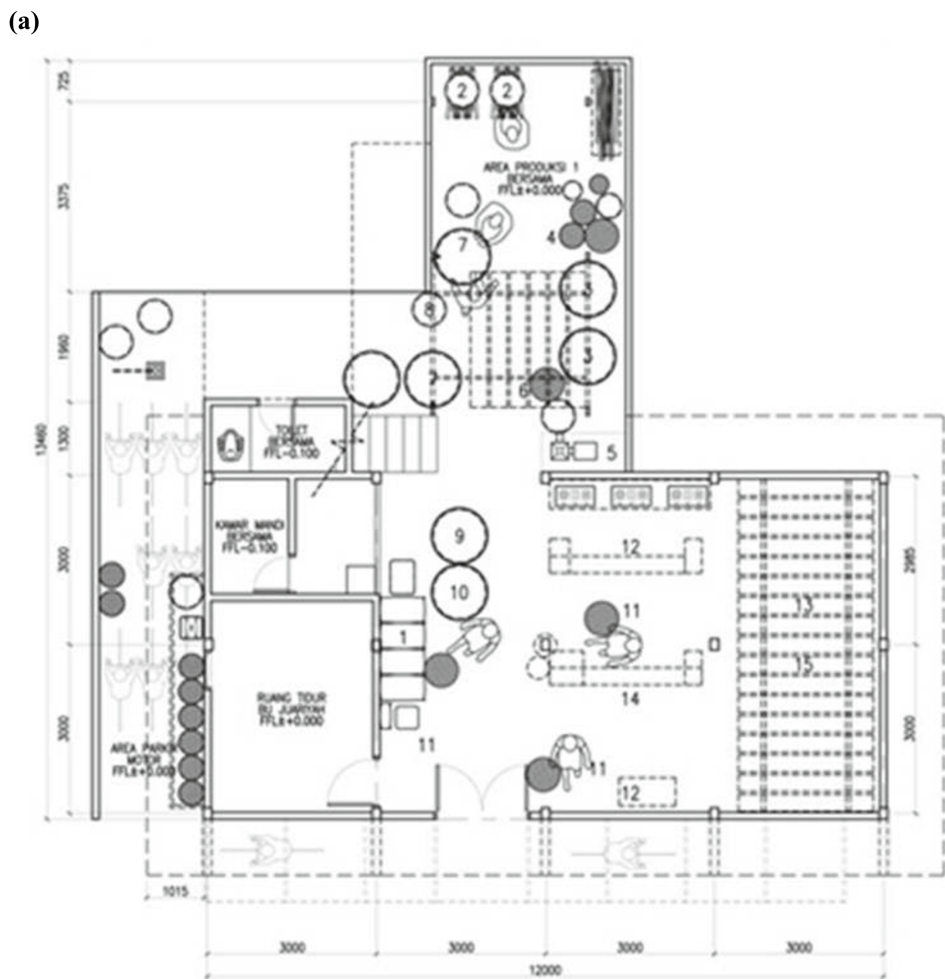

Fig. 6 Residential plans and sections in comparison: long and narrow shop houses constantly growing in heights in Hanoi in comparison with free-standing Indonesian kampong houses. **a** Jakarta (Drawing Source: Andriyanto, 2018). **b-1** Plan of a house in Hanoi.) **b-2** Section of a house in Hanoi

cities and informal construction that initiates and dominates at the lower levels provides a context for understanding and developing a new and alternative post-modernism theory on urban architecture. The coexistence of planned infrastructure and self-built communities in practice, which is largely ignored by existing paradigms, determines the future development and motivates further research.

Fig. 6 (continued)

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Connecting Cities Across Infrastructural Divides: A Summary of Case Studies from Self-Build Practices in Tshwane East

Paul G. Devenish, Denambaye M. Demba, Alexia Katranas, and Delani Kriek

Abstract

This short paper investigates opportunities to connect divided cities by analysing ways in which occupation practices operate alongside, subvert and potentially transform historic, and presently developing urban infrastructure divisions in Tshwane's eastern urban region. Urban spatial research analysing formal and informal built development and settlement patterns are presented in summary with a focus on areas around Mamelodi east and Moreleta Park in rapidly growing areas of Tshwane. These studies are outlined in greater detail in the extended version of this paper, 'Connecting cities across infrastructural divides: Case studies from self-build practices in Tshwane east' (Devenish et al. in J Environ Sci Sustain Dev 7(2), 2022). The case studies demonstrate conditions through which urban divisions of inequality are perpetually forming alongside service and social urban infrastructure developments. They also raise key questions relating to the urban spatial divides between formal building development economies, and informal urban occupations. The project also involves lifeworld and social network methods of analysis of self-build situations occurring along infrastructural intersections. These studies focus on the composition of building fabrics that actively attempt to circumvent issues of scarcity and unequal access to service and social infrastructure through the establishment of building interfaces that facilitate network opportunities. While this field work exposes many of the volatile situations that the urban majority experience on a perpetual basis, the primary aim is to reveal—from everyday spatial occupations—methods that can improve the network potential of built environments and transform their associated infrastructure systems.

Keywords

Urban segregation • Infrastructure space • Interfaces • Informality • Urban networks

1 Background

The Sustainable Development Goals (SDGs) recognise a universal right to basic resources, to water and sanitation, and to safe, resilient and sustainable cities (United Nations, 2015). Achieving these targets requires new ways of responding to urban occupation for contexts marked by extreme wealth disparity and unequal access to infrastructure. The challenge of transforming urban environments is complex—not only does it raise key questions about citizenship and the right to the city but it also highlights the urgent need for infrastructure that facilitates viable livelihoods for vulnerable inhabitants. In facing future city scenarios, in contexts of growing inequality, it is important for urban and architectural designers to examine systemic frameworks through which cities operate as they grow and perpetuate ingrained systems of infrastructural inequality.

2 Contextual, Theoretical Framework and Approach

These issues are made stark and legible in the many scars and divisions in urban landscapes in South Africa, the most unequal country in the world (World Bank, 2022). Colonial and apartheid planning practices entrench patterns of compartmentalisation, racial segregation and systems of

P. G. Devenish (✉)
Department of Architecture, University of Pretoria, Office 3-8, Building Sciences Building, Hatfield Main Campus, Lynnwood Road, Tshwane, South Africa
e-mail: paul.devenish@up.ac.za

D. M. Demba · A. Katranas · D. Kriek
Department of Architecture, University of Pretoria, Tshwane, South Africa

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resources and labour extraction (Maharaj, 2020; Wafer, 2020). Post-apartheid public and private developments see a perpetuation of segregations in the form of intra-compartmentalisation reinforcing conditions of scarcity with infrastructures primarily serving those with the financial means to access them (Mpofu-Walsh, 2021; Peres, 2015). Partly resulting from crime responses and partly a privatisation of service infrastructures; formal sector developments involve complex layers of barriers, surveillance and private policing that operate between boundaries of exclusion. Flows of material economy consumables move freely through infrastructures of freight warehousing, distribution and 'lifestyle' offerings alongside conditions of extreme poverty. Understood from the perspectives of Easterling (2016) and Ruby (2017) infrastructure spaces function in this way as the operating systems that regulate human and material flows in complex networks, often nested within macro systems of surveillance and power (Wafer, 2020). A useful distinction to make here is the relationship between 'hard' and 'soft' infrastructure as described by Winning (2010) and Matsipa (2017)—that is the physical services (hard elements) that operate through softer human and non-human interfaces and networks. Through the operating potential of these human-scale interfaces Easterling (2016) proposes a 'hacking' or infiltrating and subverting of mechanisms of power that can potentially reconfigure the internal operations of divisive city forms. Similarly, Simone (2004) and Pieterse (2009) analyse urban modalities through lifeworld mapping of socio-spatial systems that support human operations. Building on this Casakin and Valera (2020) pair occupation patterns with social network analysis methods to understand public space complexity. These layered processes consider various perspectives, activities, and objects in a network of interlinked nodes and are the foundation of an approach towards ecological urban futures. This leads to discussions of designing beyond objects; of systems of operation and processes of production; supported by the work of Till (2009), Bhan (2019) and Frichot (2019) who advocate for contextually adaptive and reparative urban integration approaches. This, combined with the ideas posited by Mehrotra and Vera (2018) recognises the synergy between static forms and kinetic actors as socio-spatial change enablers.

The methods and themes identified from the above literature are used in the reading of the case studies described below as a means to better understand the spatial relationship between marginalised communities and the resources that are meant to sustain basic fundamental rights.

3 Contextual Perpetuations of Infrastructures of Division

The case studies selected include self-build urban occupations that have developed in contexts exhibiting segregated settlement patterns in developing areas in Tshwane, namely Moreleta Park and Mamelodi east, see Fig. 1. Moreleta Park was designated under apartheid for low-density exclusive white occupation; and Mamelodi, was founded in 1945 and designated for the exclusive occupation by black persons. The analysis of conditions of segregation and accessibility in these two historically distinct regions allows for a comparison of conditions through which infrastructural segregation perpetuates and provides varied insights into ways in which infrastructural interfaces are established, occupied and potentially transformed.

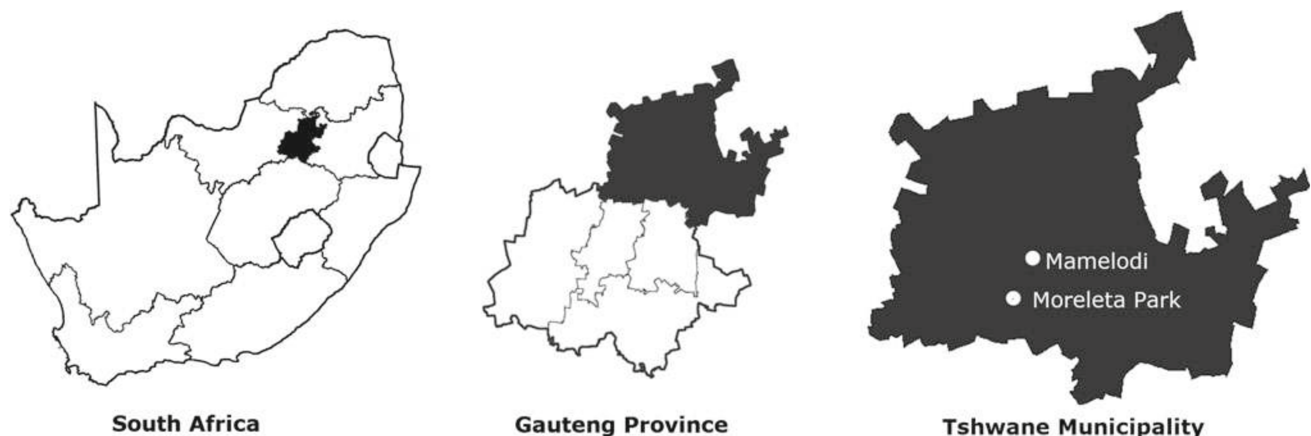

Fig. 1 Maps showing location of case studies in South Africa, Gauteng and Tshwane contexts

3.1 Spontaneous Urban Settlements and Gated Community Interfaces: Moreleta Park and Plastic View

Moreleta Park is analysed through the lens of socially constructed scarcity as a driver of divisive city planning (Calame & Charlesworth, 2009; Katranas, 2021). A residential area of gated communities on ecologically valuable land—the product of rapid sprawl since the 1990s (Landman, 2004)—Moreleta Park lacks the sensibility of scale and organisation necessary to secure resilience in its morphology (Peres, 2016; Katranas, 2021). Characteristic of a 'floating city' (Salat et al., 2011), large shopping malls and centralised amenities dominate the landscape yet remain monofunctional as static change-averse urban islands. Kriek (2021) highlights Solomon Mahlangu Drive as an important development spine where urban sprawl and urbanisation meet; and where a number of spontaneous urban settlements, such as Plastic View, are identified in leftover spaces between developments and along urban infrastructure servitudes. These characteristics are mapped as part of a socio-spatial lexicon, and are descriptive of soft and hard infrastructure interactions and entanglements, see Fig. 2.

Despite policy reform during the post-apartheid period lingering social constructs prevent the active dismantling of divisive urban forms. Informal settlements are regarded as obstacles to be removed by formal development actors. Plastic View is emblematic of this broader issue as evidenced in an open letter sent to the city from a local non-profit organisation that focusses on community development; it reminds the reader of various court orders against Plastic View and lists demands including "the breaking down of the shacks of undocumented residences to prohibit expansion at all costs" (Community Caring Forum, 2021). Moreleta Park is in this respect a context possessive of both the challenges and opportunities through which the future city can be postulated; where within a 3 km^2 area, infrastructural deficit meets excess. In the interrogation of these issues Kriek (2021) explores opportunities for repairing urban divisions, noting the urgent need for the static city to incorporate adaptive characteristics of kinetic occurrences in establishing urban resilience. Katranas (2021) builds on this through a series of explorations of adaptive interface scenarios exploring soft infrastructure subversions of conditions of segregation, see Figs. 3 and 4.

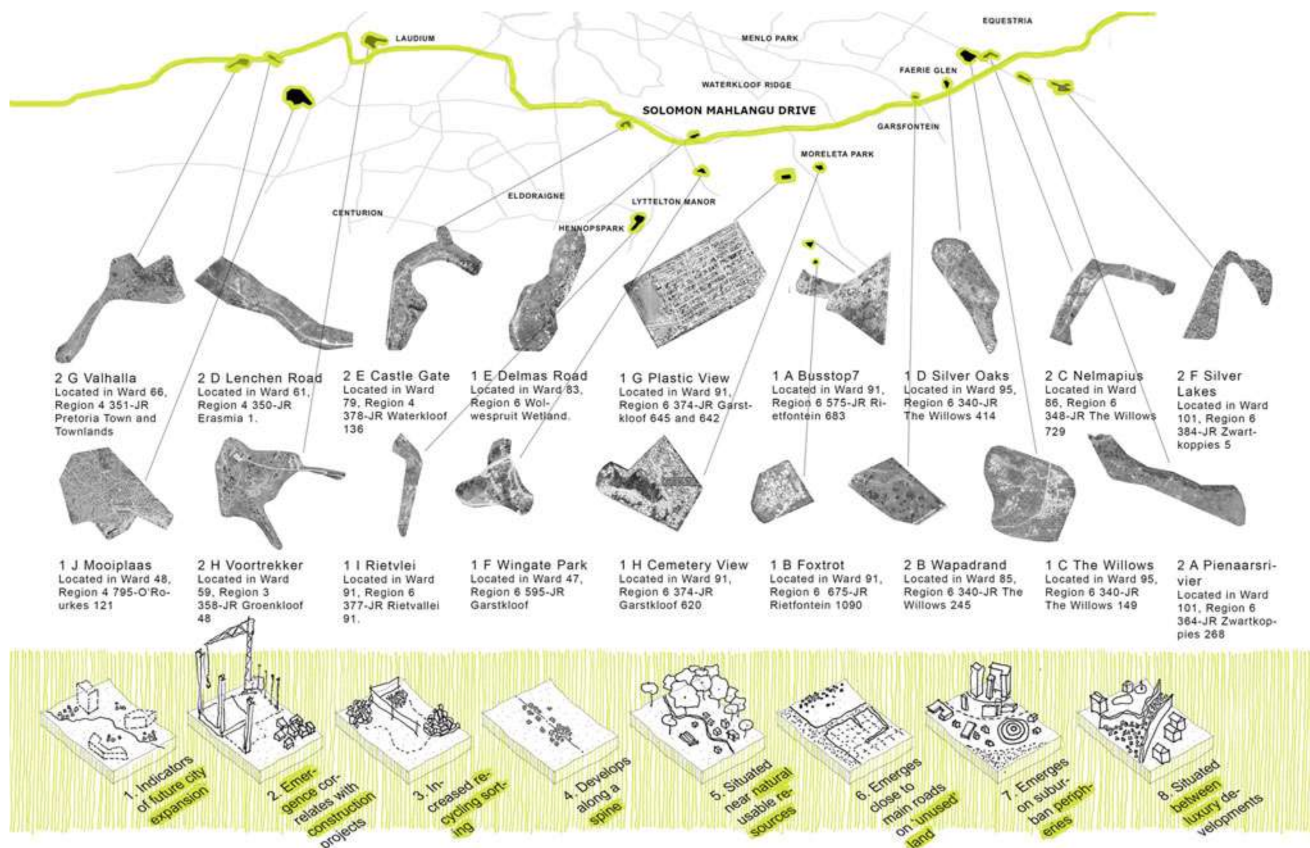

Fig. 2 Spatial catalogue of spontaneous urban settlement developments in Moreleta Park region along Solomon Mahlangu Drive (Kriek, 2021)

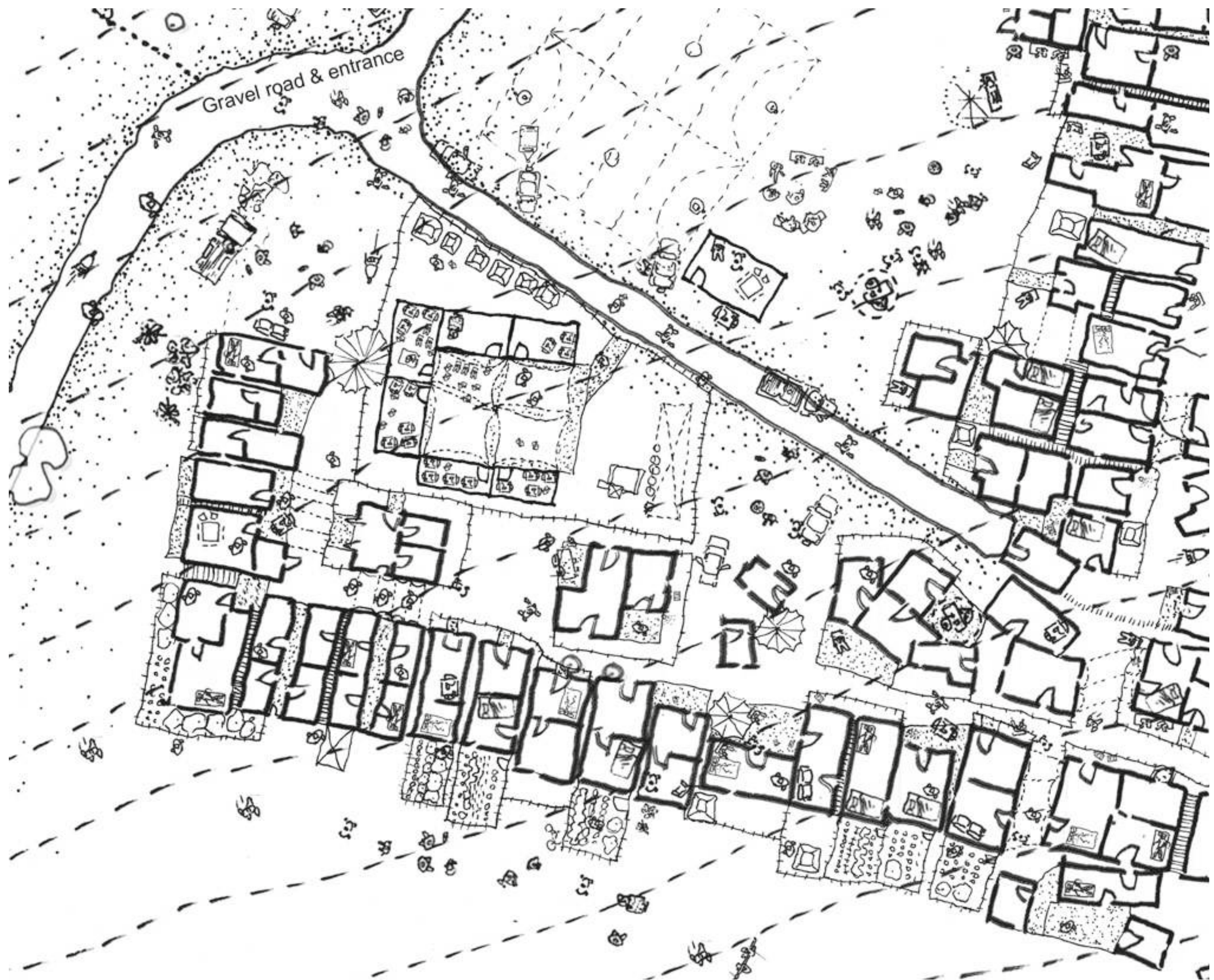

Fig. 3 Occupancy plan of an area of Plastic View showing Sunday morning activities and street interfaces (Katranas, 2021)

3.2 Social Infrastructure Interfaces in Mamelodi East

During the peak of apartheid a number of displaced black populations were relocated to Mamelodi (Breed, 2012). Infrastructure development implemented in this period focused on the construction of housing, with limited transport routes to white-owned urban centres. These scarcities alongside the restriction of public and recreational spaces are understood as mechanisms for controlling movements and preventing gatherings (City of Tshwane, 2005). In the post-apartheid period, the housing shortfall has seen a focus on subsidised state housing; the resultant limited focus on non-housing services has led to a lack of maintenance or development of public open spaces (Denoon-Stevens & Ramaila, 2018; Mc Connachie & Shackleton, 2010). Where state or NGO-developed social infrastructures have been implemented they often stand as monofunctional giants following the established segregated grain of the region, disconnected from community dynamics.

Building on the theme of kinetic potential, Demba (2021) examines the accessibility of social infrastructure as well as methods by which people build alternative socio-spatial networks along movement routes adjacent to a stormwater and access servitude, see Fig. 5. These ad hoc inventive means are developed through informal economies, and community organisations (De Beer et al., 2020). This spontaneous dynamism takes inspiration from existing elements and brings either alterations, additions, and/or different meanings to them to satisfy communal needs (Demba, 2021). This is similar to the approach in Moreleta Park where formal infrastructure is considered static while informal, community-based activities represent kinetic urban life. Stated from a different point of view, the varied collective

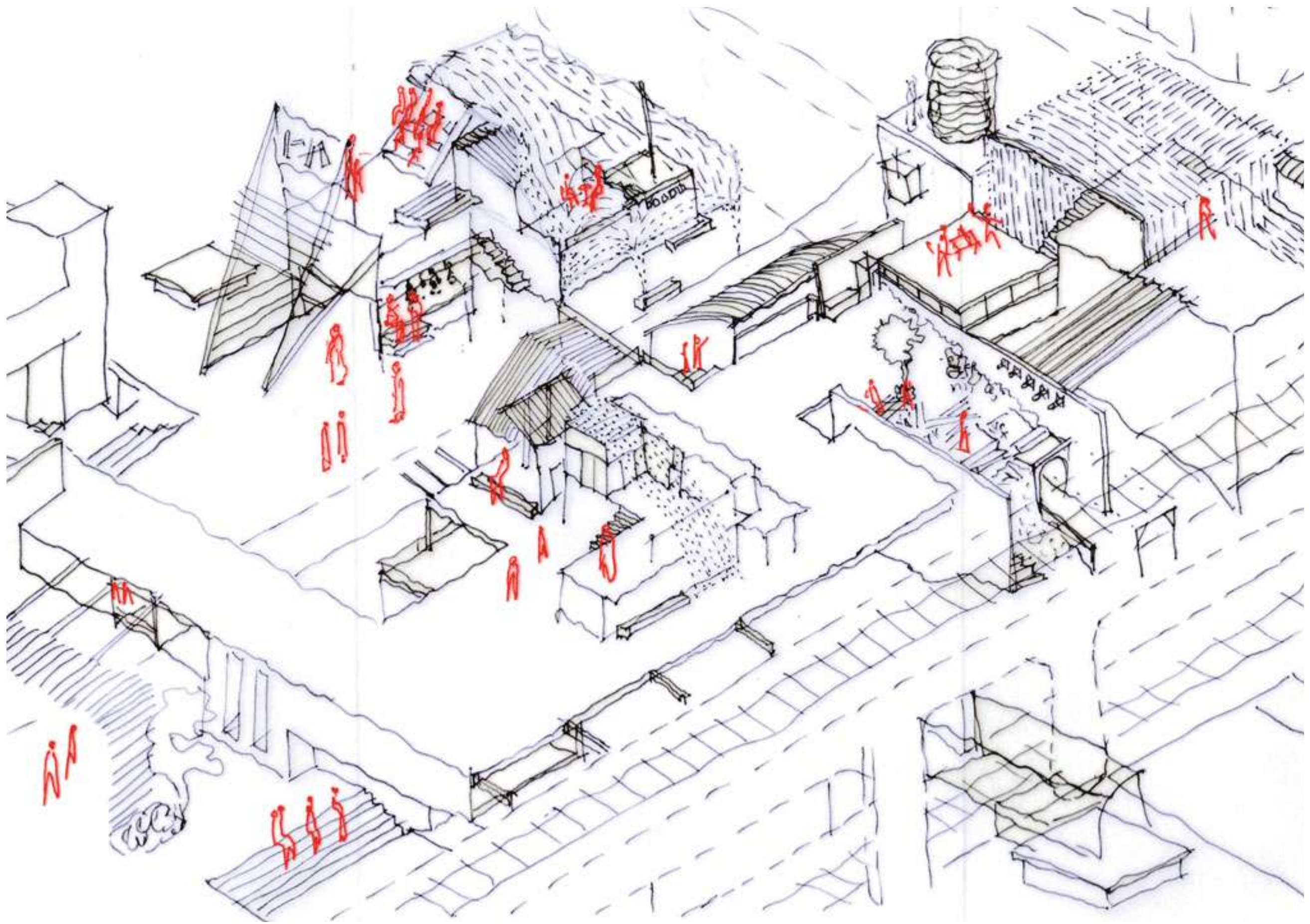

Fig. 4 Illustration of design iterations exploring the connection of divisive urban infrastructure—hypothetical future scenarios based on field observations of building practices in Plastic View (Katranas, 2021)

actions, patterns of occupation, and interconnections create systems capable of participating in a sustainable development for future cities (Demba, 2021; Katranas, 2021; Kriek, 2021).

4 Outcomes and Contributions

Through a process oflife-world representations of urban occupations, the case studies reveal systems of socio-spatial networks operating as infrastructure devices attempting to circumvent conditions of scarcity and exclusion. By illustrating spatial settlement practices alongside divisive urban infrastructures the project identifies key occurrences in Tshwane that are attempting a repair and recalibration of divisive infrastructure. South Africa's urban fabric is constituted of vast networks of civil systems; stormwater services, roadways, parks, servitudes, railways and other public owned property. By examining scenarios that challenge infrastructural exclusion this project identifies and tests opportunities for reconceptualising urban forms to reimagine them as shared common elements that have multiple sides and potential functions that can connect rather than divide. The future development of Tshwane and possibly other regions of Gauteng can evolve by fully revealing, representing, analysing and understanding the variables and relationships that make up the public realm.

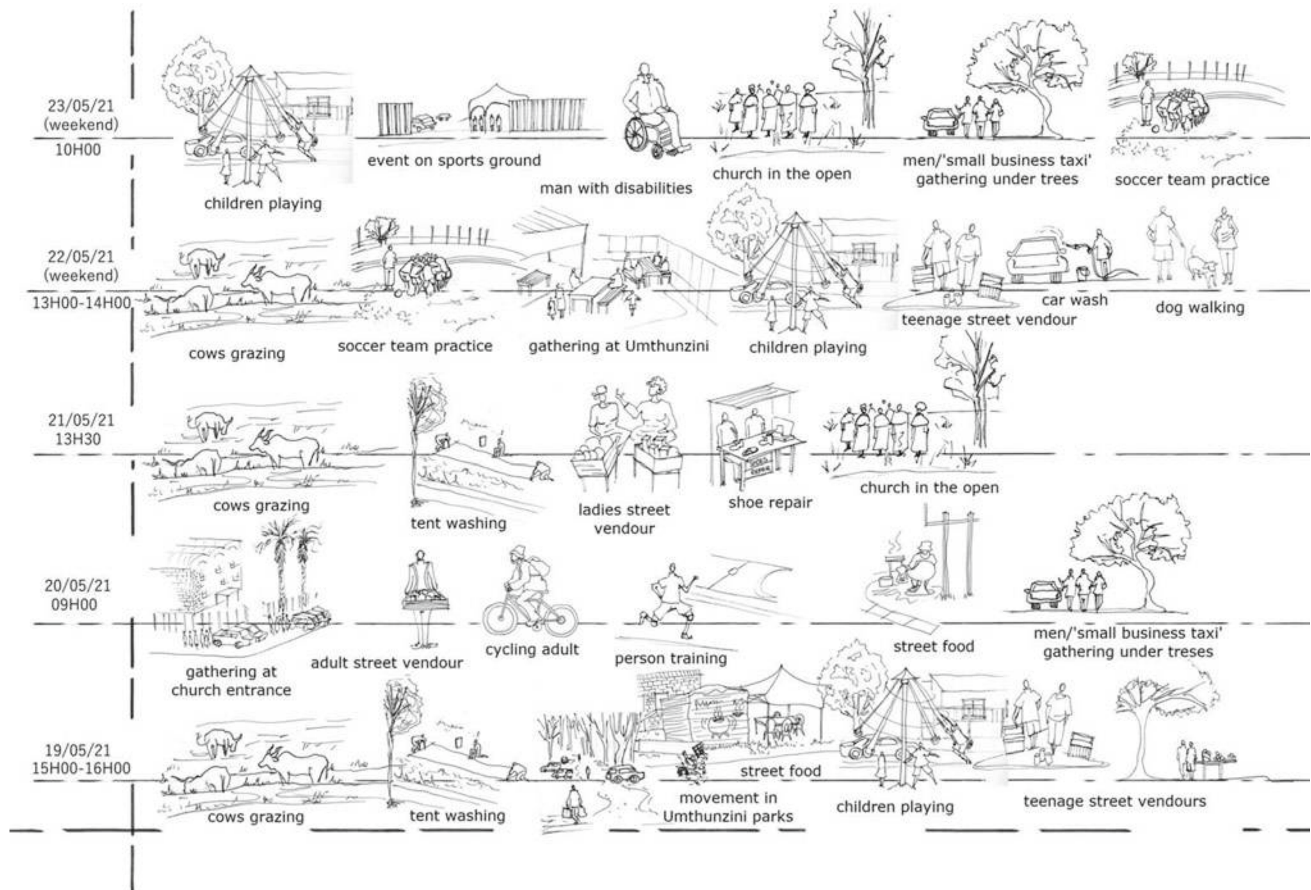

Fig. 5 Activity mapping along open space network in Mamelodi east (Demba, 2021)

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Dérive Today: Artistic Research and the City Space

Stefan Winter

Abstract

In the artistic avantgarde of postwar Paris, Ivan Chtcheglov introduced the *dérive*, drifting through the body of the city, as a procedure of artistic research to take note of the "atmosphere" of built environments and of their effect on our ways to live and live together. Mapping the city in a whole new way, the situationists captured psychogeographic contours and showed the city space as subdivided into "unities of ambiance". This analytic side was linked to the projection of an architecture that would house a new active and cohesive society where citizens would engage in creating "situations"—temporary settings for a shared collective time. Translated into our contemporary context, *dérive* and *psychogeography* are expanded, and along with other artistic research practices, enable new ways to explore, understand, and map the city, and also to envision and project the urban habitat. This potential of artistic research becomes apparent as the city is no longer considered primarily as a built environment, but rather as a habitat, in which the question "how will we live together" is constantly negotiated. In this shift, artistic research, architecture, and urban design enter into novel collaborations with a common aim of ecological, economic, and societal sustainability.

Keywords

Dérive • Psychogeography • Artistic research • Urban design • Sustainability • Societal cohesion

I. After World War II, various artistic groups in Europe tried to build elements of a new culture as the old ways to live and live together had been discredited or simply lost their persuasive power. In 1953, Ivan Chtcheglov, a member of the Lettrist International, walked a segment of Quartier Latin over and over again, unfolding what he called *dérive*, drifting through the body of the city, as a way to take note of the "atmosphere" of buildings, streets, and places. Guy Debord later wrote "The sudden change of ambiance in a street within the space of a few meters; the evident division of a city into zones of distinct psychic atmospheres […] the appealing or repelling character of certain places—these phenomena all seem to be neglected. In any case they are never envisaged as depending on causes that can be uncovered by careful analysis."[1] As Debord stated, *dérive* is a way of artistic research that yields a specific kind of knowledge—and yet has no repeatable method, since it leaves itself to the terrain and thus constellates itself time and again in different ways.

Exploring the atmosphere of sites leads to "mapping" the city in a whole new way: In *psychogeography*, the city space shows currents, vortexes, pivotal points, axes of passage, and is revealed as subdivided into "unities of ambiance". The built environment is a manifestation of our current culture, and if we conceive new cultural structures, new concepts to shape the city space will go along with this. A new architecture, Chtcheglov claimed, can express nothing less than a new conception of space, a new conception of time, and a new conception of behavior.[2]

The analytic endeavor of *dérive* was linked to a projective side on which the artistic research motion constantly sketched what could exist in place of what stands. All these designs were developed from the background of the social utopia projected by the situationists. Their analysis of their contemporary culture revealed what Debord called *The society of the spectacle*, which in passively consuming

S. Winter (✉)
Film University Babelsberg, Potsdam, Germany
e-mail: s.winter@filmuniversitaet.de; stefan.winter1@wits.ac.za

School of Architecture and Planning, Wits University
Johannesburg, Johannesburg, South Africa

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attitudes and orientations engendered an isolated and frozen time. The situationist counter draft aimed at a society in constant transformation, where citizens actively engage in creating "situations"—temporary settings for a shared collective time. And accordingly, the situationist engagement opted for an architecture that can change its aspects and appearance, for spaces that have manifold meanings and are open to novel inscriptions. This built ambiance would then set free other social attitudes and practices in a cohesive society. The situationist approach, however, did not lead to any concrete cooperation with architecture and urban design.

II. In retrospect, *dérive* and *psychogeography* show their historical limitations. As the set-up in which they were developed, changed, these artistic research approaches cannot simply be continued, but rather need to be translated in order to work for contemporary city spaces.[3] In this translation, *dérive* and *psychogeography* get enriched, as they use new media such as film and video, employ augmented, mixed and virtual reality, and explore the auditive dimension of the city space.[4] In all these extended forms, *dérive* and *psychogeography* are able to disclose the social, cultural, and economic structures of an urban habitat in their lifeworld-dimension: that is, in a dimension between objective data as they occur in scientific fields, and a merely subjective experience. In its various disciplines, artistic research helps us to understand the "soft infrastructure" of the city, the fine network of cultural habits, orientations, practices, and identities, which is interlocking—or not interlocking—with the "hard infrastructure": the buildings, the utilities, and so forth. But artistic research is also devising the re-use of buildings and creates scenarios for future city spaces.

The potential impact of artistic research in urban development becomes apparent at a time in which the self-understanding of architecture and urban planning is changing. In an increasingly widespread tendency in the Global North and South, the city space is no longer primarily considered as a built environment, but rather as a habitat, in which the guiding question of the Venice Architecture Biennale 2021—"how will we live together?"—is constantly negotiated. Architects and urban planners do not just conceive, design and build, the Biennale's curator, Hashim Sarkis, said, but they are first of all "convenors and custodians of the spatial contract". In this shift, novel collaborations between artistic research, architecture, and urban design are taking shape with a common aim of ecological, economic, and societal sustainability. These three dimensions cannot be advanced in isolation. We will not arrive at ecological sustainability as long as we live in a linear economic system that by its very structure requires a continuous depletion of resources. And we will not achieve to build a sustainable economy as long as we don't move towards a cohesive society, in which heterogeneous groups negotiate and re-negotiate their shares and commons in mutual respect.

III. Three concrete projects can serve as a guide to show the impact that artistic research can bring to sustainability. In its ecological dimension, *The Watershed* opened up the question of how we deal with the element of water.[5] At the latest since the Club of Rome study on the *Limits of Growth* in 1972, it became clear that the way we deal with the environment urgently needs to change. But despite all the adjacent efforts, the necessary pace of transformation has not been achieved—the scientific insights just did not connect to our lifeworld experience. From its nucleus in artistic research, *The Watershed* opened a lifeworld dimension in which the element of water was considered in the depth of its meanings and in the aspects we deal with it. From there, the project could differentiate the problem into questions of water use and reuse, access, shortage and pollution, and from there, an impetus arose to ask what sciences and humanities found out, what tech development can do, and what kind of political governance is needed to approach solutions to the water problem.

In the economic dimension, a circular economy tends to re-define buildings. In this process, artistic research in its site-specific forms can play a major role, as it is able to recollect the history of space and to open it up to future meanings. In this hinge function, the installation *Hansel and Gretel* fostered the re-coding of the Armory Show in New York, which served as a military building for 150 years.[6] This history was condensed into an overhead surveillance ambiance with thermal cameras, sensors, and drones. Marked areas on the floor invited people to hold poses for a while and to see their images appear that would slowly recede into darkness. The visitors playfully experimented with their images and interacted with each other, and the building did swing into its new function to be a centre for the performative arts.

The *Hotel Yeoville* project shows how artistic research can induce societal cohesion.[7] Terry Kurgan and a team of artists and architects researched the ways and habits of the people in Yeoville, a working-class suburb in Johannesburg, where micro-communities of immigrants and refugees from other parts of the African continent live. In tune with their internet café culture, an exhibition in a public library offered a space where people could narrate their lives and expectations, take photographs and do short videos. Presenting this material, the project encouraged and empowered people to

come to their own voices—a sense of common interests, of belonging and mutual appreciation emerged.

In the current state of affairs, projects like these are isolated, distributed points, but in the movement that they typify and concretise, they will have the potential to connect, and to create a transformation wave.

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Exploring the Impact of Colonial Legacies in Urban-Related Identity and the Will to Participate in Urban Decision-Making: A Case Study of Morocco

Noussayba Rahmouni and Izuru Saizen

Abstract

There is a clear absence of public participation in urban decision-making in Moroccan cities. While the systematic marginalization of public opinion in formal planning legislation is regarded in the literature as the main factor for this absence, this research proposes a complementary explanation. It suggests the consideration of the role of the uncertainty of the Moroccan urban-related identity in the weakening of the collective will to participate. Using the reinterpretation of Moroccan planning history, complemented with interviews with Moroccan academics and planners, this research explores how colonial legacies contributed to creating a physical as well as an institutional division between the Moroccan society and its urban context. This research argues that the different urban changes under the colonial administration have weakened the average Moroccan's urban-related identity, and have thus debilitated the collective will to participate in shaping urban Morocco. It explains that any attempt at bridging these divisions has to go through a reevaluation of the Moroccan planning history and a reconstruction of a shared urban-related identity.

Keywords

Colonialism • Public participation • Morocco • Urban-related identity • Urban history

N. Rahmouni (✉) · I. Saizen
Kyoto University, Kyoto, Japan
e-mail: rahmouni.noussayba.44e@st.kyoto-u.ac.jp

I. Saizen
e-mail: saizen.izuru.4n@kyoto-u.ac.jp

1 Introduction

In the global planning landscape where people are increasingly considered as main stakeholders in the urban governance system, Morocco is still struggling to include its population in urban decision-making. Since its independence, administrative and constitutional reforms were carried out in an effort to empower civil society. Nevertheless, its role remained limited to consultation and information dissemination, with an absence of invited spaces for participation in decision-making (Iraki & Houdret, 2021). While there is no question about the direct impact of the formal exclusion of public opinion, it is still important to understand how the Moroccan society has become increasingly disconnected from its urban context and how it has lost its collective will to participate.

Interviews (2020) have shown that even when municipalities create platforms for people to participate, turnout remains low. Most Moroccans seem to have little knowledge on how the urban space is produced and even less knowledge on their entitlement to an opinion about its development. This is particularly interesting when put into the historical urban context of Morocco, as people had a substantial influence on micro-level decisions in pre-colonial times (Radoine, 2010). This begs the question of how the Moroccan society transformed, in a matter of five decades, from a society with a strong urban-related identity and a deep attachment to its cities, to one that is quite detached from its built environment and with little interest in how it is made. The answer lies in the transformation of the collective understanding of the urban phenomenon during the colonial era. Through the reevaluation of Moroccan planning history and by using data from six interviews conducted in June-July 2020 with academics as well as urban planners and officials working in different Moroccan institutions, this research attempts to make the case for the impact of the physical as well as institutional colonial legacies on creating

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and deepening the division between Moroccans and their built environment.

2 Morocco's Colonial Experience

France's colonial project was presented as a virtuous "humanitarian" mission to "civilize" colonies (Jelidi, 2008). Accordingly, the protectorate's planning policies served this mission through creating new "European cities" away from the indeginous cities as examples of modernization and civilization. This led to the implementation and enforcement of a *physical* division within the urban order. While the new cities were presented as the future of development; original cities, or Medinas were romanticized and presented as "medieval relics" (Holden, 2007). This policy locked Medinas in time and left them at the margin of development. In terms of decision-making, urban planning was a top-down practice that was undertaken by French specialised services (see Bessac-Vaure, 2016) based on the experimentation of western urban theories on Moroccan territories (see Wright, 1987). People were rarely formally included in urban decisions. Their alineation created a deeper *institutional* division between the Moroccan society and space. Meanwhile, many rural areas were considered to be "useless" by the protectorate administration and were thus systematically marginalized (Aït Hamza, 2012). Ultimately, Moroccans were pushed to migrate to new cities in search of better work opportunities. After independence, the newly formed Moroccan government adopted the already existing colonial structure (M.E.L, 1961), and carried out the same colonial policy of housing the increasing urban population using the same legislative frameworks (Rharbi, 2005) and resorting to French technical and administrative expertise (Philifert, 2010).

3 Discussion: Colonial Legacy and Urban-Related Identity

While urban identity was largely linked to the imageability and legibility of a city, urban sociologists and psychologists have introduced the symbolic meaning-related aspects of the environment that constitute the urban-related identity of city dwellers (Lalli, 1988). This urban-related identity plays an important role in the individual's differentiation from "the other" which creates a "sense of we" that makes one more committed to their environment. Accordingly, it is proven that a "highly-identified" person is more likely to be active in urban decision-making (Winter & Church, 1984, as cited in Lalli, 1988). Furthermore, Belanche et al. (2017) found that the impact of urban-related identity can be translated into behavioral intentions through personal and social norms. In other words, the personal and social institutions of meaning imbued in society make space for how much urban-related identity plays a role in the individual's commitment to the city.

The urban-related identity of Moroccans in pre-colonial times was closely linked to their bond with the Medinas as a familiar urban context in line with their lifestyles and values. However, the "rebranding" of the Medina from a vibrant living center to a traditional fabric to be preserved and protected has caused a rupture in this link. Additionally, the laws which prohibited any kind of development inside the Medinas alienated people from their own context by preventing them from acting on it. The impact of this new dynamic on the relationship between people and cities can be traced in two aspects. First, the focus of the colonial administration on creating an *identity of* the Medina as an authentic architectural heritage resulted in the neglect of how people developed their *identity to* the Medina. In other words, the focus on the image of the Medina came at the expense of how people identified to it. Secondly, as people were in constant search of better economic opportunities and better living conditions, they were forced to migrate. Accordingly, by locating development benefits in the new cities, the protectorate planning system controlled the value attributed to each part of the built environment. Ultimately, While the new cities thrived, Medinas' economic activity reduced and their role was confined within the limits of their aesthetic value.

Furthermore, as Moroccan migrants were made to settle in urban fringes, they would have a hard time appropriating a space from which they have been excluded in all aspects. Additionally, they were seldom informed about urban decisions. Eventually, their lack of knowledge of the European space limited their potential for resistance and constrained their rights to participation. Even after independence, and due to the lack of communication between authorities and the people (Interview, 2020), the average Moroccan citizen rarely knows that she or he is entitled to participate in the decision-making process behind the making of cities. Planning regulations are simply too incomprehensible for law enforcers and populations alike, and they are seldom adaptable to the independent Moroccan context (Interview, 2020). Consequently, their ignorance of the rules and why they are made yielded a certain disdain for them (Interview, 2020). Ultimately, the popular frustration with an incomprehensible context translated through the resistance against the "colonial way" through different urban practices like overstepping planning regulations (Interview, 2020), or withdrawing from the urban space altogether.

4 Conclusion

The lack of participation in urban decisions in Morocco is a direct consequence of the negligence of civil society in decision-making processes. Lacking *the will* to participate in the Moroccan society, on the other hand, is another topic in need of more research. Overall, it seems that there has been a rupture between the Moroccan population and pre-colonial planning practices that have changed the collective understanding of urban space and how it is made. However, there has never been a complete rupture with centralist colonial urbanism that can potentially reorient the collective perspective towards active participation. In this sense, administrative and legislative reforms are undoubtedly paramount in encouraging people to participate in urban development. However, it is also important to raise awareness around urban issues and reconstruct the Moroccan urban-related identity so people can identify to their shared space and potentially be willing to actively contribute to it. This could be achieved through the creation of a common narrative where the different urban histories of Morocco are acknowledged and reconciled, and where the diversity and richness of the Moroccan urban-related identity could be a source of pride and an incentive for a more inclusive future. In this sense, including the "European city" in the Moroccan urban identity remains to be the main challenge that must be overcome in order to bridge the divide and move forward.

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Indi-African Geometric Expression in Marabastad: Reforming Ruptured Urban Fabric in Tshwane, South Africa

Kirti Kanak Mistry and Amira Osman

Abstract

South Africa is home to several diasporas. This country has a deep history of colonisation and various reasons leading to migration to this land over time; many people were driven here due to destitution and/or slavery, the minority being of Indian origin. To this day, Indian communities struggle to integrate their presence and lack a sense of belonging nationally and within the larger context of Tshwane; Indians were stripped of their cultural practices and voices. However, their resilience is evident in rituals, annual celebrations, and festivities such as Diwali. Apartheid segregation relegated different racial groups to various locations beyond the city. Marabastad in Tshwane hosted Indians together with the natives, Muslims, Asians, and coloureds. Consequently, the Group Areas Act of 1950 ruptured the collective cohabitation of multi-ethnicities, forcing segregation and ripping the cultural tapestry that existed in relative harmony at the time. Studying geometry provides a medium to engage within space for healing and reform the spatial experiences within the city at a micro-level. This paper investigates how geometrically informed spatial reformation facilitates cultural and identity reclamation through an architecture devised from site-specific geometric fusions. This fusion is explored through applying principles that acknowledge previous means of manifestation, such as rituals, religion, social systems, and forms of expression, further allowing Indi-Africans to re-integrate their presence and belonging engagingly and profoundly.

Keywords

Culture • Geometry • Identity • Indi-African • Spatial reclamation • South African

1 Introduction

Geometry is a device universally known and applied (Jahanmiri & Parker, 2022). It is employed to map the constellations, plan cities, and extend beyond dwellings into the very nature of life. This device is considered stringent. However, it is flexible. Geometry is used by the various ethnicities that reside in Marabastad. The Ndebele, Muslims, and Indians' use of geometry is hereby studied to gauge the common ground upon which geometry may be adapted to rehabilitate the dilapidated fabric of the precinct.

History demonstrates the extensive network of Marabastad eradicated due to the Group Areas Act of 1950 (Figs. 1, 2, 4), which forced segregation and relocation of people, rupturing the amalgamated cultural fabric across South Africa, including Marabastad (Naidoo, 2013). It is noted that cultural cohabitation gave rise to various unique collations.

This paper covers theoretical and historical applications of geometry and explores practical applications in the form of a case study applied within Marabastad as shown in Fig. 3.

1.1 Contextual Position

Historically, Marabastad faced several challenges, leaving the location scarred. Does the positioning of Marabastad allow for geometrically influenced built environment

K. K. Mistry (✉)
Candidate Architect at Paragon Architects South Africa, Researcher at the Tshwane University of Technology, Sandton, South Africa
e-mail: mis3kk@gmail.com

A. Osman
Architecture and Industrial Design, Tshwane University of Technology, Pretoria, South Africa
e-mail: osmanaos@tut.ac.za

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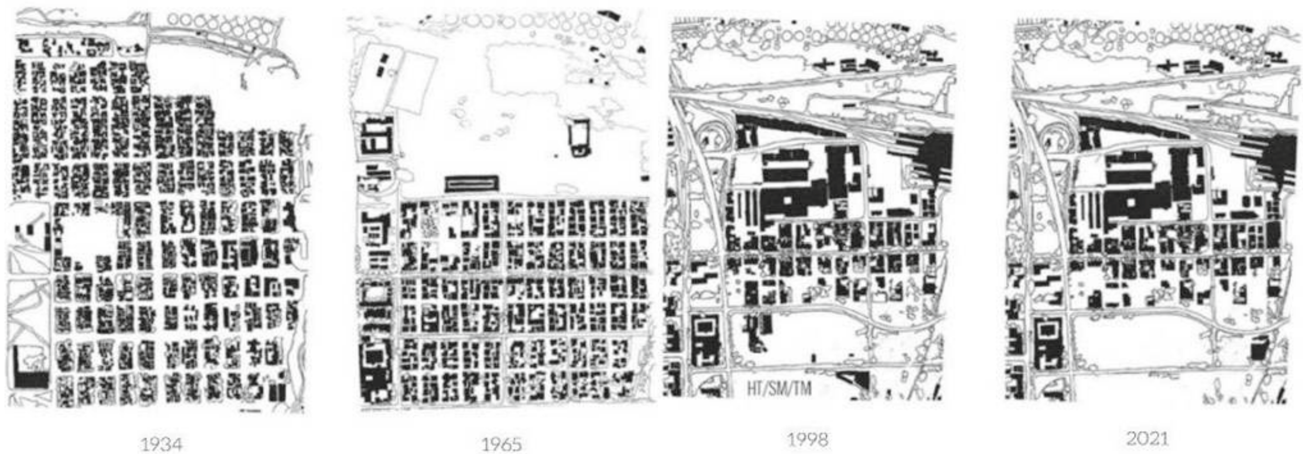

Fig. 1 Density degradation after enacting segregation policies (Tayob et al., 2002, p. 50)

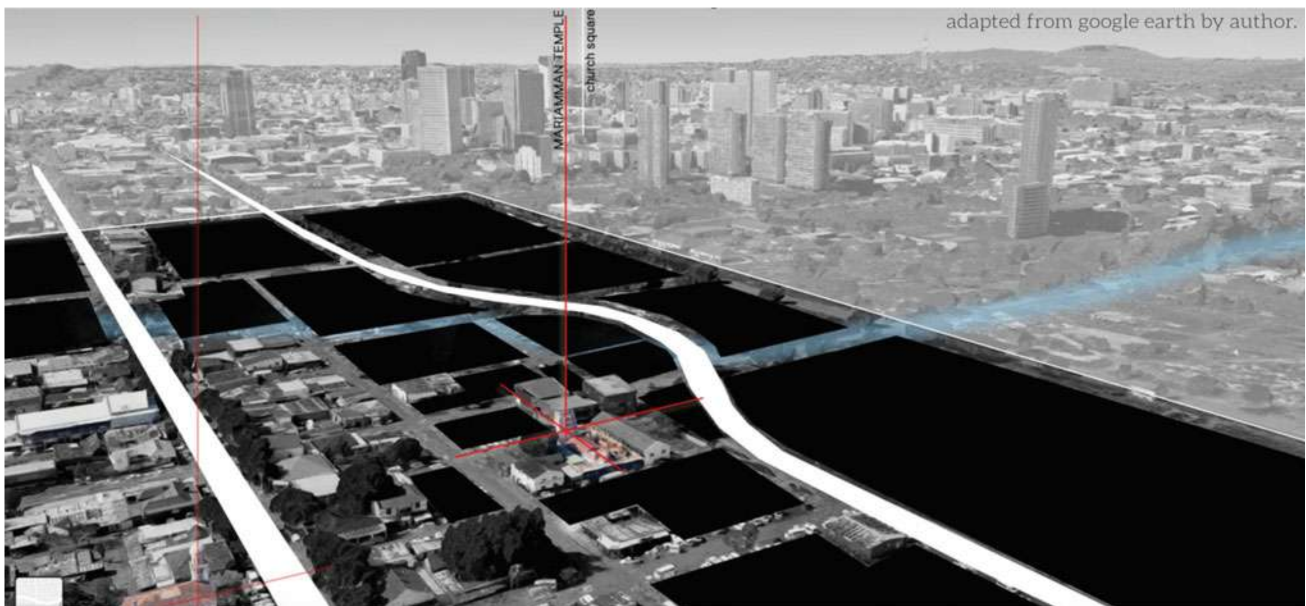

Fig. 2 The extent of desecration upon Marabastad in relation to the city centre, by author, 2021

interventions that may help spatially reconnect the environment in a socially engaging and meaningful manner? May this allow for further reclamation by the various cultural groups therein? Would applied geometry facilitate healing in its people and the environment from historical desecration and uprooting?

Geometry is a powerful tool (Salingaros, 2012, p. 13) with the ability to influence physical and metaphysical dimensions within people. Historically, geometric templates guided the process of spatial arrangements and portrayed various approaches one could consider. This paper explores such possibilities and their possible manner of interpretation.

1.2 Cultural Engagements

Hindus, extensively, use a geometric device (Fig. 5) known as the Vastu mandala. This device guides spatial positioning, which is believed to enhance the user's ultimate well-being (Gangwar & Kaur, 2016). Traditionally, within a temple's hub, the boundaries are fractal impressions that draw one towards the temple's core (this being the position of the divine). These fractal impressions are repeated on a vertical plane (the gopura and shikaras), expanding fractality three-dimensionally.

Muslims have scriptures documenting the approach to designing motifs pertaining to Islam. A firm understanding is

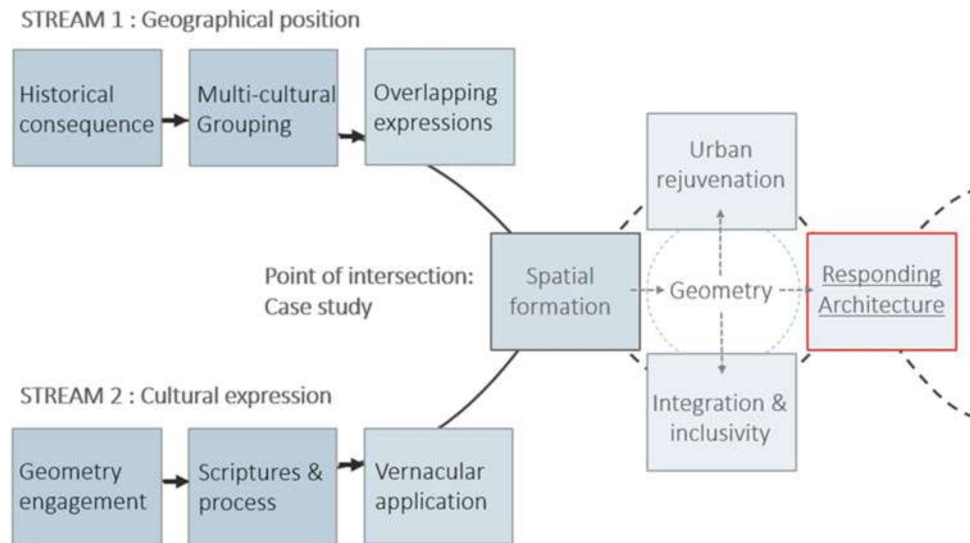

Fig. 3 Methodology guiding the research, by author, 2021

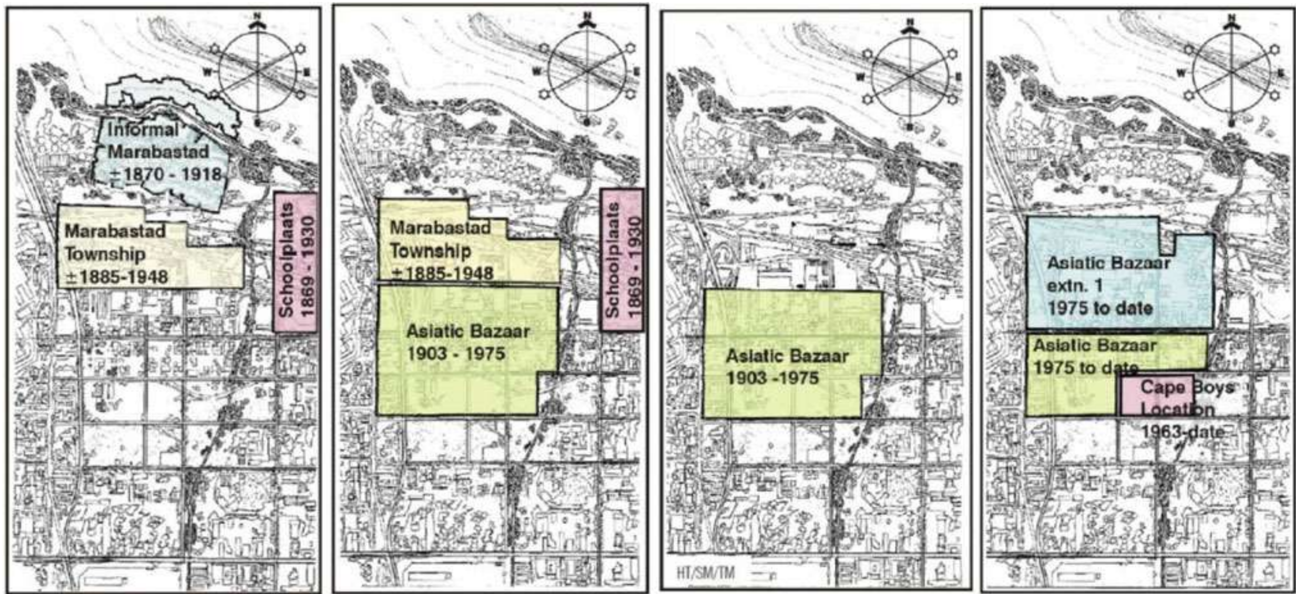

Fig. 4 Racial mapping within Marabastad (Tayob et al., 2002, p. 42)

that one is encouraged to contemplate their higher self when perceiving intricate details. These applications are implemented in places of worship (Bonner & Kaplan, 2017), particularly on the journey to the prayer room. A patterned template is created by dividing, overlaying, extrapolating, and isolating geometry from a composition (Fig. 6), creating intricate motifs of spiritual expression.

In South Africa, the Ndebele are known for their artistic use of geometric detailing (Fig. 7). Initially, geometry aligned with social class classification before acclimating as a medium to discreetly communicate during periods of oppression. The artistic expression later incorporated colour and became the very identity of the Ndebele beyond social status and vocation. The art uses primary geometric forms and is synonymous with South African identity.

1.3 Geometry

Fractality refers to the part as a whole and the whole as a part (Dutta & Adane, 2018). There is room for macro and

Fig. 5 Geometry used to conduct prayer in the Mariamman temple (PTL, 2019)

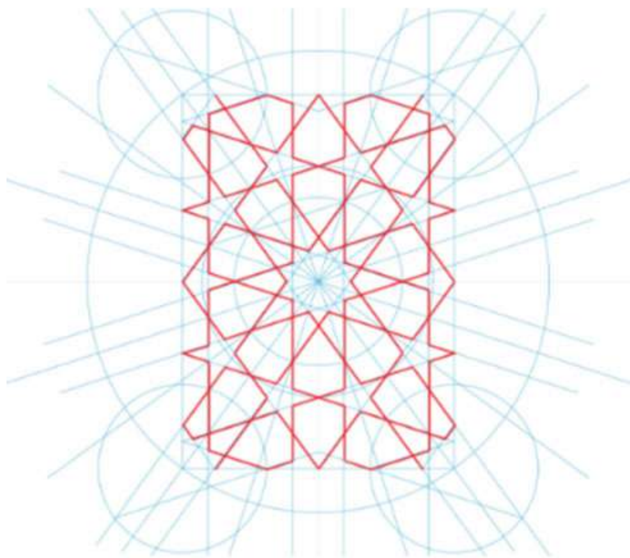

Fig. 6 Creating a tapestry for spiritual space (Ali, 2020)

microscale intervention through fractal applications within Marabastad that can revitalise the dilapidated state of the hub. When said spaces are in particular disarray, geometry, as a medium, may establish a sense of harmony and cultural integration (Figs. 8, 9).

Research demonstrates that temples are designed in a fractal manner (Dutta & Adane, 2018). Fractality breathes room for several activities aiding the Hindu livelihood, further becoming the physical embodiment of the philosophy of expanding the divine and cosmos within framed space (Fig. 10). A devotees' journey may be explored in relation to the pilgrimage to a temple. The point is the central position (the room of the divine), the line representative of the journey (the visual linear axis visualised in Fig. 11). With oscillation (through circumambulating the temple), one draws points of reflection that bring one closer to the divine (achieve spiritual transcendence).

1.4 Historical Preface

Dutta states (2018), "Fractality creates unimaginable forms and patterns for creating new possibilities", not only does this speak to social and societal impressions but also spatial interpretations and formation. The Mariamman temple provides an opportunity for an alternative integrated cultural expression. This temple is iconic (Swart, Proust and Culture, 2020) to many ex-habitants of the vicinity and is proclaimed a monument by the South African Government (Fig. 12). The temple is selected as an origin point for an architectural intervention where geometric concepts may be applied. The geometry of this temple incorporates core

Fig. 7 Ndebele Art, by Dr Mahlangu. (The Melrose Gallery, 2020)

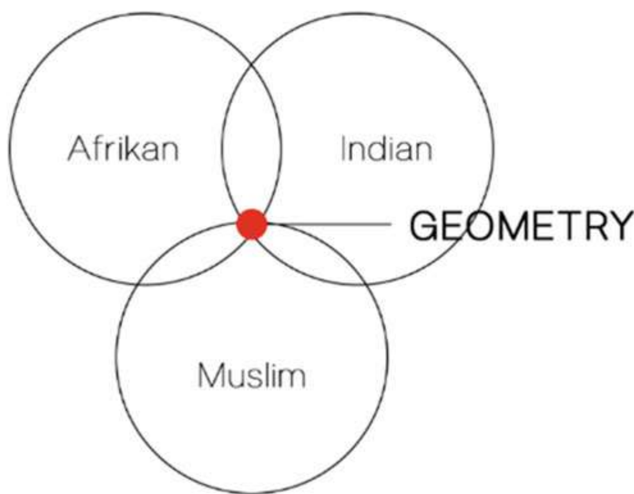

Fig. 8 The common between the cultures, image by author, 2021

principles such as linear axis, repetition, fractality, and symmetry (Figs. 13, 14).

1.5 The Case Study

This template is underpinned by the temple's existence, using it as a means to amplify the spatial quality of the spiritual realm beyond the temple.

The template is formulated by positioning fractal forms (Figs. 14, 15, 16), extending patterns from the temple, and repeating them to generate spatial opportunities and is further shaped by site conditions.

From the larger template, a pattern is identified. Overlaying the pattern at fractal scales defines spatial qualities, thus shaping the form (Figs. 17, 18). This pattern is then studied on a microscale application (Figs. 19, 20).

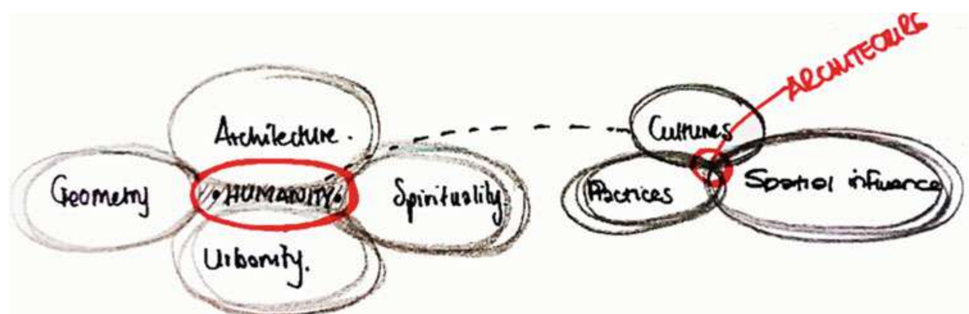

Fig. 9 The author's hypothesised linkages between architecture and people, 2021

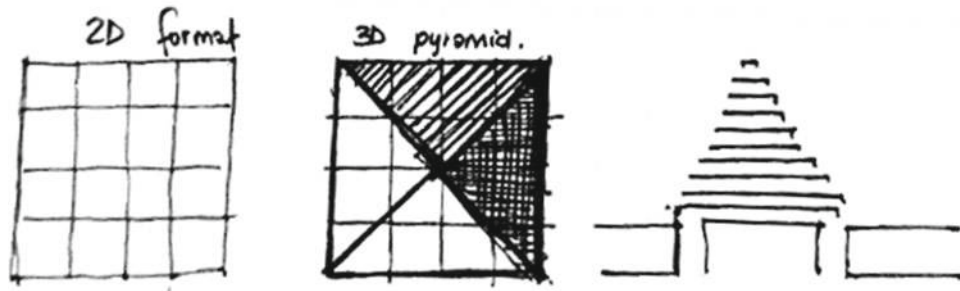

Fig. 10 Visualisation of the mandala, pyramid, and gopura of a traditional Hindu temple, by author, 2021

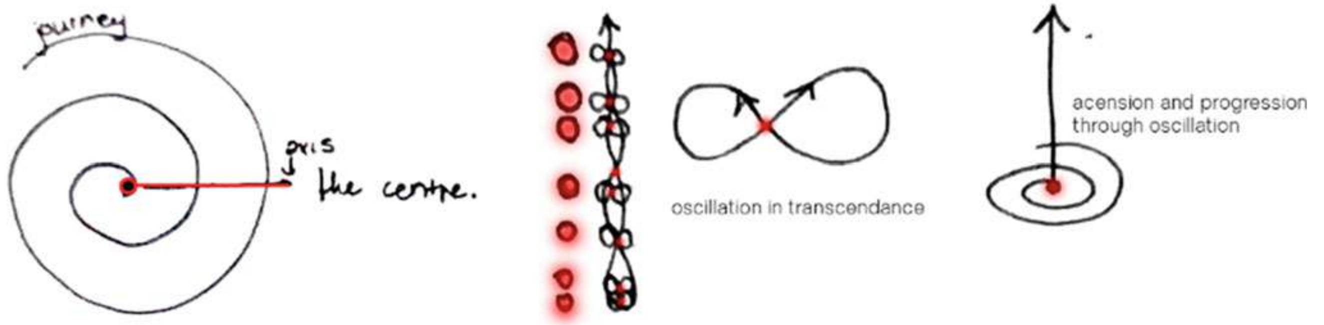

Fig. 11 The cosmic journey, by author, 2021

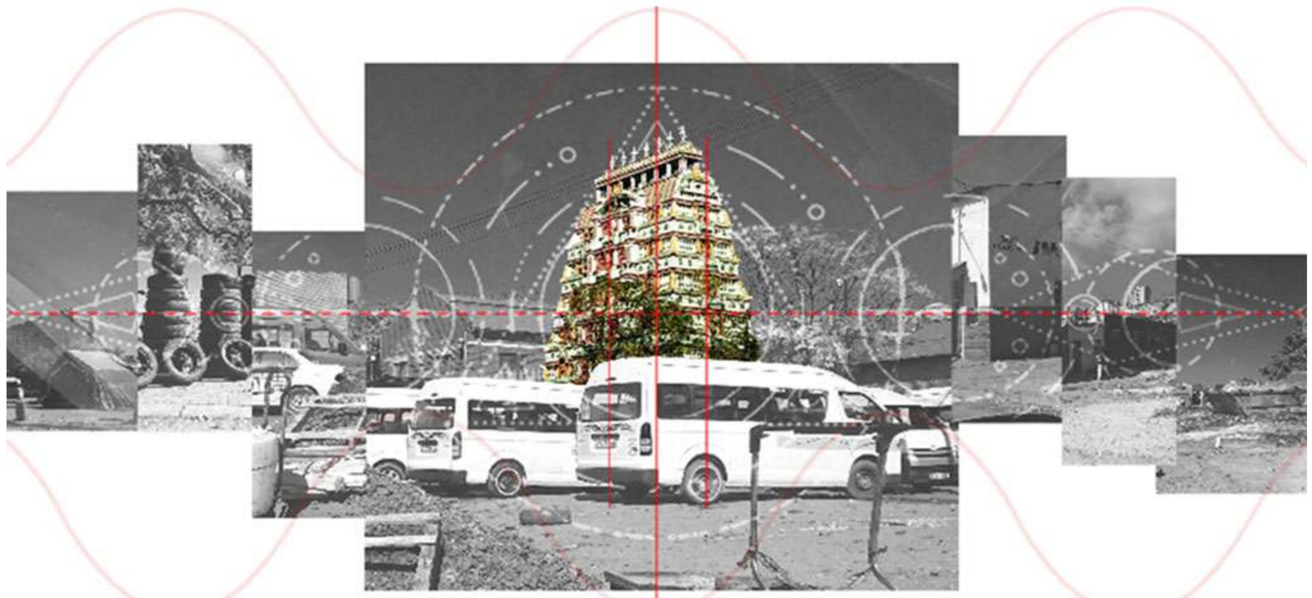

Fig. 12 The Marabastad jewel, by author, 2021

Fig. 13 The Mariamman temple has various uses: circumambulation of the divine on the left and large-scaled festivities on the right., image by author, 2021

Fig. 14 The architectural language within Marabastad, image by author, 2021

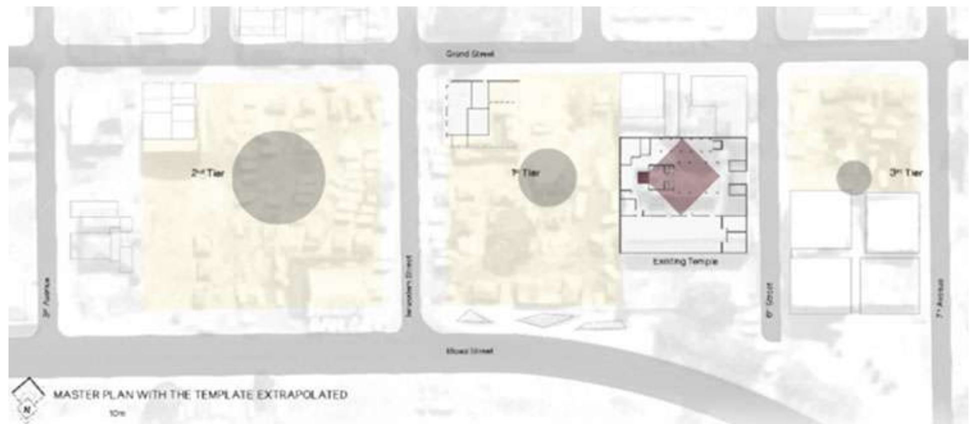

Fig. 15 The proposed location for study in relation to the temple (shown in red), by author, 2021

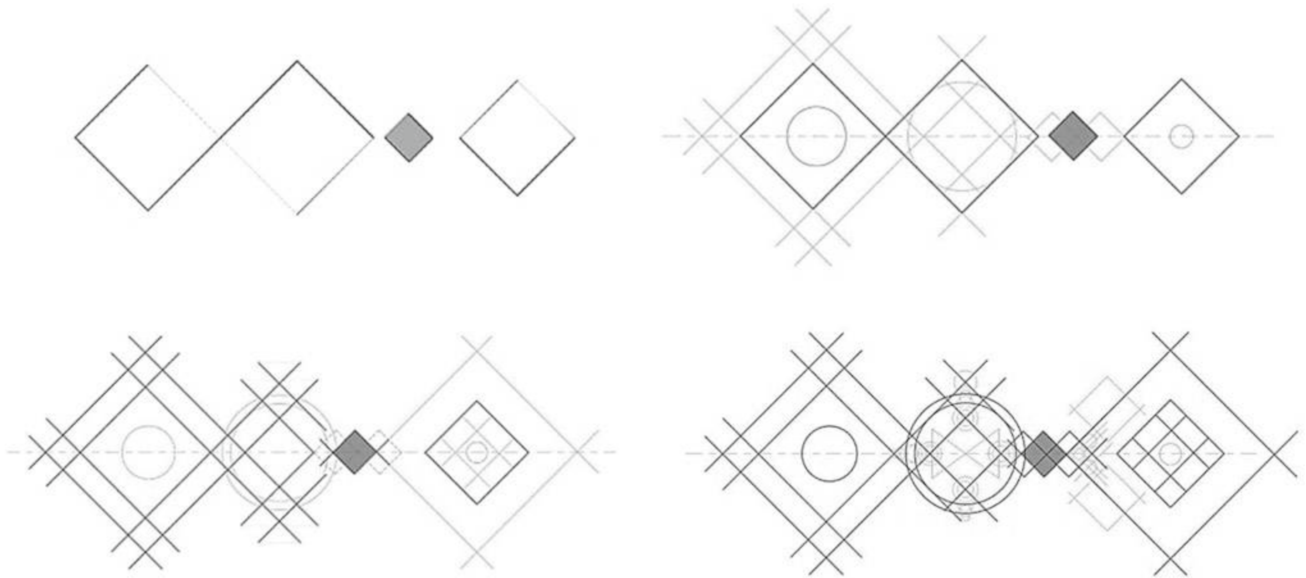

Fig. 16 The macro-scale template in response to the identified tiers for this study, by author, 2021

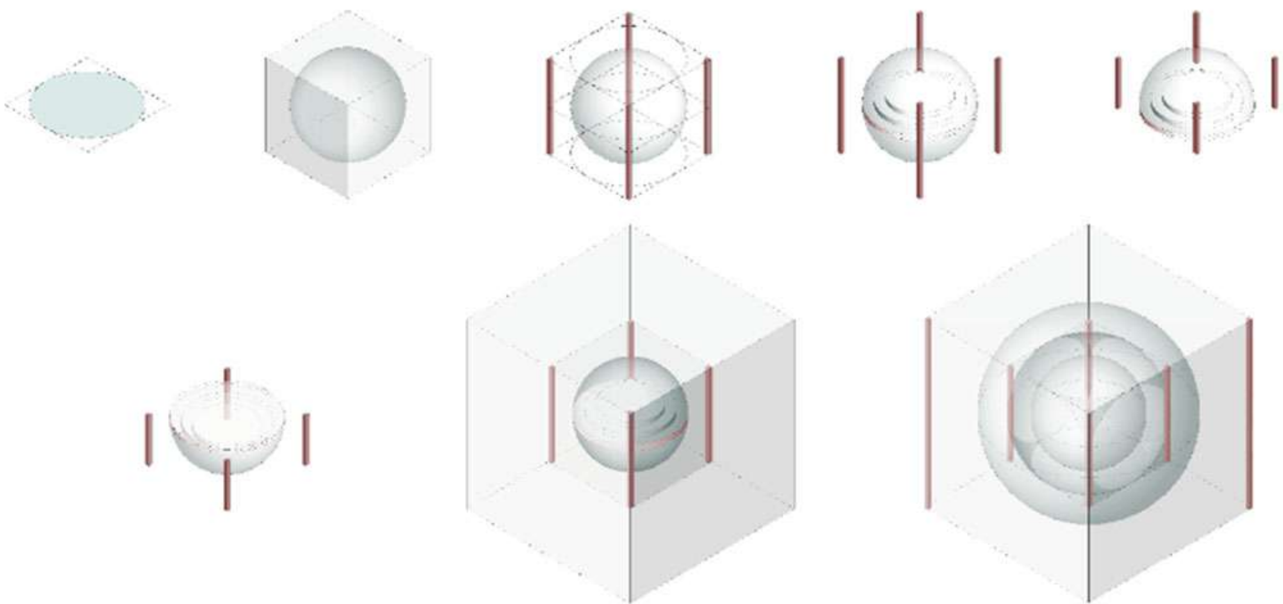

Fig. 17 Fractal expression speaking to microscale study by the author 2021

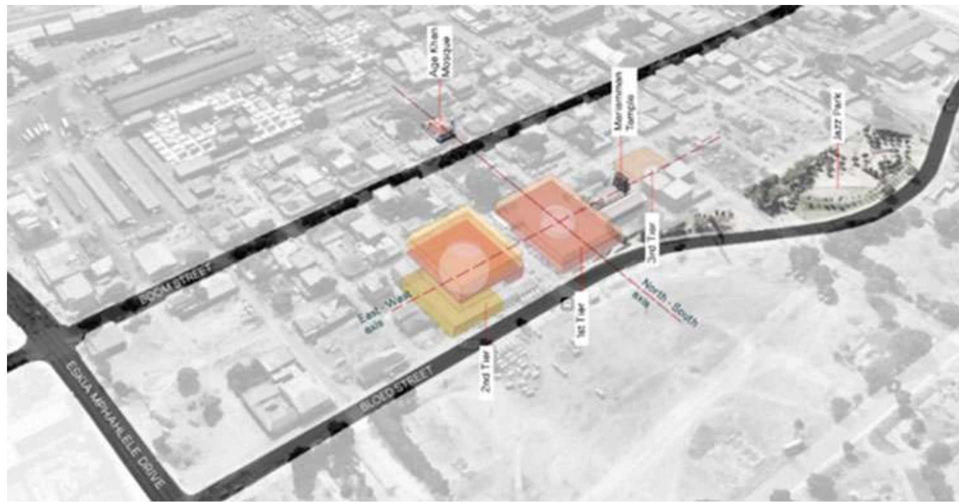

Fig. 18 Proposed location, with the form extent and cores in relation to the temple, by author, 2021

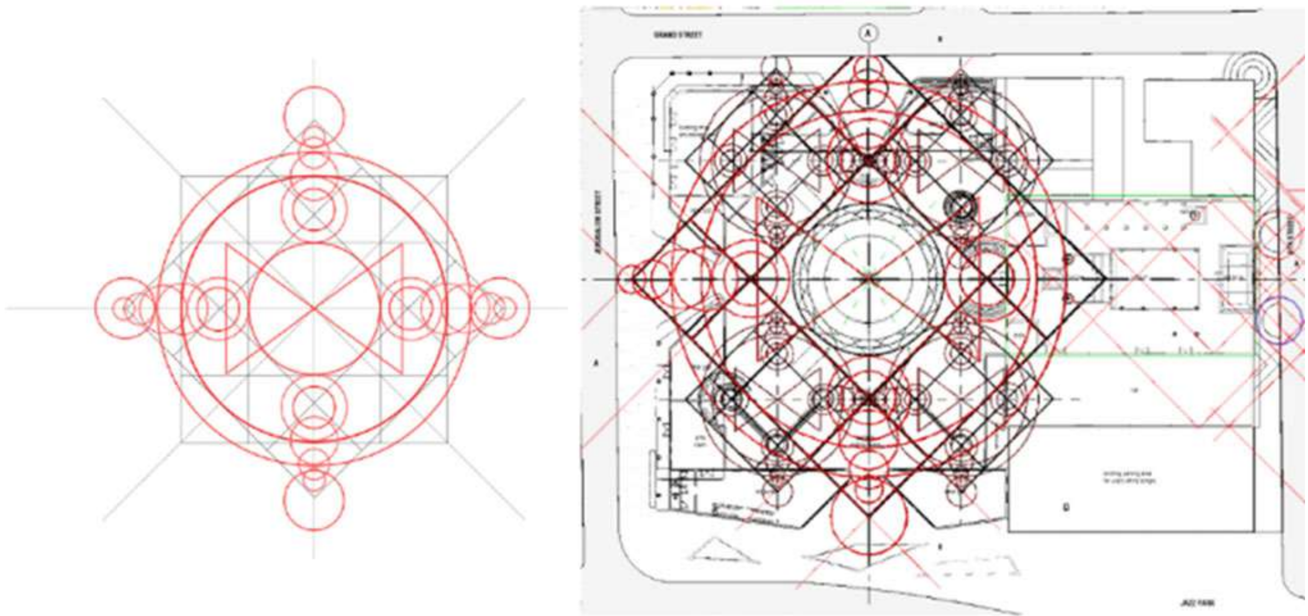

Fig. 19 Left: Extrapolated pattern. Right: The microscale pattern overlayed at varying scales by author, 2021

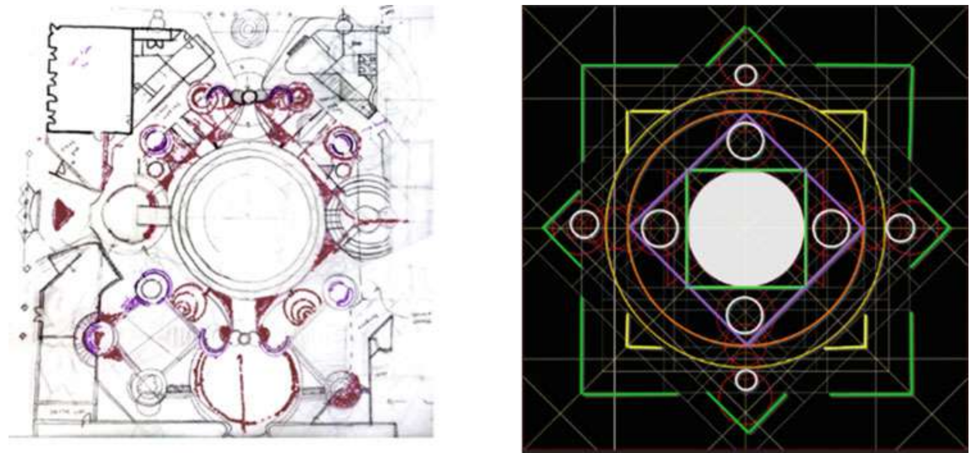

Fig. 20 Left: Interpreting the pattern. Right: The pattern reflecting an alternate arrangement, by author, 2021

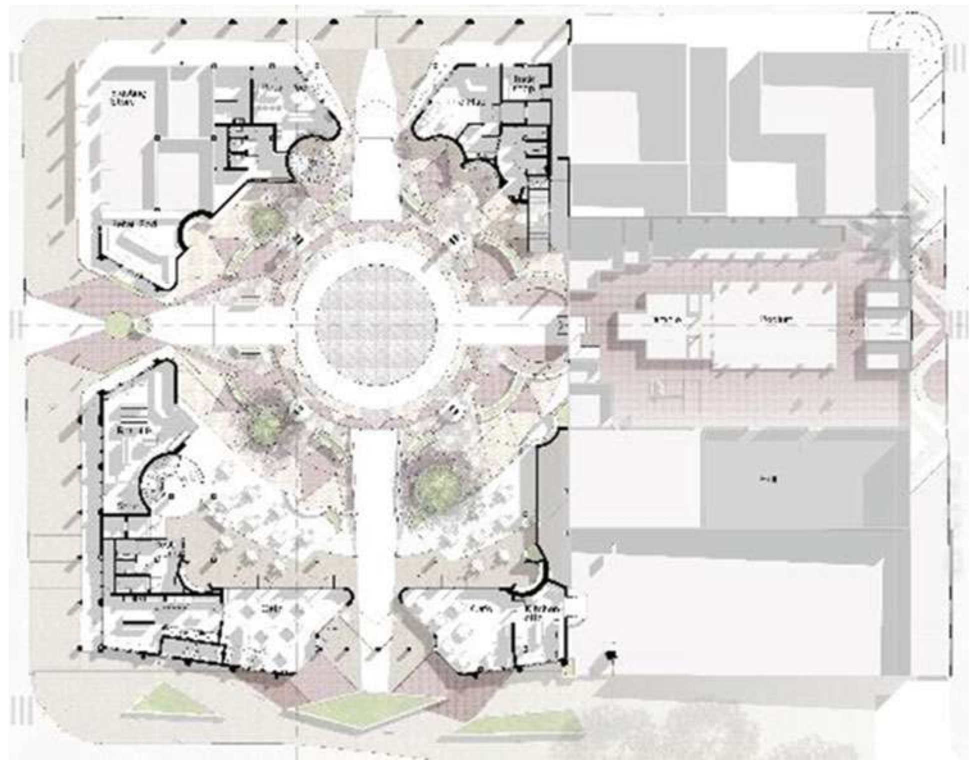

Fig. 21 The physical envisioned form after interpreting the pattern upon the surface, by author, 2021

2 Conclusion

The study revealed geometry as a possible mediator for spatial arrangements and inclusions (Figs. 21, 22, 23). It reframes interpreting interstitial connections guided by the geometric template and translates into a physical form, encouraging users to engage in space.

Geometry has the potential to align with socio-cultural practices, religious beliefs, and contextual cosmic applications. It can function as a medium to facilitate cultural expression and provide space within which all forms of celebrations (Fig. 24), healing and sharing may occur. Geometry may be a catalyst for racial and spatial pattern rehabilitation, previously disrupted and upended by divisive spatial policies. The authors have proposed to harness geometry's power and re-envision an alternative spatial reality for a specific context with unique historical significance.

Fig. 22 The template informing proportions and displays rhythm, by author, 2021

Fig. 23 Detail-scaled applications relating directly to the cultural presences within Marabastad. Translating detail into form heralds multi-cultural expression providing an opportunity to rejuvenate space engagements by author, 2021

Fig. 24 Pattern informs a dynamic and engaging fabric reflecting cultural expressions by author, 2021

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Containing the Human "Tree" in South Africa—What is the Perfect Size?

Zaakirah Iqbal Jeeva, Trynos Gumbo, and Juanee Cilliers

Abstract

On the 19th of May 2022, the South African Minister of Finance, Mr. Enoch Godongwana acknowledged that 88 of the 256 municipalities in South Africa were dysfunctional and consequently their local economies were struggling. In light of this, these municipalities were to be "taken over" and managed by National treasury and not the local municipality. One could state that effective governance is dependent on the efficient structure and composition of the municipalities as much as the administration of the region. In light of these sentiments, the paper interrogates the manner in which municipalities are formed, demarcated and establishment in South Africa in order to determine if the area delimited are manageable. The paper analyses the 88 municipalities listed as dysfunctional in terms of their 2016 delimited areas and their related population. It found that at least 81% of the 88 municipalities had a population density below 100 people/km^2. It further found that the sparse development and low population density of these municipal areas hindered meaningful economic investments and social development. Consequently, the paper suggests that smaller municipalities might provide a solution to creating more functionally efficient municipalities with stronger economies. The paper provides insights around challenges associated with delimitation and how they could be ameliorated in South Africa.

Keywords

Municipalities • Delimitation • Population density • Dysfunctional • South Africa

Z. I. Jeeva (✉) · T. Gumbo
Department of Urban and Regional Planning, University of Johannesburg, Office 6062, Sixth Floor, John Orr Building, Beit and Siemert Street, Johannesburg, 2028, South Africa
e-mail: tgumbo@uj.ac.za

Z. I. Jeeva · J. Cilliers
Unit for Environmental Sciences and Management, Faculty of Natural and Agricultural Sciences, North-West University, Potchefstroom, 2520, South Africa
e-mail: jua.cilliers@uts.edu.au

Z. I. Jeeva
School of Built Environment, Faculty of Design, Architecture and Building, University of Technology Sydney, Ultimo, 2007, Australia

J. Cilliers
School of Built Environment, University of Technology Sydney, Ultimo, NSW 2007, Australia

1 Introduction

Historically, South African administrative areas were delineated based on racial profiles. Non-white administrative areas were located on the periphery of white administrative urban areas (Lemon, 1991). Furthermore, the peripheral non-white administrations were not allowed to be economically vibrant, which forced inhabitants to commute to white owned city centres for commercial and employment purposes. This created unnatural functional linkages and inequality in spatial development. Subsequently, post 1994, the newly elected democratic government sought to restructure the administrative areas to correct the spatial disparities (RSA, 1998). Accordingly, in 1996, it was legislated that non-white administrative areas be integrated with white urban administrative areas to form unified cohesive administrative local municipalities. These integrated regions were to be governed by a one city-one tax base principal to bring forth equality and effective governance (RSA, 1998) (see Fig. 1).

To facilitate the spatial reform, an independent Municipal Demarcation Board (MDB) was employed in 1998 to determine the delimitation of local administrative boundaries according to the criteria listed in the Municipal Demarcation Act (27 of 1998) and other appropriate legislation enacted in terms of Chap. 7 of the Constitution. This outcome was a

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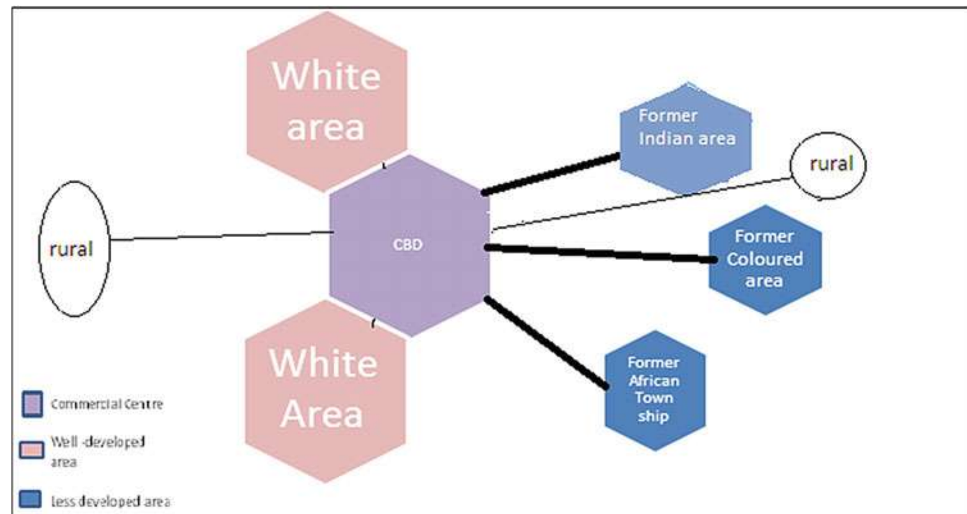

Fig. 1 Economic and social state of municipalities; *Source* (Authors, 2022)

reduction of the 1253 racial administrations and the establishment of 287 integrated municipalities in the year 2000.

Although the 287 administrative regions were delimited based on sound academic principles, such as functional interaction, cohesiveness and geographic location (RSA, 1998). In the South African case, the application of these principles resulted in the delimitation of unnaturally large, fragmented and unequally developed administrative regions, since previous racial areas were established far apart. What exacerbated the administrative reform exercise further was that there was limited data with which objective decisions could be made. As a result, most local boundaries were delimited in a subjective manner based on input from the community (Cameron, 2005). As a result, the idea of integrating administrative regions to promote equitable, efficient, effective and sustainable unified regions, only camouflaged the disparities that laid below (see Fig. 1) (RSA, 1998).

Consequently, municipal boundaries have shifted five times over the last 22 years, for various reasons, reducing the number of administrative regions from 287 in 2000 to 257 municipalities in 2022. This reduction has resulted in administrative areas expanding further. Resultantly, in 2022, the Minister of Finance, found that least one third (88) of South Africa's municipalities were totally dysfunctional (SANews, 2022). In light of this, the paper analysed the territorial size of the 88 dysfunctional municipalities and the related population densities, in order to determine if there is a relationship between the two factors and if it could be influencing spatial dysfunctionality. The topic provides important and necessary insight into delimitation debate of creating functional and optimal administrative regions. The section below discusses the methodology, findings, discussion and conclusions.

2 Methods and Materials

The size and population density of local administrations is essential for urban and regional planning, since without knowing how many people are located in the vicinity, governments and policymakers cannot plan adequately. Previous, research revealed that there is currently no objective or prescribed size for municipalities in South Africa. Subsequently, secondary data found on the listed 88 dysfunctional Municipal Websites was evaluated in terms of Arithmetic density—the number of people/ km^2 within each municipality in 2016. Findings with regard to what the average municipal size and population density of dysfunctional municipalities were analysed and illustrated through graphs. The findings contribute to a deeper understanding on why these 88 administrative regions are dysfunctional from a spatial planning perspective.

3 Conceptual Synopsis

Population density is one of the most important aspects in urban planning and directly affects the functioning of a city and the provision of services to the inhabitants (Howard, 1902; Dijkstra et al., 2020). Research has shown that if the settlement area is large and too sparsely populated, the cost of management is much higher and service delivery is inefficient (Soja, 2015). As a result, many modern urban planners have advocated for administrations with higher population densities and smaller areas to allow for more efficient administration and management (Garland, 2016). However, if the population density is too high, there are fewer amenities per

person, the cost of housing and services goes up, liveability becomes uncomfortable and consequently inhabitants start moving out. As a result, when cities are allowed to expand from the centre without the benefits of smart planning, they can become unsustainable, since it becomes too costly to provide services to a larger area that is sparsely populated and lacks a strong economic centre (Buljan et al., 2021). Currently, there is no consensus from an economic, demographic or social perspective on what is an optimal size for an administrative should be for it to be sustainable (OECD, 2018). The study investigates the current size of dysfunctional municipalities in S.A, to determine how size and population density could be contributing to the dysfunctionality.

4 Findings

South Africa has no standard method of delimiting municipal regions. Resultantly, over the past 22 years (2000–2022), municipalities have reduced from 287 to 257. The MDB motivated the reduction and the delimitation of larger municipalities stating that it allows for easier administration and financial viability (Thupane, 2015). However, municipalities have complained that their regions are too large and sparsely populated to allow for agglomeration advantages, public participation and the efficient delivery of services (Khumelo & Ncube, 2016:11; Omarjee, 2018:1). Subsequently, in 2021, Cooperative Governance and Traditional Affairs (COGTA) found that 163 of the 257 municipalities were in dire financial straits and 88 were totally dysfunctional (COGTA, 2018) (see Fig. 2).

According to Brand (2018), dysfunctional municipalities displayed very poor or no service delivery, have low debt collection, suffer from financial mismanagement and experience deteriorating infrastructure. Minster Mkihze (2018) further explained that the dysfunctionality in municipalities was also due to: the size and structure of municipalities, as well as the administrative mismanagement due to “political instability or interference, corruption and incompetence” (Brand, 2018; Felix, 2021). The combination of these factors has negatively affected economic growth and social development in many municipalities within the country (Brand, 2018).

Upon investigation, the paper found that majority (70) of the dysfunctional municipalities have a surface area below 15000/km^2 with an average size of dysfunctional municipalities being 8466, 42/km^2 (see Fig. 3).

For comparison purposes, Finland has 312 municipalities with an average size of 977 km^2, Romania has 3223 municipalities with an average size of 75 km^2, Slovak Republic has 2938 municipal areas and the average size is 17 km^2 and Croatia has an average municipal size of 102 km^2 (OECD, 2018). In comparison, these countries have smaller municipalities but more municipalities, than South Africa.

However, South Africa’s average density is 49 people/km^2. In comparison to European countries, Finland has a density of 18 people/km^2, Romania has a density of 84 people/km^2, while Slovak Republic has 655 people/km^2 and Croatia has an average population density of 2 865 people/km^2 (OECD, 2018; Goel & Mohan, 2020)· Consequently, this comparison shows that South Africa’s average density is much lower than most European countries.

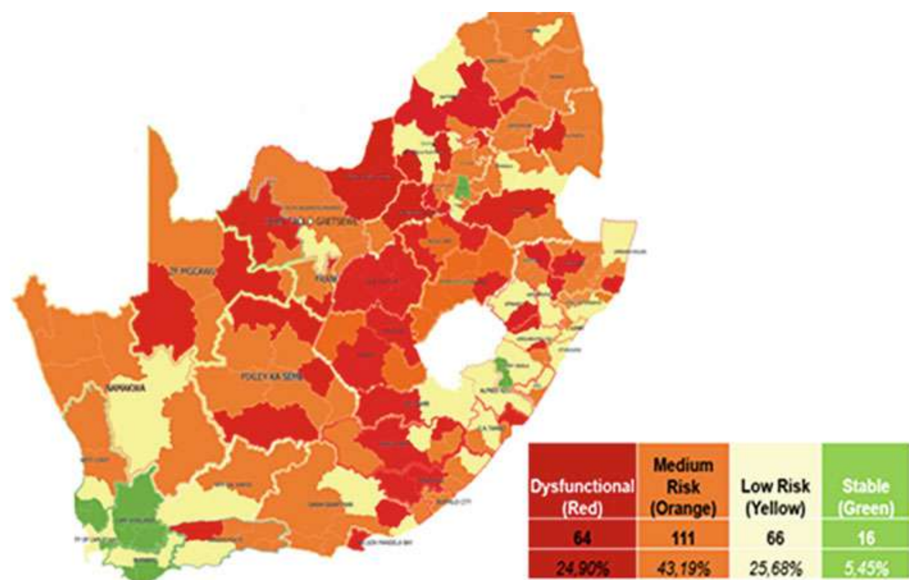

Fig. 2 Dysfunctional Municipalities in South Africa 2021; *Source* adapted from the Portfolio Committee (2016)

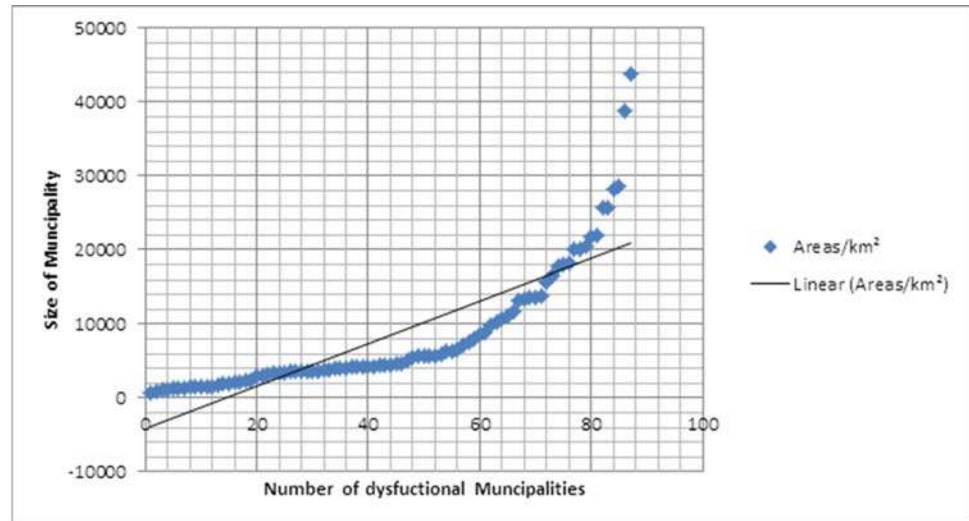

Fig. 3 Size of dysfunctional municipalities; *Source* (Author's 2022)

However, if one was to globally compare individual administration, in terms of population density, 81% (72) of the dysfunctional municipalities of South Africa have a density of less than 100 people/km^2 (see Fig. 4). Paris had a density of 21,616 people/km^2, London West had 10,374 persons/km^2 (Global Insight Data, 2018), Aura in Finland has a density of 42.01 people/km^2. This indicates that administrative areas do differ in population density and size and there is no standard method of delimiting them globally. Nonetheless, the United Nations Habitat (2022) Degree of urbanisation index considers municipalities with less than 300 people/km^2 as rural. In light of this, 81% of the dysfunctional municipalities in South Africa could be considered rural in nature.

The concern of having such large areas with such low population densities is that there are not enough funds being generated within the municipality to pay for basic services (water, electricity, sewage) that are used by only a smaller number of people. Subsequently, due to the lack of services, inhabitants migrate out of these areas and these areas consequently suffer from brain drain, increase in poverty and inequality which poses a risk to overall urban resilience.

Nonetheless, the South African legislation does not make provision for municipalities to be re-delimited into smaller units; for fear that this would promote exclusion and fragmentation. However, this concern could result in the continuous development of larger areas that are financially non-viable and administratively dysfunctional. However, the government believes that a change in management could make these municipalities more functional without a change in structure (Mkhwanazi, 2022). This is a contentious issue based on the above findings.

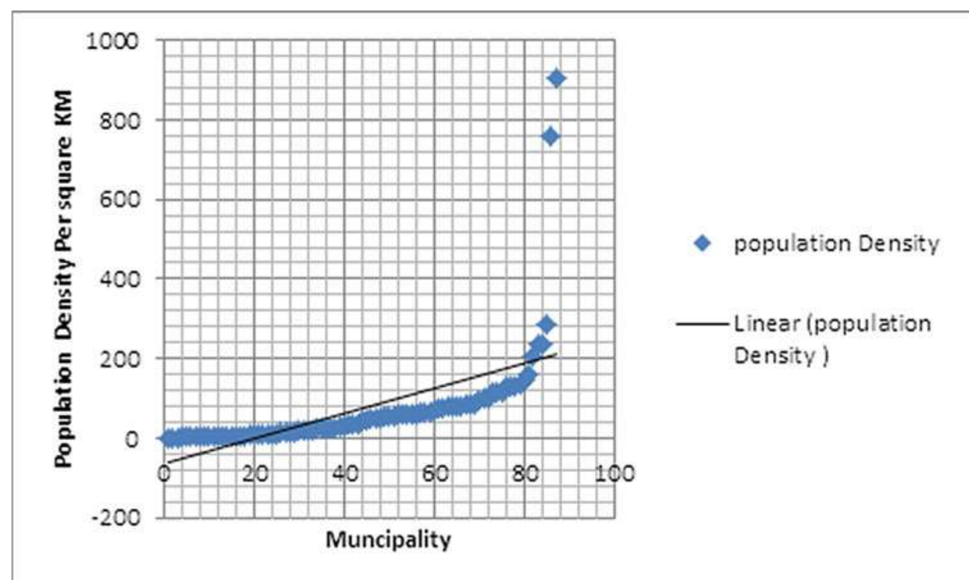

Fig. 4 Population density in dysfunctional municipalities' (Authors' Modification: Data adapted from Municipalities of South Africa, 2016)

Accordingly, the study recommends that the government together with the MDB revisit the delimitation of these 88 municipalities. The study suggests that smaller municipalities with higher densities might offer better development opportunities than larger municipalities with lower densities.

5 Conclusions

Previously, South African administrative areas were not designed with an inclusive or sustainable mind-set. The challenge of the present is to redress the historical imbalances and spatial inequalities, while trying to keep up with population dynamics and promoting socio-economic development. In light of this, the democratic government believed that creating larger and more integrated administrative areas might offer a solution to these challenges. However, with no set formula on how these should be delimited, 22 years later, one third of the municipalities are dysfunctional. The study recommends that the criterion by which municipalities are delimited be revisited and provision be made for the reduction in municipal size, in order to facilitate equitable development and easy management.

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New Grounds

Building Bridges Between Actors and Territories in Mexico City. Challenges, Opportunities, and Paradoxes of Sustainable Food Initiatives

Ayari G. Pasquier Merino, David S. Monachon, and Sofía Espinosa Bonifaz

Abstract

This research focuses on the links created by "sustainable food" initiatives between spaces and social sectors in urban and peri-urban areas in Mexico City. This city harbors enormous socioeconomic inequalities. 59% of its territory is considered a "conservation land area" and includes forests, wetlands, and areas dedicated to food production. This area is considered a priority for the city's sustainability due to its ecosystem services; however, it is socially relegated, and most inhabitants face poverty and a lack of public services. We document the experience of social initiatives involving agroecological producers from peri-urban areas and consumers dissatisfied with the dominant food system. In these new social spaces, there is a common narrative regarding the collective construction of fairer and more sustainable food schemes. Nonetheless, these initiatives are directed to exclusive consumer sectors, reproducing the existing disparities. In some cases, however, efforts are to counteract this trend by building links between producers and consumers that go beyond the economic transaction, seeking to generate co-responsibility and solidarity relationships.

Keywords

Sustainable food systems • Food justice • Urban food policies • Knowledge co-construction • Alternative food networks

1 Introduction

Modern food systems face important sustainability challenges. These include their inability to guarantee universal access to healthy food, their contribution to public health problems, the loss of diversity in production and diets, and being the main engines of environmental deterioration on a global scale (Weber et al., 2020). There has also been a concentration of decision-making and distancing between producers and consumers, favoring a growing distrust of the population regarding food origin and quality (Bricas, 2020).

In this context, agroecological projects have multiplied, and citizen initiatives have brought small producers closer to consumers interested in healthier and more sustainable food consumption practices. These initiatives, identified as Alternative Food Networks (AFN), contribute to food sustainability in different ways (Corsi et al., 2018; Forssell & Lankoski, 2014; Goodman, 2004), but they are not exempt from contradictions. This paper studies the AFN in Mexico City from the perspective of social inequality.

The urban area of the Valley of Mexico has 22 million people. It concentrates the economic and political powers and has well-being indicators above the national average. However, it harbors enormous socioeconomic inequalities, 10% of the population concentrates 60% of the income (CONEVAL, 2019), while 32.6% lives in poverty, and 11.2% are vulnerable due to income (CONEVAL, 2020).

A fact little known is that 59% of Mexico City's territory has the status of conservation land. This area includes forests, wetlands, and agricultural areas. This area is considered

A. G. Pasquier Merino (✉)
Universidad Nacional Autónoma de México, Associated Researcher at the Center for Interdisciplinary Research in Sciences and Humanities, Mexico City, Mexico
e-mail: ayari.pasquier@unam.mx

D. S. Monachon
Universidad Nacional Autónoma de México, Coordination for Sustainability, Sustainable Consumption Department, Mexico City, Mexico
e-mail: david.monachon@unam.mx

S. Espinosa Bonifaz
Universidad Nacional Autónoma de México, Postgraduate Student in Sustainability Sciences, Mexico City, Mexico
e-mail: sofiaespb@gmail.com

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a priority for the city due to its ecosystem services. However, it is socially relegated, and most inhabitants face poverty and a lack of public services.

2 Problem Statement

There is a common narrative regarding the AFN as initiatives of fairer and more sustainable food schemes. However, the actors involved in these initiatives—including producers, managers, and consumers—have significant socioeconomic inequalities, and there is unequal participation in internal management and decision-making. This paper analyzes to what extent these initiatives foster solidarity relationships or promote the reproduction of inequalities.

This paper proposes to consider these distribution strategies as "bridges" that link different spaces and actors in the city. We talk about "building bridges" as a metaphor for new social interaction spaces traversed by different types of flows. Returning to Appadurai's (1994) proposal, we identify financial flows, flows of people and goods, but also the flows of ideas and ideologies, which converge in the construction of narratives and strategies around food sustainability.

3 Literature Review

AFN have received increasing attention in studies on food in cities over the last decade. These studies describe AFN as urban social movements born in response to consumer concerns (Escalona, 2009) that question the dominant models of food production, distribution, and consumption (Méndez & Monteserín, 2017), promote social and environmental commitment (Cadavid-Castro et al., 2019; De Schutter, 2017; Corsi et al., 2018), and distribute the value produced throughout the food chain more equitably (Monachon, 2017). Other topics covered by the literature are their place in the urban–rural restructuring of metropolitan areas (Jarosz, 2008); their organizational strategies (Van Bers et al., 2019); and their contributions to the construction of forms of participatory governance of food systems. Literature on AFN has privileged the description of these initiatives and the documentation of their contributions to sustainability and participatory governance, paying little attention to inequalities of power between the actors involved in these initiatives.

Space has a central importance in the proposal of the AFN, closely related to short circuits of commercialization and the assertion of "the local"; however, links of AFN with space are not always explicitly analyzed in the literature. We can identify two trends in the works that address the subject. On one side, the analysis of the links between AFN and the territories where they operate. These works focus mainly on producers (Marino et al., 2018) and highlight their contributions to the generation of sustainable livelihoods (Nigh & González, 2015). On the other, those who analyze the role of consumption in the social construction of the sense of place (Goodman, 2004 and 2010; Schrager, 2018) highlight, among other things, the class dimension in the consumption of organic, local, and regional, and alternatives products. Other studies also address this issue, analyzing how inequity operates in the framework of the RAA from different perspectives (Mares & Alkon, 2011; Sbica, 2015).

4 Potential Significance of the Work

The paper focuses on links made by AFN between territories and actors, seeking to understand the mechanisms contributing to the generation of solidarity relationships or the reproduction of power inequalities, a subject treated insufficiently in the literature. Our results are relevant to strengthening strategies and public policies to build more sustainable and inclusive food strategies in Mexico City and other cities of the Global South.

5 Theoretical and Methodological Approach

The concept of AFN refers to citizen initiatives for food distribution that operate with different schemes. These are defined as initiatives that articulate producers and consumers around economic circuits with a minimum of intermediaries, promote sustainable food production, are rooted in the territories, and are based on relationships of trust and solidarity among their members, seeking to build models of more democratic organizational structures (Cadavid-Castro et al., 2019; Corsi et al., 2018; Méndez & Monteserín, 2017; Sánchez, 2009).

This paper is developed within the framework of a research-action project carried out in Mexico City between 2019 and 2022 by a multidisciplinary team and developed in collaboration with 23 AFN and 60 agroecological producers of the conservation area of the city. As part of this project, we conducted interviews, discussion groups, and exercises to build future scenarios with the different actors involved, including the university community from various National Autonomous University of Mexico campuses.

6 Major Findings

The first AFN in Mexico City began operating in 2010 (Sosa-Cabrera, 2019); in 2020, there were more than 40. These AFN operate with different organizational schemes, including producers' markets, consumer groups, production and consumption cooperatives, product baskets, shared responsibility agriculture, and community gardens. They are concentrated primarily in middle-class neighborhoods. Their claims include their contribution to improving access and distribution of food through the transformation of rural–urban relations and the revaluation of agricultural activities.

The productive projects visited are based on small-scale family production units, although almost half of them include one or more external employees. They all work without agrochemicals and seek to minimize their environmental impact. Most are middle-aged or elderly and have low incomes. However, a third of the producers interviewed are young people with university studies who decided to recover their family production units. 45% of the production units operate in private propriety spaces, 30% in collectively owned lands, and the rest work in rented spaces. Half of the production units have been operating for less than 20 years. Two-thirds produce more than five products, and a similar proportion carries out some degree of transformation. Figure 1 describes their main products. The production is directed to the market, and producers buy most of their food through the conventional means of distribution prevailing in the city.

The AFN with whom we work are initiatives organized by a small group of managers, generally middle-class youth with university studies, often voluntaries, who serve as a link between producers and consumers. Consumers are mainly from middle socioeconomic sectors interested in health care. However, the supply through this strategy also responds to the interest in supporting small producers and having access to high-quality products.

The distribution strategies are aimed at a small and privileged population sector. They are often part of gentrification processes underway in the city, reproducing the existing disparities. This has to do with the economic inequality between producers, AFN managers, and consumers, which creates unequal possibilities in defining consumption patterns. However, in many cases, participation in AFN gives producers greater access to quality food and improves their economic income. Besides, in some AFN, efforts are being made to generate links between producers and consumers that go beyond the economic transaction, seeking to build co-responsibility and solidarity relationships. However, this seems to be one of the central challenges for AFN. A relevant point we can add is the extensive participation of women in the organization and as consumers of these initiatives.

7 Conclusion

The AFNs arise in response to the growing discomfort caused by the sustainability problems of modern food systems. They represent a social movement articulated on a local and global scale. Their claims are varied, among the most common: The fairer distribution of profits generated in the food chain, the promotion of participatory governance, and agroecological production.

These groups are immersed in the contradictions and significant socioeconomic disparities that characterize the city and modern food systems. Some of these groups take advantage of market niches in middle and upper-middle-class neighborhoods. This mechanism is seen as beneficial for

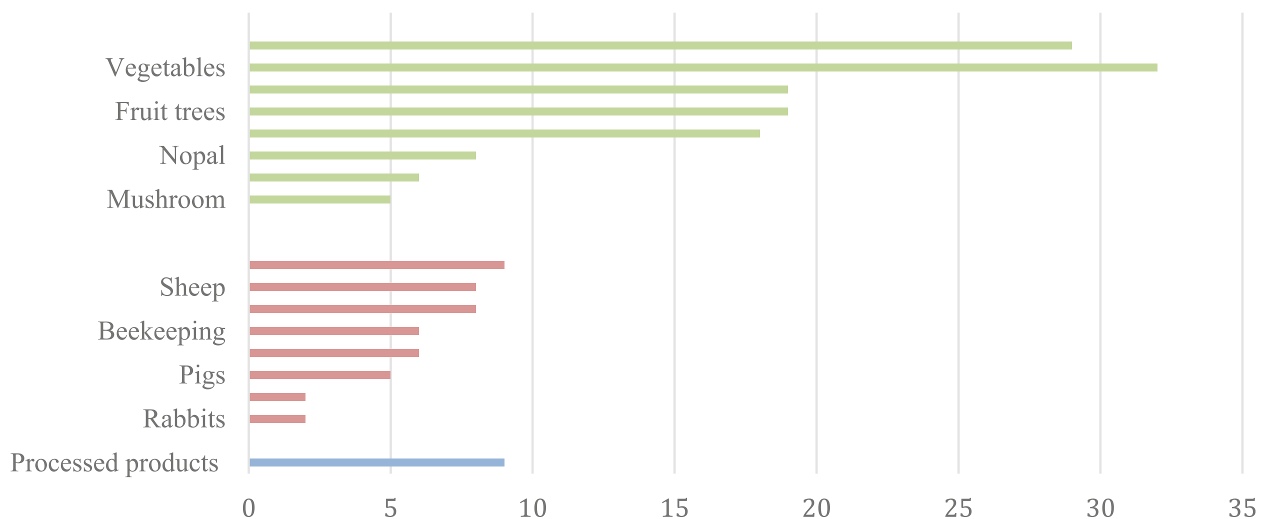

Fig. 1 Products of visited projects. *Source* Personal elaboration based on interviews conducted

producers. However, it reproduces inequality in access to healthy and quality food in the city and limits these initiatives' growth and potential social and ecological contributions.

Producers participate in AFNs primarily as "suppliers" rather than as active members in organization and decision-making, although this is variable. Some of them participate simultaneously in various AFNs. Since they often sell their products through AFNs and buy food for their consumption through conventional channels, we could say that they participate in constructing more sustainable food systems for the city as producers but not as consumers.

The contradictions of the AFN must be analyzed in the broader context in which they operate. In the case of Mexico City, AFN operate in a context marked by the historical marginalization of the peasantry, job precarity, and loss of purchasing power of consumers. Conditions whose attention requires policies aimed at the distribution of wealth and well-being.

8 Implications

Our research seeks to identify mechanisms that can strengthen the contributions of the AFNs and other schemes to the construction of sustainable, fair, and inclusive food systems in the city and promote participatory governance instruments for urban food systems.

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A Gender-Sensitive Landscape Planning Approach in Urban Transformation to Improve the Quality of Everyday Life for All *Case Study: Khartoum*

Mariam Mohamed Abdalla Wagialla

Abstract

Urban sprawl and socio-spatial segregation are the main features of the urban landscape of rapidly urbanizing cities in sub-Saharan Africa (SSA). While people with high incomes live in luxurious serviced neighbourhoods, most residents live in inadequate housing in underserved informal neighbourhoods on the outskirts of cities. This situation limits the ability of the residents to improve their quality of life and contributes to perpetuating gender inequality. This study aims to verify this hypothesis and to identify how to achieve an equitable and sustainable urban transformation in the cities of SSA. The research adopted a gender-sensitive landscape planning approach, which was validated by applied research that examined the urban landscape of the city of Khartoum, which is experiencing rapid, unorganized urbanization.

Keywords

Socio-spatial segregation • Sprawl • Urban transformation • Everyday life • Gender equality • Khartoum

1 Introduction

Khartoum, like other cities in sub-Saharan Africa, experienced rapid urbanization in the post-independence period, cf. (Bekker & Therborn, 2012), especially in the past four decades. Its population grew from only 250,000 on the eve of independence to 5,271,321 according to the 2008 census, and it was estimated at 8 million in 2015, cf. (Baldo, 2015). The rapid urbanization is a result of the influx of internal migrations due to drought and desertification, famine and civil wars, cf. (Eltayeb, 2003). Spatially, this has resulted in uncontrolled urban sprawl, with the urban area increasing from only 16.8 km^2 in 1955 to 1,650 km^2 in 2008, cf. (Murillo et al., 2009, p. 19), and it is still increasing both formally and informally. Informal housing exceeded 50% of the city by the mid-1990s (ibid.). While infrastructure and services failed to keep pace with this rapid expansion.

This situation has a disproportionate impact on the population's ability to improve the quality of daily life and meet human needs, cf. (Max-Neef, 1991). This study aims to reveal the impact of Khartoum's urban landscape on different groups, by gender, age, and socioeconomic backgrounds. It also attempts to investigate how the current urban landscape was produced and to make proposals for equitable and sustainable urban transformation.

2 Theoretical Framework and Methodology

As interdisciplinary research, the theoretical framework, see Fig. 1 covers several areas, including:

– Gender-sensitive planning theories that stem from the fact that men and women have different experiences in cities, cf. (Jarvis et al., 2009), since women often perform multiple roles that include domestic work, paid work, care work, and community work, cf. (Moser, 1993). However, they are not a homogeneous group as they differ in terms of age, socioeconomic status, physical abilities, etc., cf. (Nussbaum, 2000). They are also subjected to gender-based violence in private and public settings, cf. (Chant & McIlwaine, 2016). Moreover, the male-dominated urban planning profession and the top-down approach limit women's participation, cf. (Fainstein & Servon, 2005; Greed, 1994).

M. M. A. Wagialla (✉)
DANIA for Diversity and Sustainable Development (DANIA, Für Diversität Und Nachhaltige EntwicklungZVR-Zahl 1143975071), Pinggau, Austria
e-mail: marfa_1998@hotmail.com

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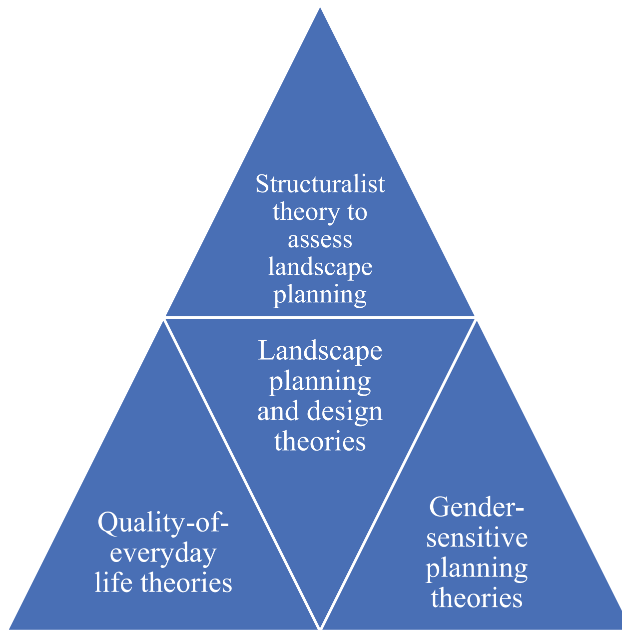

Fig. 1 Theoretical framework. *Source* Wagialla (2020)

– Quality-of-life theories, that focus on the needs and aspirations of different groups and the capabilities required to achieve equity and a decent life for all, cf. (Max-Neef, 1991; Nussbaum, 2011; Bennhold-Thomsen et al., 2001; Lefebvre, 1981/2006).
– Theories of landscape planning and design that set guidelines for equitable and sustainable cities, just to name a few (Fainstein, 2010; Gehl, 2010; Jenks & Jones, 2010; Jenks & Burgess, 2000; Chapple, 2014; Lefebvre, 1974/1991).
– The structuralist theory to assess urban landscape, that distinguishes between three dimensions of perception: "real dimension", "imaginary dimension", and "symbolic dimension", cf. (Damyanovic, 2007), see Fig. 2.

The research used a case study method with multiple units, cf. (Creswell, 2009). Seven residential neighbourhoods were chosen in the form of a sector that passes from the centre of the city of Khartoum to its outskirts (see Fig. 3), including different types of neighbourhoods in terms of their origin and economic level of residents. Techniques

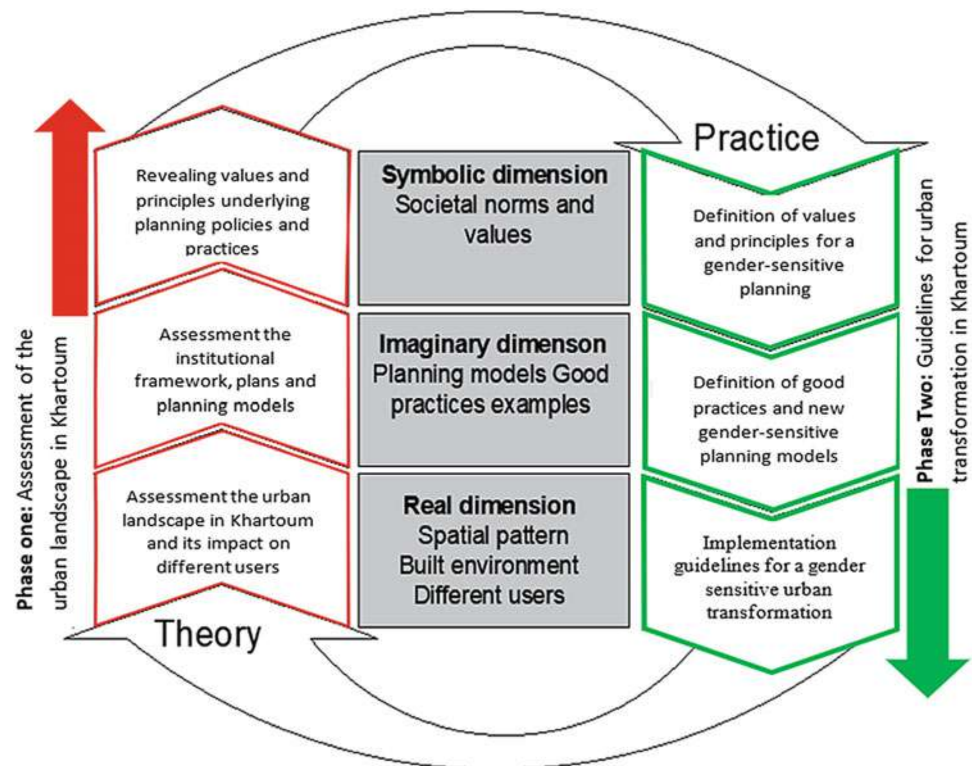

Fig. 2 The structuralist approach to assess landscape planning. *Source* Wagialla (2020) based on Damyanovic (2007, p. 43)

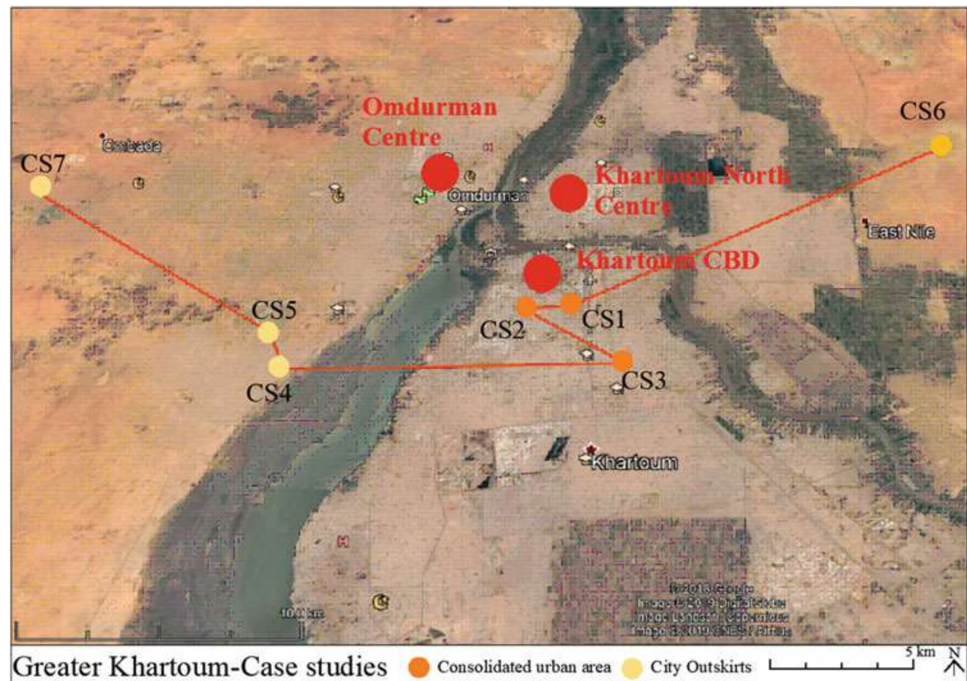

Fig. 3 Case studies locations (CS 1–7)—Khartoum city. *Source* Google Earth, edited by Wagialla (2020)

used to collect data included observations, interviews, documentation, mapping, and photography, as well as images from Google Earth.

3 RESULTS: Assessment of the Current Urban Landscape of Khartoum

3.1 The Impact of Khartoum's Urban Landscape on the Quality of "Everyday Life" of Different Gender Groups

It turns out from the assessment of the urban landscape of Khartoum that the city is clearly divided socially and spatially. Most neighbourhoods on the outskirts of the city are underserved and inhabited by low-income and IDPs (CS 4, 5, 6, 7), while the high and middle-income people concentrated in the consolidated urban area (CS 1, 2, 3, 7). Moreover, in response to the increased demand, began urban densification in the old low-density neighbourhoods where services are available (CS 1, 2, 3). Incredibly high rents and land prices pushed low-income people to the outskirts of the city (CS 2 and 3), increasing socio-spatial segregation. This inequitable situation has a disproportionate impact on different groups, especially women. The impact of this situation on women and girls living on the outskirts of the city is summarized as follows:

- Lack of water supply, electricity, and sewage disposal network, increases the effort and time to perform housework. Consequently, there is a lack of rest and leisure time for women, which affects their physical and psychological health, especially for those who combine domestic and paid work. The displaced women are often the sole breadwinners for their families, because men often participate in the war, see. (Bello et al., 2014).
- Houses are mostly built of non-durable materials (see Fig. 4), so they are vulnerable to demolition in case of heavy rain, especially since there is no rainwater drainage system (see Fig. 5).
- Houses often do not have enough rooms that provide privacy and comfort to family members, which leads to an increase in gender-based violence.

Fig. 4 Informal housing—Case study 7. *Source* Wagialla (2020)

Fig. 5 Lack of rainwater drainage system Case study 5. *Source* Wagialla (2020)

- The lack of an efficient transportation system leads to an increase in the time and cost of daily trips, especially for displaced women who often work in marginal jobs in the consolidated urban area.
- The lack of adequate public educational facilities deprives children of education, especially girls. Which contributes to their exposure to forced early marriage.
- The lack of health facilities increases the burdens of women who take care of children and the elderly. Moreover, the women themselves are at risk in case of childbirth or pregnancy complications, since more than 80% of women in Khartoum have been subjected to FGM, cf. (WHO, 2006).
- The lack of lighting in the evening makes the streets unsafe, especially for women who work late, exposing them to assault, looting, and harassment.
- The lack of nearby recreational areas deprives children and women of entertainment, especially since they cannot afford to go to parks outside their neighbourhoods.

However, the consolidated urban area also falls short in meeting the spatial requirements of the residents. Unbalanced urban densification made matters worse, with the number of housing units multiplied several times, without providing the necessary additional educational and health facilities (CS 1, 2, 3). This increases the burden on new middle-income residents. It also led to a decrease in open spaces associated with housing, so deprived women, and children of entertainment. Moreover, urban densification has led to traffic congestion, loss of safety on local streets and increased carbon dioxide emissions.

3.2 Key Factors in the Production of the Current Urban Landscape of Khartoum

Development plans, planning models, and urban planning institutions were examined to identify the main factors that contribute to the production of Khartoum's urban landscape. It became clear development plans have failed to provide solutions to the challenges arising from rapid urbanization, especially addressing informal housing. The plans also adopted the separation of land uses and the three-class system inherited from Anglo-Egyptian colonialism, where neighbourhoods are divided according to income level. cf. (Home, 1990). Thus began the current socio-spatial segregation. Moreover, all but the last plan adopted low-density planning models, which increased the rate of land consumption and the length and cost of infrastructure networks.

Furthermore, urban planning institutions, as part of the successive authoritarian regimes, have their policies and practices based on the values of domination, exploitation, and marginalization. As utility is the criterion for urban planning decisions, focusing on maximizing economic returns rather than improving the quality of life for residents, cf. (Campbell & Marshall, 2002). This results in a bias in favour of powerful groups and marginalization of vulnerable groups, especially displaced women, and girls.

4 Conclusion and Proposals

In summary, the previous assessment of the urban landscape of Khartoum showed that socio-spatial segregation has an impact on the daily lives of the population, and the most affected groups are low-income women and girls who live on the outskirts of the city. Moreover, the values and principles underlying planning policies and practices played a major role in producing the current situation. Accordingly, the study suggested some guidelines for achieving an equitable and sustainable urban transformation, which are summarized as follows:

- Urban transformation must be based on the values of democracy, equality and respect for diversity, difference, and intersectionality among gender groups.
- Restructuring planning institutions based on legislation that guarantees inclusive and gender-sensitive participation in planning processes, cf. (Chestnutt et al., 2011).
- Adoption of a mixed-use, medium-density model to produce gender-sensitive urban spaces, cf. (Chapple, 2014; Fainstein, 2010; Gehl, 2010; Jaekel & Geldermalsen,

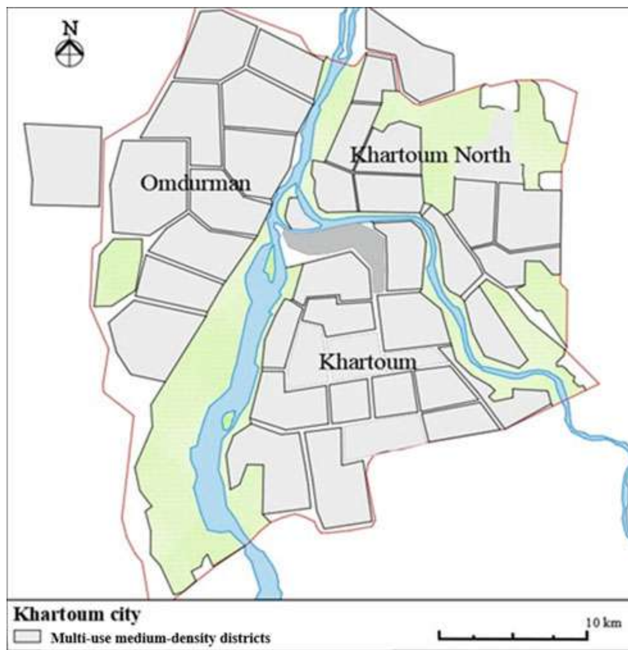

Fig. 6 The proposed division of Khartoum as multi-use districts. *Source* Wagialla (2020)

2006). Accordingly, it is proposed to divide the city of Khartoum into mixed-use districts to function as small cities (see Fig. 6).

- The study identified some general guidelines to provide adequate and affordable housing, infrastructure, public facilities, open spaces, and an environmentally friendly mobility system.

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Re-Imagining the Role of Climate Finance in Promoting a Just Transition: The Case of Post-apartheid Divided Small Towns in South Africa's Northern Cape Province

Sonwabile Lugogo

Abstract

As part of its low-carbon development ambitions in 2011, South Africa adopted the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP). REIPPPP is aimed at accelerating South Africa's decarbonisation process by driving the uptake of renewable energy. Since it was launched in 2011, several renewable energy projects have been developed across the country. Some of these projects are located in South Africa's small and rural towns. As part of REIPPPP policy, renewable energy projects are obligated to support local communities located within a 50 km radius of where they operate. This paper investigates whether the Independent Power Producers (IPPs) in Siyathemba Local Municipality (SLM) are contributing to socio-economic development in the towns Prieska, Niekerkshoop and Marydale. SLM has five IPPs (wind generation and solar PV) which are operational. Channelling climate finance at local level has the potential to intensify distributional justice by increasing the share of resources to deliver more just processes and outcomes (Colenbrander et al. in Climate Policy 18:1–22, 2018). In the context of South Africa, there is limited research which has investigated whether the 1–1.5% of revenues that is supposed to be provided by the IPPs to local communities has actually translated into socio-economic development opportunities in beneficiary communities. As an urban geographer who is interested in development issues, I explore whether small rural and remote towns in South Africa, which are some of the most divided urban spaces, are benefiting from the mobilised climate finance in South Africa.

Keywords

Socio-economic impacts • Small towns • Renewable energy • Climate finance • Just transition

1 Energy Poverty and the Promise of a Just Transition

Energy poverty which is a lack of access to clean, safe, reliable and affordable energy remains a persistent challenge in South Africa. This is despite the high electrification rate which has seen over 84% of the population connected to electricity through the national grid (Statistics South Africa, 2018). Currently South Africa's electricity is unreliable and expensive. While coal accounts for almost 70% of the primary energy and generates almost 90% of the electricity in South Africa (Department of Energy, 2019). The high dependency on coal is a significant challenge for the country because of its contribution to climate change and air pollution. Such challenges are more detrimental in small rural towns which in most cases are at the receiving end of climate change impacts due to their dependency on climate-sensitive activities such as subsistence farming.

To address the aforementioned challenges South Africa became a signatory of the Paris Agreement of 2015 in effort to advance a just transition. As part of its low-carbon development ambitions in 2011, South Africa adopted the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) aimed at accelerating South Africa's decarbonisation efforts and enhancing the country's power generation capacity by driving the uptake of renewable energy. Since its launch in 2011, the programme has managed to attract significant financial support from both the private and public sectors.

This paper explores whether small rural and remote towns in South Africa, which are some of the most divided urban spaces are benefiting from the mobilised climate finance. The

S. Lugogo (✉)
Faculty of Humanities, Humanities Building, University of Pretoria, Room 8-2, Level 8, Private Bag X20, Hatfield, 0028, South Africa
e-mail: s.lugogo@gmail.com

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paper investigates whether the Independent Power Producers (IPPs) which are located in Siyathemba Local Municipality (SLM) are contributing to socio-economic development initiatives in Prieska, Niekerkshoop and Marydale which are located in SLM. SLM has five IPPs (wind generation and solar PV) which are fully operational. The projects located in SLM include Mulilo Renewable Solar PV Prieska, Mulilo Sonnedix Prieska PV, Mulilo Priska PV, Copperton Wind Farm and Garob Wind Farm. According to the Independent Power Producers Procurement Programme (IPPPP) Office approximately R 10 302 million of climate finance has been invested in the renewable energy projects in SLM.

To investigate the effectiveness of climate finance in advancing what has become known as 'a just transition' at a local municipal level, this paper draws from my Masters research which uses mixed research methods in order to obtain wide-ranging data and provide a more comprehensive interpretation of data. To collect the data for this paper qualitative research methods were used. Interviews were conducted with the IPPs, the local municipality officials and local-based community organisations that are responsible for socio-economic development in SLM, including the community members of the three selected towns. This was done in order to provide additional understanding of how climate finance is distributed, the differences between what has been committed and what has actually been disbursed to local communities, and the socio-economic opportunities that have been created in SLM by climate finance investments in the municipality (Olusegun, 2002).

2 The Energy Ecologies in Small Towns

Similar to most of South Africa's small rural and remote towns, Prieska, Niekerkshoop and Marydale are beset with various challenges such as poverty, unemployment and high dependency on government social grants. However, since South Africa implemented the REIPPPP, significant investments have been pouring into these three towns. Initially these towns were predominantly farming and mining economies, however farming and mining activities have drastically declined in recent years. For instance, Copperton which is an old mining town located about 65 km from Prieska was sold to a private owner after the closure of the mine. Despite this decline some new mining activities are planned in the region, for example, Orion Minerals' operations near Prieska, for Copper and Zinc.

These three towns are marked by apartheid spatial planning. There are remarkable differences between the urban spaces that were previously reserved for white South Africans that were mostly involved in farming and mining activities during apartheid, and the townships/rural spaces which were reserved for black and coloured farm and mine workers. The post-apartheid government has tried to close these gaps through programmes such as the Reconstruction and Development Programme's (RDP) housing projects. However, poverty and unemployment remain very high in SLM. The rate of social grant beneficiaries is very high. For instance, in 2016 around 49% of the population in SLM were dependent on social grants for their livelihoods (Statistics South Africa, 2018). At the same time, access to basic services such as water, sanitation and electricity is high. Despite the high electricity access in SLM, the energy ecology division is visible in these towns. For example, most households in Niekerkshoop, a previously white mining town and farming centre have a high electricity connection rate. While the predominantly black and coloured township areas in Prieska and Marydale have limited access.

3 Towards Attaining a Just Transition

As part of the REIPPPP policy, IPPs have Economic Development Obligations (EDO), which require them to channel 1–1.5% of their revenue towards the Socio-Economic Development initiatives of beneficiary communities (Eberhard & Naude, 2017). The beneficiary communities must be located within a radius of 50 km from the IPPs sites of operations. Channelling climate finance at the local level has the potential to intensify distributional justice by increasing the share of resources to deliver more just processes and outcomes (Colenbrander et al., 2018). In the context of South Africa there is limited research which has investigated whether the 1–1.5% of revenues that is supposed to be provided by IPPs have actually translated into socio-economic opportunities in beneficiary communities. Soanes et al. (2017) allude that despite significant climate finance from different sources there is still no understanding of whether climate finance is having an impact on the socio-economic development of local communities. Similar to some rural towns across the world, these three towns are struggling with economic challenges and urgently need new activities to boost their economies. According to Okkonen and Lehtonen (2016) this is also the case in rural communities across the northern peripheries of Europe which are often isolated and face significant social challenges and uneven regional development despite being the host to renewable energy projects.

4 The Socio-economic Impacts of Climate Finance

Despite the green industrialisation that is currently happening in SLM, the socio-economic benefits of climate finance investments are hardly visible on the ground. My fieldwork and research indicate that local communities continue to live in poverty, while unemployment remains very high and a significant number of residents are largely dependent on social grants for their livelihoods. Some of the reasons why climate finance has not trickled down to the towns which are located in close proximity to IPPs in SLM include the failure of REIPPPP to follow up on socio-economic development initiatives that are supported by the IPPs, the lack of capacity in terms of skills in local communities and at the local municipality level. While the contestation between the local communities, locally based organisations, implementing organisations and IPPs is also hindering the distribution of climate finance to local communities. For example, a hydroponic project implemented by a solar company in SLM to address food security challenges failed to materialise due to the lack of community support, accompanied by the local politics (see Figs. 1 and 2). The follow-up on the implemented socio-economic development initiatives remains a key challenge that needs to be addressed to ensure that climate finance investment in local economic development initiatives is not wasted on projects that are abandoned within a few years of implementation. Although socio-economic benefits have hardly materialised in SLM, results from the field show significant socio-economic benefits of climate finance investments for social purposes, such as contributing with donations of food to old age homes, community halls, provision of Wi-Fi to schools and libraries and supporting sporting events across SLM. Job creation by IPPs has been limited to the construction phase of solar plants or wind farms.

5 Conclusion and Implications for Small Towns

Although significant climate finance has been invested in SLM, there is still little real impact on the ground. Poverty and unemployment remain persistent challenges. In exploring the implications for a just transition, the paper profiles the plight of small town residents and asks questions about social and economic justice. The relationship between economic, social, spatial and environmental concerns in small towns facing the effects of climate change provides a new urban ecology of division that this paper, and my broader research, seeks to highlight. The current research highlights that the small towns that are host to some of the renewable energy projects in South Africa are not effectively benefiting from climate finance in accordance with the REIPPPP policy.

Fig. 1 The hydroponic project implemented in SLM in 2020 (*Credit* African Centre for a Green Economy 2020)

Fig. 2 The current state of the hydroponic project in SLM (*Credit* Svea Josephs 2022)

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Adaptive Reuse of Buildings as a Strategy to Reconnect Divided Societies in Durban

Viloshin Govender and Claudia Loggia

Abstract

In Durban, the Point Precinct was first colonised in 1824 as a halfway station to form the original settlement for the town (Kruger, in Colonial Natal, 1838 to 1880: the making of a South African Settlement system (Volumes I and II). LSU Historical Dissertations and Thesis, 1994). Through the years, despair and neglect have set in creating divisions between the city centre and that precinct. These divisions were further enhanced through developer-driven projects, between 1992 and 2003, which led to gentrification and exclusivity, by ignoring the needs of existing communities within this neglected strip of land (Gounden, in Waterfront development as a strategy for urban renewal—a case study of the Durban Point Waterfront Development project, University of KwaZulu natal, 2010; Govender, in Adaptive reuse of architecture as a response to insurgency and decay in the Durban City center towards Resilient cities in South Africa, University of KwaZulu Natal, 2022). This urban precinct lies between the new Port Development and the Durban CBD, with dilapidated, neglected, and run-down buildings left as in-between space as a result of no investments and businesses pulling out, which brought also drugs, prostitution, and insurgency. Today, the new upper-class developments of the Point Precinct are surrounded by dilapidated and abandoned buildings, where the solution is often to demolish rather than reuse. In response to these issues, this study proposes adaptive reuse as a strategy towards creating links between the divided societies that exist within the Point Precinct and promoting sustainable and resilient urban environments. The study applied a hybrid mapping methodology based on collaborative mapping, transect walks, drone mapping, and observation checklists to identify strategies that have been tested and co-designed with local residents. As part of a doctoral study, this research proposes a bottom-up approach to urban planning to create a more inclusive neighbourhood that responds to the needs of two divided societies at the Point Precinct, namely the urban poor and upper-class community. The key outcome of this study is a set of guidelines on how to adapt, reuse, and build urban resilience towards a sustainable urban transformation.

Keywords

Urban decay • Adaptive reuse of buildings • Bottom-up planning • Urban resilience

1 Introduction

Thriving communities, neighbourhoods, and urban design encompass coherent assimilation of a particular site's cultural, economic, legislative, and sustainable factors. Often, only some of these factors are considered to plan and design developments at the neighbourhood and urban scale. This results in developer-driven, top-down approaches to urban design and city planning, leading to ignored local cultures, communities, and the socio-economic conditions of a site.

In 1991, the Point Redevelopment Programme (PRP) was established by the Durban Infrastructural Development Trust (DIDT) as a protocol among key stakeholders for the redevelopment of the Point Precinct. Some of the principles in the protocol involved community upliftment, creating holistic links to the greater city, and including public participation (Maharaj & Ramballi, 1998).

The protocol, however, is essentially developer-driven and since its inception, little or no upgrades have made

V. Govender (✉) · C. Loggia
School of Built Environment and Development Studies, University of Kwa-Zulu Natal, Durban, South Africa
e-mail: govenderv3@ukzn.ac.za

C. Loggia
e-mail: loggia@ukzn.ac.za

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meaningful changes to the state of despair in the Point Precinct. The protocol failed to address key issues such as adaptive reuse, urban upgrading, urban resilience, and new urbanism. These concepts and theories are vital in upgrading the Point Precinct. They offer key understandings of how the built environment can respond to social, cultural, economic, and political influences. Understanding these complex factors that affect cities today and how these factors can work together will aid in creating resilient cities.

From an architectural perspective, this study followed a holistic design approach to revitalise the Point Precinct. Concepts and theories such as co-design, co-production, adaptive reuse of buildings, edge and node analysis, and community-orientated design strategies have been tested and analysed to produce an architectural solution for the reuse of existing and derelict buildings in the Point Precinct.

Socio-cultural segregation, urban despair, insurgency, and lost space now exist between nodes of the Point Precinct and the Durban CBD. Using Kevin Lynch's (1960) 'image of the city', this study sought to map current uses, attributes, and socio-economic factors such as informal trade, SMME businesses, and goods and services in the Point Precinct. The main idea was to identify attributes that trigger links between nodes of the developed Point Precinct and the Durban CBD, to activate change for a sustainable urban environment. This current proposal for the Point Precinct Developed by ROC Point (PTY) Ltd has been interrogated and analysed against the mapping techniques proposed, allowing for a bottom-up approach towards urban design to take place, re-stitching the fragmented spaces between the city's urban nodes. Such an approach would be inclusive of local communities, planners, municipalities, and architects so that the space can be accepted and used by all cultures, communities, and socio-economic factors.

This study aimed at defining lost space and abandoned space within the Point Precinct area to determine how it is used and how it can be adapted to better serve its community. Lost spaces can be found in spaces in-between, on top of, and under buildings. This study sought to map and capture lost space within buildings and develop alternatives that can contribute to the resilience of buildings, in so doing making suggestions for the current Point Precinct proposal to reuse existing buildings and lost spaces rather than develop new layouts and structures. A set of hybrid mapping tools such as drone mapping, transect walks, sketches, and observations have been applied to capture lost spaces. These tools helped in determining how space was currently being used and adapted by the community. By mapping spaces between development nodes in the city, this research sought to interpret and analyse key urban features such as urbanisation, urban degradation, government policy, zoning legislation, and architectural design.

The key outcome of this study is a set of guidelines on how to adapt, reuse, and build urban resilience towards a sustainable urban transformation. Such a framework has been designed to assist architects, urban designers, municipalities, and planners in understanding the complexities related to the urban degradation in the Durban CBD, and to support the decision-making process in urban planning and urban regeneration.

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A Critique of Entrenched Methodology Towards Inclusive Urban Place-Making

Yashaen Luckan

Abstract

Discohesion and barriers to spatial transformation through disconnected thinking and practice continue to socio-economically plague Global South cities. This paper explores the fundamental causes of urban discohesion through a critical review of prevalent attitudes and methodologies of urban design. The aim of the paper is to define the key problem of perpetual discohesion in postcolonial cities, to propose alternative approaches that could spatially transform segregated cities into inclusive cities. Phenomenology, as a conceptual framework, defines this qualitative study. A critical literature review enhanced by an autoethnographic study questions universally adopted methods of urban design that perpetuate objectivist notions of place-making. A key finding of the study is that prevalent approaches ignore subjective experience as a vital determinant of urban being, dwelling and belonging. The paper proposes an alternative, participatory design methodology that engages the dialectical objective and subjective interpretations of place, through the inclusion of layers of being in place through time.

Keywords

Global south • Socio-spatial exclusion • Apartheid city • Discohesion • Inclusive cities

Y. Luckan (✉)
School of Built Environment and Development Studies, University of KwaZulu-Natal, Durban, South Africa
e-mail: luckany@ukzn.ac.za

1 Background and Context

Cities, by design or by becoming, invariably have a structural permanence that defines their order and form, which either expresses the nuanced identity of people in place and time or displaces these through imposition by design.

While traditional organic cities evolved through the social construction of place, it is argued that modernist cities conversely emerged from objectivist approaches towards the ideal of urban efficiency, aided by the need for rapid reconstruction due to socio-economic crises such as war. Chapin and Kaiser (1985) attest to this by referring to the post-World War 2 endeavours on improving urban efficiency through master planning approaches that would focus on land use zoning and infrastructure development. The consequent paradigmatic shift, from the organic development of the city to the planned city reveals a methodological paradox, as in the wake of urban advancement and efficiency lay a trail of inequity through privilege and deprivation. Objectivist approaches of the modernist era ultimately manifest as a spatial (re)construction of the social, resulting in economic, psycho-spiritual and social disconnection at various scales that translate into spatial exclusion.

The apartheid city (Fig. 1) illustrates how deliberate spatial decisions, including spatial racialisation could thrive on the inherently segregation model of the modernist city.

The apartheid city was not merely a concept of political decision, rather it was the process of design thinking that developed a rational design for socio-economic segregation that continues to widen the gap between privilege and deprivation. Even current thinking about smart cities and urban futures seems to perpetuate psycho-social-economic exclusion albeit in the pursuit of twenty-first-century models of urban efficiency. Such consequential outcome is affirmed by Freund (2010) who expounds the concept of layered change whereby a preceding era in the evolution of a city impacts its future adaptability.

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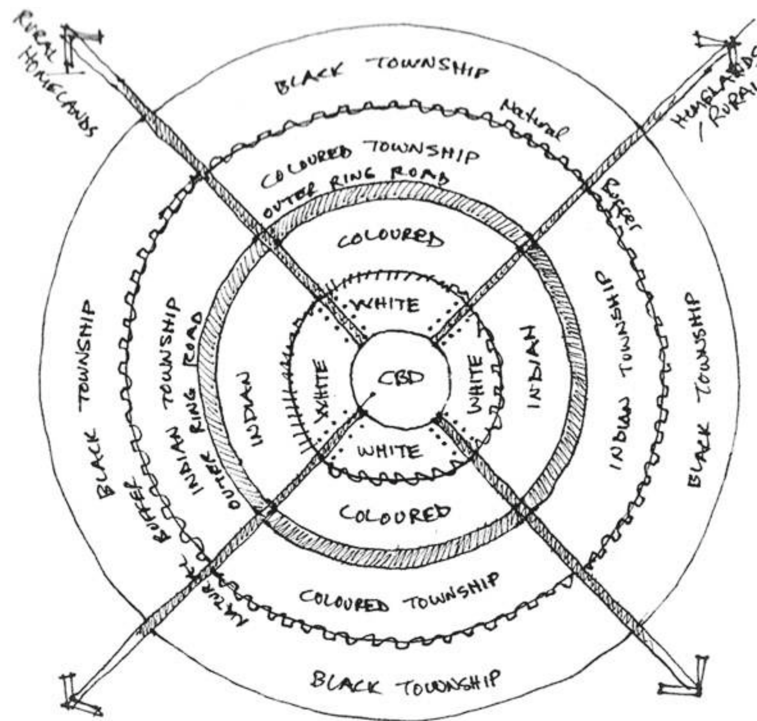

Fig. 1 The Apartheid City model (Luckan, 2021 in Magidimisha-Chipungu & Chipungu)

2 A Critique of Objectivist Design Methodologies and Approaches

The current crises are considered an outcome of theoretical frameworks and methodologies since the late nineteenth century, that shifted thinking and making from an intrinsically cultural act of being in place and time, to the convenience of disconnected abstraction, fuelled by rapid industrialisation (Bussey, 2010) and the expansion of cities. Corresponding approaches and methods of design, since this period, would seek to rationalise urban design thinking and practice towards overt reliance on the measurable or quantifiable attributes of space.

Figure Ground and Linkage theories (Trancik, 1986) have provided much value to designers in the study of existing urban environments and their design/redesign. Even place theory found similar expression, through the graphical study of ordering elements that form the psychological image of the city, as expounded most notably by Lynch (1960). The coding of urban experience (Fig. 2) to its determinate/tangible attributes, through the observation of physical phenomena, however inadvertently promulgated reductionist approaches.

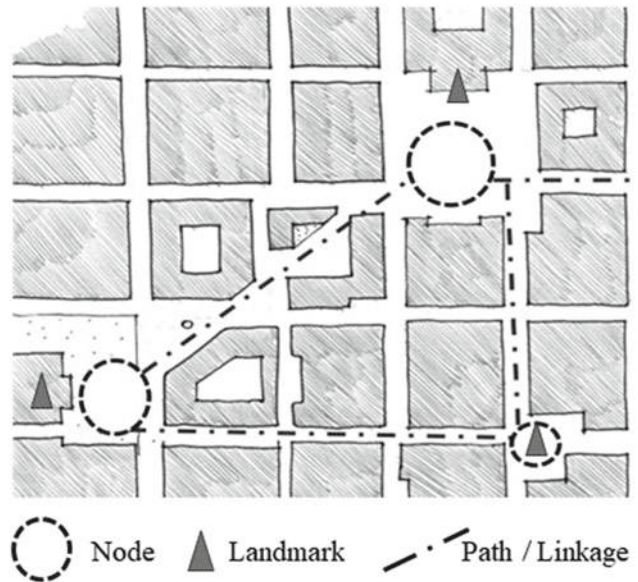

Fig. 2 Rationalising place through graphical coding of urban experience (adapted from Luckan, 2021, in Magidimisha-Chipungu & Chipungu)

The definitive structuring of the urban system through objectivist methodologies inherently favour convenience over complexity and therefore continues to dominate thinking and practice about urban place-making.

3 Proposition: Subjective Interpretation/Perception Through Being and Dwelling

The work of Luckan (2015, 2021) critically explored a people–place–time dynamic to understand the indeterminate rhizomic qualities of urban place and how time itself continually transforms the present. A counter position to the predominant reductionist, generalised approaches, alternative modes of thinking and making through a phenomenological framework, are explored to understand the indeterminate socio-spatial interactions at the human scale of dwelling and experience in the making of urban place. It is argued that an epistemological and ontological counter position, fundament on the expression of human potentiality at the level of consciousness is necessary.

At an ontological level, Inayatullah (2005) posits a fourth bottom line that transcends a materialistic/objective understanding of reality, through the concept of holistic well-being defined by the complex interrelationships of the physical, psychological and spiritual spheres of being. Inayatullah's reference to measuring the immeasurable—the subjective conscious perception of objective variables—is affirmed by Overmars's (2010) criticism of Western methodologies that tend to compartmentalise nature for the purpose of analysis; a proposition that supports a balance of analysis with the synthesis in a complex hybrid approach to understanding the nature of reality and being in the temporal scale.

The work of Architect/Mathematician Christopher Alexander is explored to understand urban complexity. In *A City is not a Tree* (1966), Alexander expounds on the concept of the semi-lattice, that implicitly includes a conscious subjective dwelling/being in place through time, dependent upon the number of incidental encounters within an urban ecosystem (Fig. 3).

It is to be noted that the number of incidental encounters within the urban ecosystem is not time limited, as Fig. 3 illustrates a varying number of incidental moments could happen within the same unit of time (T). These moments are defined by both the fixed/determinant elements in the system as well as the level of conscious awareness within such. This dynamic system of determinate and indeterminate interdependencies is what ultimately expresses the experience of place through an ontological layer of being—physical, psychological and spiritual—in the in-between spaces formed by the interrelationships between incidentals and time.

Alexander (1979) further expounds the temporal interpretation of place, elucidating that the spirit of place cannot be explicitly described nor analysed, referring to this as

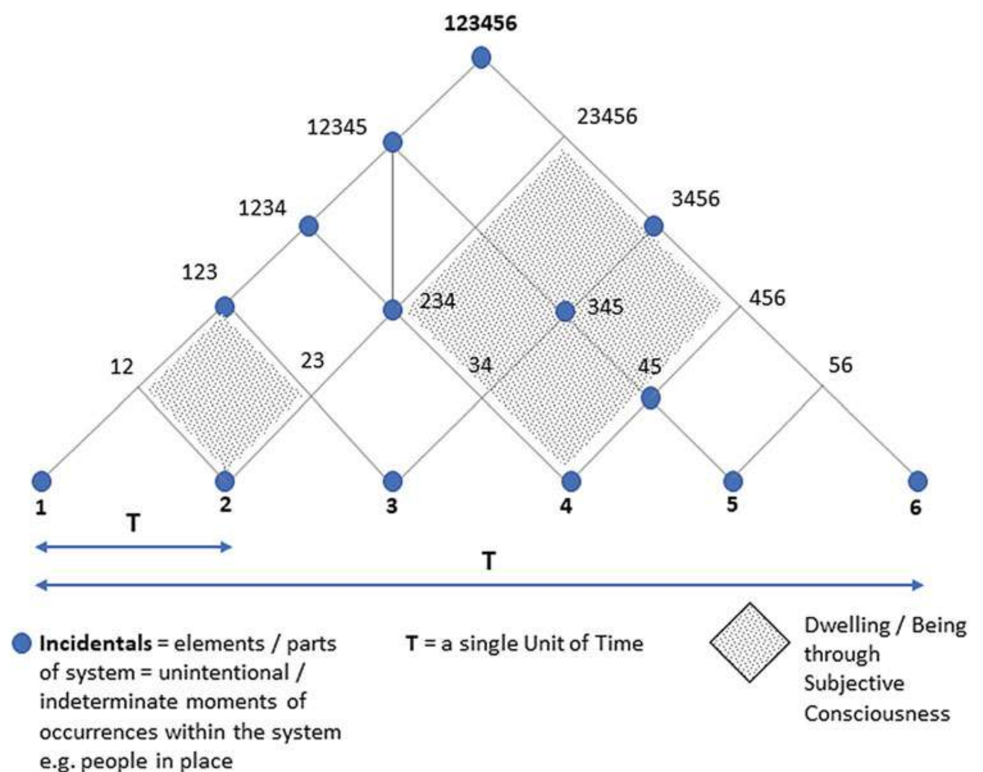

Fig. 3 Dwelling/Being through Indeterminate Incidental relationships in Time (Author, adapted from Alexander, 1966)

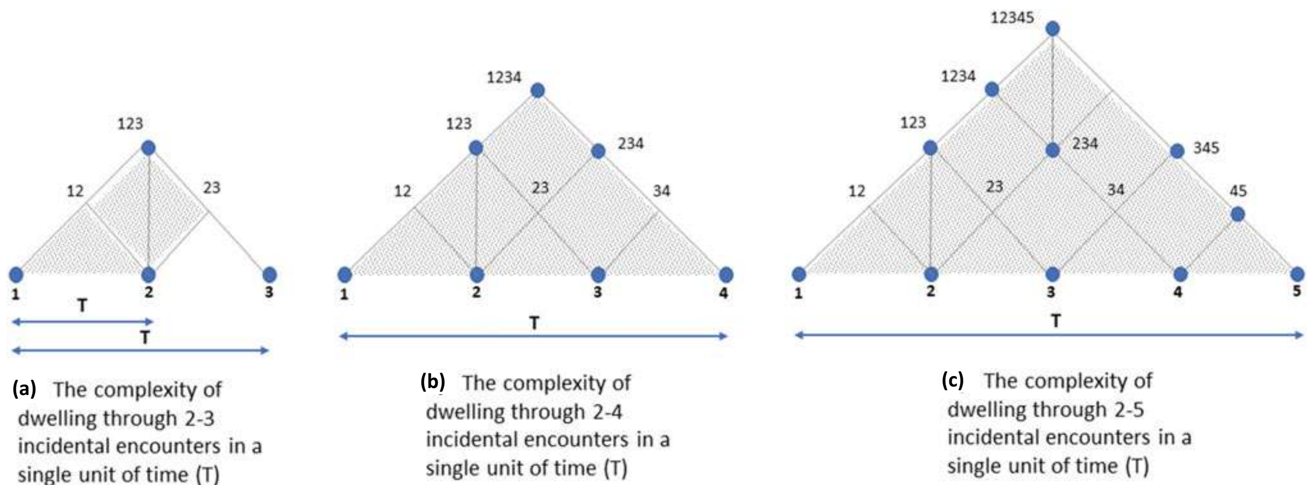

Fig. 4 The temporal scale of complexity in the experience of place

"quality without a name" (QWAN)—a spiritually rooted presence analogous to a rhizomic serpentine vitality that invigorates the spirit of place through time. Urban complexity is therefore considered a dynamic process of constant synergies between people in place and time, underpinned by a timeless spirit of place. Seaman (2016) refers to a phenomenology of wholeness in Alexander's work to explain the complex interrelationships between parts and whole in the interpretation of place.

Meaningful place-making therefore cannot be premised on what is essentially an indeterminate flux of socio-psycho-spiritual conditions of place; it is rather about the indeterminate choices that people make in the lived world, that characterises place (Alexander, 2001). The complexity of the phenomenology of wholeness is further expounded by Alexander (1964) which recorded his experience of a village in India as part of his research on beauty in order. His finding that the act of place-making itself would involve a considered experiential interpretation through conscious perception, to ultimately identify and reorganise "misfits" in complex urban systems, added a critical phenomenological layer of interpretation onto his mathematical analysis of place.

This paper posits that urban vitality is fundament on the interdependency of various moments—at macro to micro time scales—through consciousness in place. The critical importance of the time scale, that impacts the dynamic transformation of spaces into places through a type of continuous present, implies that urban design and architecture must factor in scales of measurement beyond the physical (Fig. 4).

> It is at the scale of the moment that design would be able to respond to the real complexity of urbanism in its multiple layers. Analysis and conception of place, therefore, can never be independent of the multisensory perceptions of people, in place over time (Luckan, 2021, in Magidimisha-Chipungu & Chipungu: 215).

To achieve inclusive places of urban experience, a heterogenous critical community of practice and knowledge generation fundament on the inclusion of multiple intelligences and experiences beyond the designer, is necessary. An alternative inclusive methodology would therefore require an epistemological shift to be able to understand the place complexities of Global South communities. A counter position to the predominant Global North modes of design thinking and practice is therefore necessary for the spatial transformation of Global South communities.

4 Conclusion

The paper explored possibilities for a complex mode of urban analysis and design that could spatially transform cities to express the nuanced identities of place. A re-problematisation of urban analysis, by looking at various layers of objective–subjective interrelationships, formed a deeper understanding of urban place complexity and vitality. It was found that an inclusive urban identity could be realised through the inclusion of subjectivist modes of design thinking at a level of consciousness in the experiential drama of urban life enacted by people at various spatial and temporal scales. Spatial transformation towards inclusive urban place-making could therefore be possible.

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My Mabopane: Opportunities of Photovoice to Support Inclusive Urban Green Space Engagement and Planning

Linette Knudsen, Maria Heines, Lwandiso Colo, Sifiso Ngcobo, and Maya Pasgaard

Abstract

Rapidly expanding disintegrated urban areas in developing economies are presented with social, climatic, and ecological challenges. Such challenges are expected to increase due to growing rates of urbanisation and new vulnerabilities imposed by climate change over the coming decades. Urban green spaces hold a potential to deliver practical solutions to climate mitigation whilst playing a role in improving the quality of life and providing socioeconomic opportunities for vulnerable communities. However, the benefits of green spaces can be compromised by unjust decision-making processes and inequitable allocation of costs and benefits within local communities. Set in the City of Tshwane, the My Mabopane photovoice project investigates the opportunities of photovoice to support inclusive green space engagement and planning in divided cities.

Keyword

Divided cities • Participatory planning • Photovoice • South Africa • Urban green spaces

L. Knudsen (✉) · M. Heines
University of Copenhagen, Copenhagen, Denmark
e-mail: lik@soc.ku.dk

M. Heines
e-mail: dqt382@alumni.ku.dk

L. Colo · S. Ngcobo
University of Pretoria, Pretoria, South Africa
e-mail: u13126972@tuks.co.za

S. Ngcobo
e-mail: u17397902@tuks.co.za

M. Pasgaard
Aarhus University, Aarhus, Denmark
e-mail: mapa@bio.au.dk

1 Introduction

Rapidly expanding disintegrated urban areas in developing economies are presented with social, climatic, and ecological challenges (Girma et al., 2019; Munien et al., 2015). Such challenges are expected to increase due to growing rates of urbanisation and new vulnerabilities imposed by climate change over the coming decades. To solve these issues, policy-makers and practitioners are turning their attention towards urban green spaces to deliver practical nature-based solutions to climate change and biodiversity loss whilst playing a role in improving the quality of life in vulnerable communities (Adegun, 2021; Jennings & Bamkole, 2019; Mensah et al., 2016; Pietilä et al., 2015; Zhong et al., 2020). However, benefits of green spaces, such as improved physical and mental health, enhancement of biodiversity, and alleviation of flooding and drought, can be compromised by a lack of awareness, unjust decision-making processes, and inequitable allocation of costs and benefits within local communities (Benyene & Borishe, 2021; Nesbitt et al., 2018). The aim of this study is to explore how photovoice can be used as a tool to improve the benefits to local communities that can be derived from urban green spaces using the case of the Mabopane River Corridor.

2 Background

Although South Africa became a democracy in 1994, the legacies of Apartheid are still felt today. These legacies are also present in the City of Tshwane where they are reflected both in the social and physical urban fabric which makes up the city (Horn, 2020). Following OECD's (2018, (3) definition of divided cities, as cities with "gaps and barriers that produce exclusive spaces and concentrations of disadvantage", Tshwane can be defined as a divided city due to racial segregation into predominantly black and white areas. This division is accompanied by unequal service delivery, where

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white areas enjoy more benefits in terms of access to public services like education, healthcare, water, and urban green spaces in comparison to predominantly black areas (Fiske & Ladd, 2006; Hamann & Horn, 2015; Mhlanga & Garidzirai, 2020; Myburgh et al., 2005; Schreiner & Van Koppen, 2003). When considering these inequities, local governments tend to prioritise the provisioning of basic services, such as housing and sanitation, over access to green spaces (Shackleton & Gwedla, 2021; Venter et al., 2020). This agenda has contributed to the deteriorated state of many urban green spaces in townships which also face pressures from encroachment and growing urban populations (Shackleton & Gwedla, 2021; Venter et al., 2020). Furthermore, the form and quality of green spaces differ between socioeconomic groups due to the limited maintenance of many public urban green spaces and lack of participatory planning that ensures that the existing spaces are created in accordance with the local needs (Adegun, 2018; de Vries & Kotze, 2016; Shackleton & Blair, 2013; Shackleton & Njwaxu, 2021). The township of Mabopane has been selected as the research site to assess the opportunities of photovoice to overcome these challenges linked to the divided city. Mabopane serves as an interesting case to understand the dynamics of the divided city, due to its location on the urban fringe, where it used to be a part of the independent Bophuthatswana, and its post-apartheid integration into the City of Tshwane (Horn, 2020). Within this setting we focus on an underutilised urban green space surrounding the iconic but deteriorating Odi Stadium. Challenges in this green space include dumping, crime, water contamination, and poorly maintained recreational facilities. Broader challenges facing the community as a whole include high rates of unemployment, crime, and drug use.

3 Methods

The choice of photovoice is grounded in its ability to support marginalised communities in addressing the challenges they encounter by allowing the participants to define the research, reflect on the issues their communities are facing, and present these to policy-makers with the aim of enabling social change (Barry et al., 2021; Powers & Freedman, 2012; Sutton-Brown, 2014; Wang & Burris, 1997). Photovoice places the camera in the hands of the research participants, which can help overcome traditional power imbalances in field research and imply a co-production of knowledge (Berbés-Blázquez et al., 2016; Sutton-Brown, 2014). This focus on participant perspectives can help elucidate local user needs and if successfully disseminated to urban planners can help create urban green spaces that fit the local challenges in divided cities. Photovoice activities took place in April 2022. The findings below are based on the process of implementing photovoice activities and preliminary data analysis.

4 Preliminary Findings

The planning stages of this photovoice project have shed light on how photovoice can contribute to high-level stakeholder collaboration, and how this collaborative approach holds opportunities for reciprocity, strengthening relationships, and knowledge dissemination.

Construction of the photovoice project has been informed by researchers, professional photographers, photography teachers, and local schools in a collaborative manner. This high level of collaboration has allowed for the tailoring of photography workshops to the specific needs of participants. For example, when working with a local secondary school the administration stressed the importance of the workshops being interactive and having tangible outputs which a student can utilise in their career development. In response to these requests, the photography workshops have been designed to use digital phone cameras to allow for activities where students can immediately engage with the process of photography. The second piece of feedback has been addressed by developing formal documentation of the skills participants gain, such as enhanced visual literacy, with a certificate that can be shown to future employers.

Preliminary data analysis suggests that running photovoice with an emphasis on collaboration can create many opportunities. The first is data collection which engages the community in a more reciprocal activity rather than being solely extractive. Through collaboration, the opportunity of reciprocity has emerged thanks to participants expressing what they want out of each photovoice workshop. Allowing for the avoidance of imposing photovoice for solely data collection purposes. The knock-on effect of this close collaboration also strengthens trust between the community and researchers. This opportunity of strengthening relationships then allows for data collection in a more open and comfortable environment. During photovoice workshops with secondary school students, supporting a comfortable environment led to high levels of participation, the sharing of personal stories, and supportive group dynamics. Additionally, participants felt comfortable asking questions about our research, revealing an opportunity for knowledge dissemination. The exhibition of the participants' photographs provided an opportunity for further knowledge dissemination and community feedback. For example, one visitor stressed how he valued the educational opportunity for these students and hoped to see more activities like this to bring

more people together at the green space, which holds a potential for increasing social cohesion in a neighbourhood, where interviews with local residents showed relatively high levels of distrust.

Despite this energising experience for local students and community participants, a major challenge of this project has been to engage ward councillors, policy-makers, and urban planners. As such, we experienced that the one-hour-long car journey from Pretoria CBD to Mabopane posed a barrier in terms of bringing municipal policy-makers out of their offices and into the community. This was further challenged by the short timespan of the photovoice project, which made it difficult to coordinate and organise times where all stakeholders were available. These challenges may be implicative of a broader trend of marginalisation and lack of service delivery to peripheral areas in divided cities (Beall et al., 2000; Resnick, 2014).

5 Conclusions and Implications

During the planning stages and preliminary analyses of our photovoice project implementation in Mabopane, South Africa, three highly connected opportunities for bolstering participatory planning in urban green spaces have been identified, namely reciprocity, strengthening relationships, and knowledge dissemination. These opportunities pave the way for meaningful community participation and involvement. Ideally, this has the potential to translate into inclusive urban green space planning that meets local needs when policy-makers and urban planning practitioners are successfully engaged. Unfortunately, during our photovoice project this final piece never quite fell into place. Further efforts on engaging policy-makers and practitioners through continuous communication to encourage municipal ownership and better partnerships between the local community and government may provide a useful step forward to tackle a larger trend of lack of commitment to peripheral communities in divided cities.

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The Political and Democratic City: The Place of Difference

Carolina de Oliveira Almeida and Denise Morado Nascimento

Abstract

Considering the current threats to democracy, the emergence of neo-fascist movements and the increasing inequalities present in the contemporary urban spaces, this article intends to discuss the relationship between politics, democracy and place, the last understood as the locus of individual and collective identities and as the scale of everyday life. The proposal is based on the transdisciplinary premise of *We* being transformed by the differences which constitute the relationship with *They* to configure an urban instrument proposal which could subvert institutional arrangements and dominant practices.

Keywords

Democracy • Reading the place • The political

1 Introduction

Considering the public policies in the Brazilian cities, the paper will demonstrate that, to a large extent, the urban interventions in the popular territories have been built upon an excluding perspective, since the urban problems have been historically diagnosed through generic criteria and universal indicators which have homogenized the inevitable differences present in the contemporary cities.

The first part of the article explores the politic agonistic model to demonstrate that the city is a place of differences since it links the political power and the citizens and also allows the emergence of the political. Then, the article critically explains how the *place reading* approach, which is distinct from the urban diagnosis approach, constitutes a strategy and, furthermore, designs a digital urban instrument that might strengthen the agonistic model and, therefore, the democracy.

2 Methodology and Theoretical Concepts

2.1 The Political and Place

From the analysis of the hegemonic democratic regimes (republican and liberal), Chantal Mouffe (2015) demonstrates that conflict is a human condition. The author says that any attempt to eliminate conflicts puts democratic regimes at risk. To support her argument, Mouffe (2015) distinguishes "politics" and "the political": "by 'the political' I mean the dimension of antagonism which I take to be constitutive of human societies, while by 'politics' I mean the set of practices and institutions through which an order is created, organizing human coexistence in the context of conflictuality provided by the political" (Mouffe, 2005, p. 9).

The political is "a space of power, conflict and antagonism" (Moufee, 2005, p. 9). On the other hand, the agonistic confrontation is made up of the relationship between *We* and *They*, where the opponent's legitimacy is recognized and the distinctions between friend, enemy and adversary are clear. According to Mouffe (2015), the agonistic model presumes a common, symbolic and democratic shared sphere in which the expression of conflicts is allowed. This means that the illusion of "a reconciled world" that would "overcome power, sovereignty and hegemony" shall be abandoned (Mouffe, 2005, p. 130).

The relationship between *We* and *They* is moved by the differences, which are advocated for the existence of equality and of individual and collective identities. In its fundamental essence, democracy must not eliminate such dichotomy through, for example, consensus. On the contrary, democracy must seek ways to establish confrontation and to create agonistic practices.

C. de Oliveira Almeida (✉) · D. M. Nascimento
School of Architecture, Universidade Federal de Minas Gerais (UFMG), Belo Horizonte, Brazil
e-mail: oalmeida.carolina@gmail.com

D. M. Nascimento
e-mail: dmorado@ufmg.br

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Thus, if differences mean confrontation that, doubtless, are present in the city and, therefore, in the popular territories, the concept of place emerges as a locus that involves social relations of conflict and, also, of cooperation. Therefore, "place is a meaningful site that combines location, locale, and sense of place" (Cresswell, 2009, p. 169). Space becomes a place when it is occupied, experienced and lived.

Massey (2000) brings up the problem of drawing and establishing institutional boundaries to places, since they define *We* against *They* and build an antagonistic relation between all. In this way, it becomes possible to add the place concept to the agonistic model, as it works to legitimize the relationship between *We* and *They* and also allows the political.

The article intends to point out how residents' narratives about their places reveal the complex, conflicted and heterogeneous popular territories in a distant way from the institutional perspective of the State. Therefore, places are the common, symbolic and democratic shared sphere where the politics happens.

An urban instrument of the Belo Horizonte City Hall is taken as a case study to unveil how the urban diagnosis approach is used to hegemonically portray the popular territories. Then, the *place reading* approach is presented aligned as a social technology instrument which has been built to represent and to access the narratives of the residents —an online digital platform [https://leituradolugar.arq.br].

3 Place Reading

The traditional and technocratic model of urban planning remains in Brazil. The urban diagnosis works as an instrument based on extensive technocratic surveys about the territories, which serves to qualitatively reduce places into a list of problems to be solved (Nassif, 2016).

Based on hegemonic indexes, indicators, concepts, and criteria, the urban diagnosis understands the city as a disease which can be treated by technicians, architects, urban planners, politicians and managers. It is also used to justify the urban players' actions and to impose their language game (information, maps, graphics, drawings) violently played against residents of popular territories (Nascimento, 2020).

An example of such urban planning instrument is the *Plano Global Específico* (PGE): a municipal public policy that aims to guide urban, environmental and social development through structural interventions in villages (or slums) with the main objective to improve residents' quality of life and to integrate the places into the city as a whole (Belo Horizonte City Hall, 2018). However, the linear process (data collection, diagnosis, data interpretation and policy proposition) is constituted by a fragile participatory process since residents do not comprehend its language game (Nassif, 2016) and by a false understanding of what the territories are since it does not have mechanisms which can be used to show the differences between each village in the city.

On the other hand, place reading is an approach to understand (and not to portray) the territories from the perspective of those who occupy them (Morado Nascimento, 2020). Reading a place is open to complexity and contradiction, since the residents are the ones who tell the urban players where and how they live and what they need as citizens.

The Place reading approach is supported by 14 lines of analysis which organize residents' narratives according to their actions (flows) in the territory due to (1) socio-economic pressure, (2) vulnerability, (3) pathways, (4) equipments-services, (5) actions, (6) fissures, (7) property, and to the objects (fixed) of the territory due to (8) urban capacity, (9) natural capacity, (10) articulations, (11) logic of occupation, (12) attributes, (13) separation lines and (14) large-scale urban projects (Morado Nascimento et al., 2019). The lines of analysis aim to break with the notion of pre-built problems to be diagnosed and to emerge historically excluded narratives from the popular territories' residents (Morado Nascimento et al., 2019).

The online platform Place reading, built by the research group PRAXIS-EA/UFMG, coordinated by Professor Denise Morado Nascimento, presents itself as a social technology which digitally organizes and politically makes the narratives of residents visible (see Figs. 1 and 2) in opposition to the urban diagnosis and turns the residents into protagonists of the production process of the city. The platform represents an urban instrument which allows the understanding of popular territories, since the residents' language game is inserted into the agonistic model.

To apply the theoretical-methodological approach of place reading and its lines of analysis, and then, of making the narratives politically visible, non-structured interviews were carried out with the popular territories' residents.

4 Implications

It is expected that the use of the urban diagnosis is deeply debated in opposition to the Place reading proposal and the elaboration of the current urban public policies. It is intended to eliminate the *We* and *They* dichotomy and to establish the democratic confrontation through agonistic practices. The urban diagnosis statically deals with the place through hegemonic indexes, indicators, concepts and criteria which justifies the universal interventions and excluding practices. On the other hand, the narratives of residents reveal the social complexity, the singularities of the territories and the individual and collective diversity. The goal is for the urban players to understand the city.

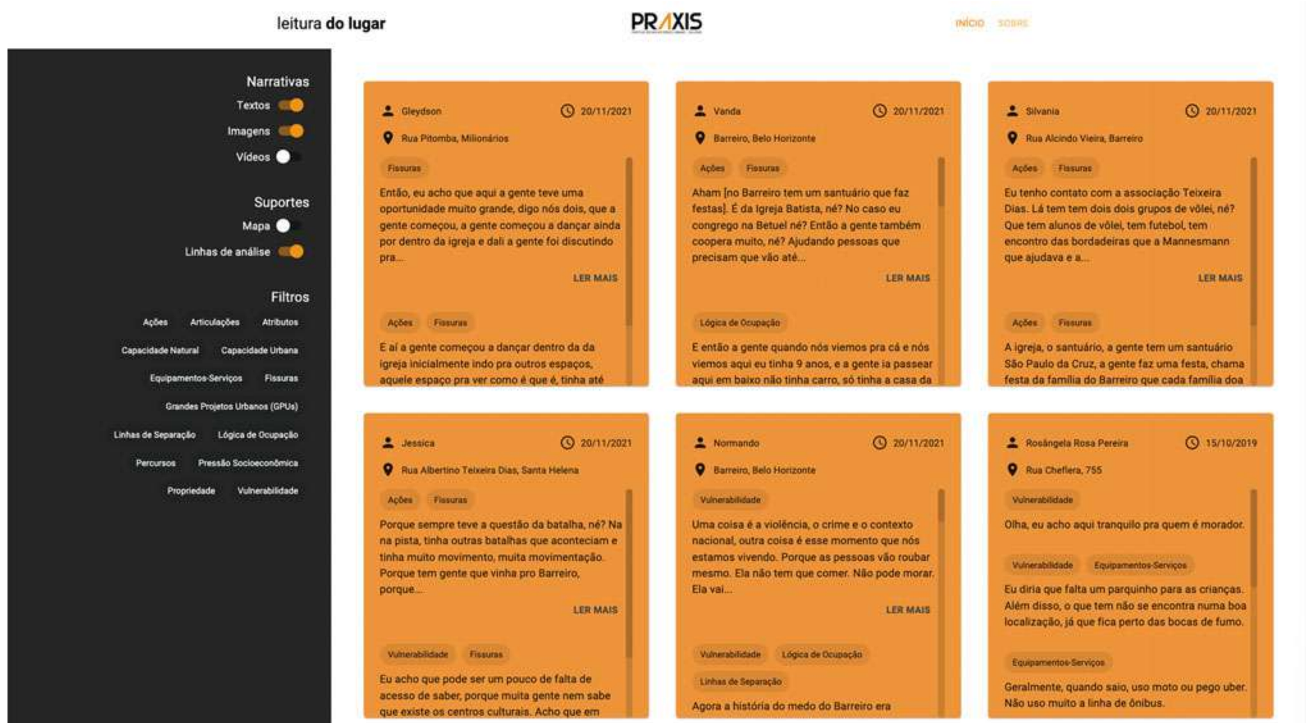

Fig. 1 Residents' narratives on the platform Place reading

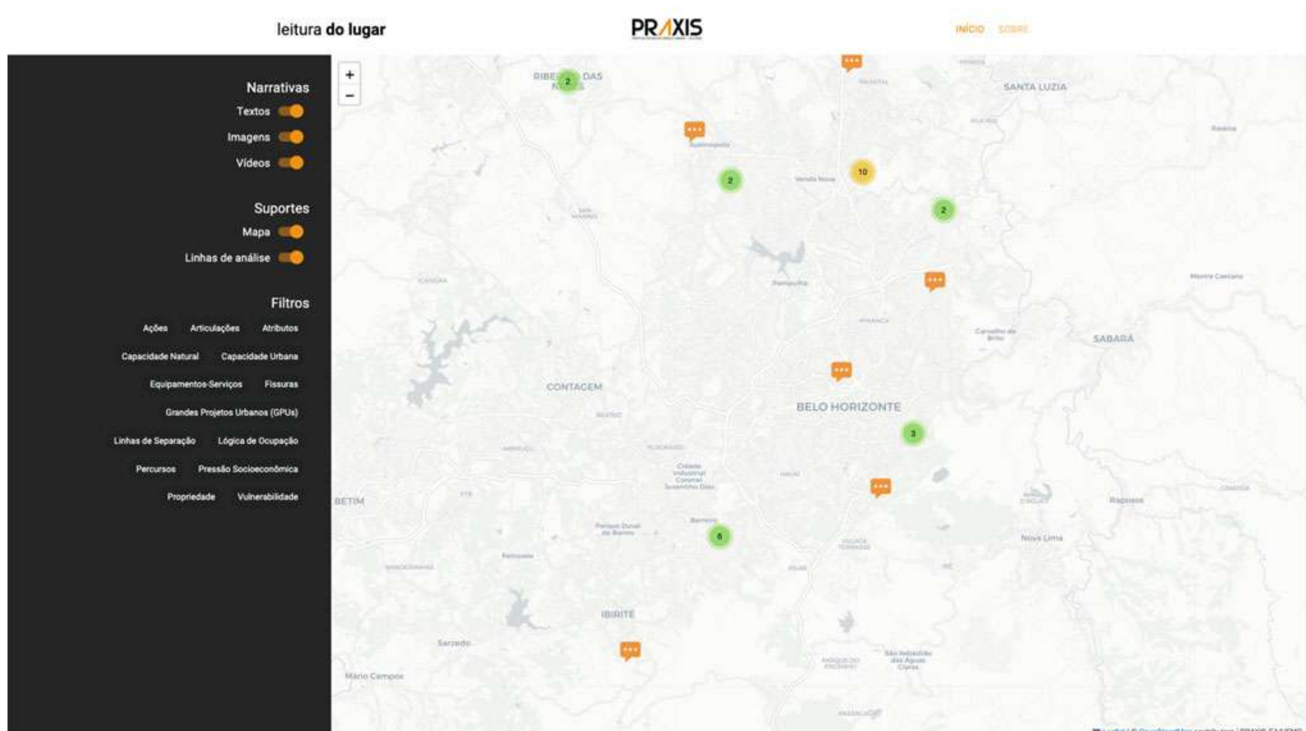

Fig. 2 Residents' narratives georeferenced on the platform Place reading

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Upsouth: Digitally Enabling Rangatahi (Youth) and Their Whānau (Families) to Build Critical and Creative Thinking Toward More Active Citizenship in Aotearoa New Zealand

Ayla Hoeta and Angus Donald Campbell

Abstract

In a post-colonial Aotearoa New Zealand, solutions by rangatahi (youth) for rangatahi are essential (Hunia et al., 2020), as are civic participation and building economic agency in an increasingly challenging economic climate. Upsouth was an online community crowdsourcing platform developed by The Southern Initiative in collaboration with Itsnoon (TSI, 2021), which provided rangatahi and whānau (family) a safe space to share a lived experience, thoughts, and ideas about local kaupapa (issues/topics) of importance to them (TSI, 2019b). This chapter contextualizes the potential and the challenges of rangatahi and whānau civic engagement in Aotearoa New Zealand, and presents a brief reflective case study of the Upsouth project with some of the unexpected outcomes, presented through examples. This chapter formed part of the *Urban Ecologies of Divided Cities 2022* conference *New Ground* sub-theme as a critical reflection on a design intervention, conceived and implemented by the lead author to overcome the post-colonial divisions of Māori, Pacific and minority ethnic rangatahi and whānau in South Auckland, Aotearoa New Zealand.

Keywords

Rangatahi • Youth empowerment • Civic engagement • Enabling • Relating • Digital platform • Participation • Critical thinking • Creative thinking

A. Hoeta · A. D. Campbell (✉)
Faculty of Creative Arts & Industries, Te Waka Tūhura | Elam School of Fine Arts & Design, Waipapa Taumata Rau | University of Auckland, Auckland, New Zealand
e-mail: angus.campbell@auckland.ac.nz

A. Hoeta
e-mail: ayla.hoeta@auckland.ac.nz

1 Whakatauki (Opening Proverb)

Tuia ki te rangi
Tuia ki te whenua
Tuia ki te moana

Bound by the sky, the land, the sea, and each other.

Everything and everyone is connected and nothing in isolation.

2 Background and Context

This chapter introduces Upsouth, a digital community platform for South Auckland rangatahi (youth) and their whānau (families), which aimed to build critical and creative thinking toward more active citizenship in Aotearoa New Zealand through tino rangatiratanga (self-sovereignty), whānaungatanga (strong whānau), and manaakitanga (nurture).

South Auckland has the largest and most diverse population of Māori and Pacific people than anywhere else. In the heart of the small suburban landscape almost one in ten (9% or 52,236) people who identify as Māori reside here (Waipareira Trust, 2017). In South Auckland, Māori and Pacific rangatahi and whānau face many challenges. The history of South Auckland has seen considerable growth in inequality and repeated issues of ill-considered city planning, insufficient housing, cultural segregation, and racial systemic issues that make it difficult for rangatahi and whānau to achieve and uphold tino rangatiratanga. In a post-colonial Aotearoa New Zealand, solutions by rangatahi (youth) for rangatahi are essential (Hunia et al., 2020), as is civic participation and building economic agency in an increasingly challenging economic climate. Upsouth is committed to enabling rangatahi-led stories, focusing on their place in South Auckland, fostering innovation, creativity, and critical thinking through tino rangatiratanga (self-sovereignty), whānaungatanga (strong whānau), and manaakitanga (nurture).

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Tino rangatiratanga is sovereignty, autonomy, control, self-determination, and independence (Smith, 1999). It allows and encourages Māori and indigenous peoples to reclaim and control their own culture, aspirations, and destiny (Smith, 1999) through expressing Māori tikanga (correct procedure), that is tika (true), aroha (with love), and pono (genuine). Due to a history of colonization, tino rangatiratanga has been a struggle. Upsouth aimed to embody tino rangatiratanga by acknowledging Māori tikanga, indigeneity, and Pacific values.

Whānau, meaning family, and whānaungatanga, meaning the practices that strengthen the connections, are central concepts within Māori and Pacific culture (Bishop & Glynn, 1999; Smith, 1999; Walker, 1990). The concept of whānau connects to the opening whakatauki which encompasses a Polynesian worldview, being holistic and connected to all life forces. Whānau emphasizes benefiting the collective rather than the individual, whether iwi (tribe), hapū (subtribe), whānau, or all people.

Manaakitanga is the standard of behavior of Māori (Mead, 2003; Martin, 2008). Manaakitanga is acknowledging and respecting the mana (authority) of others (Walker, 1990), through behaviors which express support, aroha (love), generosity, nurture, mutual respect, concern, equality, and humility (Mead, 2003). Thus, it was an obligation of the Upsouth platform to enhance these behaviors.

3 Research Design and Methodology

Upsouth was an online community crowdsourcing platform developed by The Southern Initiative, in collaboration with Itsnoon (TSI, 2021, 2022) that provided rangatahi and whānau (family) a safe space to share a lived experience, thoughts, and ideas about local kaupapa (issues/topics) of importance to them (TSI, 2019b).

The target participants were Māori, Pacific, and minority ethnic groups, aged 14–21 years. In the Aotearoa New Zealand context, this participant group is not likely to engage in traditional consultation processes (Auckland Council, 2020; TSI, 2019a) despite being an essential constituent in helping shape better local communities, whānau, and futures. Māori are tangata whenua (indigenous people of the land). Māori also means ma (to be pure) and oriori (intention), which is to be of pure intention.

The Upsouth platform was active for two years from 2017 to 2019 where it completed 42 callups with 4300+ participants. A callup was about a pressing challenge in a community such as climate change, a new housing development, homelessness, etc. Each callup was funded by a sponsor such as Auckland Council, Z Energy, or Auckland Transport to generate youth voice for a strategic plan, local initiative, or decision-making process. Upsouth collated the ideas, voices, and content from the callup and encouraged rangatahi to express themselves culturally, creatively, and freely through their choice of expression. This often resulted in artwork, song, dance, video, drawings, and poetry.

A key point of difference was Upsouth's payment and koha (donation) process. Participants were given koha through digital wallets and paid a financial reward for their ideas and contributions. Depending on the quality of the uploaded content, the koha varied between small micro-payments and large payments. This encouraged participants to develop their creative and critical thinking to improve their ideas and rewarded them as experts in their own lived experience and knowledge.

A reciprocal process was important to build a creative economy enabling youth-led action and developing skills for future-focused jobs and financial literacy. Upsouth challenged the current systems of acceptable community engagement by local governing bodies since many traditional engagement platforms are not as consultative, do not accept diverse types of feedback, nor incentivize this valuable expression of feedback. Upsouth was also empowering for rangatahi since it allowed them the opportunity to express their opinions directly to the government.

4 Unexpected Outcomes (Positive and Negative)

4.1 Banking and Financial Literacy

Financial literacy, basic banking skills, and Inland Revenue (IRD) accounts became key learnings for students, their schools, and Upsouth. It was apparent that some rangatahi up to the age of 16, did not own bank accounts and IRD numbers and needed support to create accounts and/or access existing IRD numbers. It was more common for Pacific rangatahi not to have personal bank accounts. We heard from some Pacific students that their whānau had one bank account holder in the household and income was directed to them. There were several of them who expressed a desire to have the independence of a personal account to earn for themselves; however needed guidance and permission from parents to set them up.

4.2 Technology Challenges: Data

Callup sponsors wanted to engage with data and feedback that was meaningful and creative, however data analysis

systems were limiting. Auckland Council and other organizations' data systems were not able to translate creative content due to their technical capabilities. Upsouth's platform data collection system was also unable to support the download of creative content through the platform and content had to be compiled manually into an excel report.

4.3 Rangatahi Ideas Connecting to Community Projects

Upsouth became an important connector and outlet for students to link existing schoolwork to projects and initiatives relevant to their community. Upsouth also connected students to projects where their designs could be sourced and commissioned. Trixie, aged 14, posted her idea to a call-up about preparing young people for the unpredictable future of work (Fig. 1). She created a picture of a person walking through a city, tracing and coloring her design, and posted this to the callup. She was later selected and earned a koha of $120. She went on to buy a digital tablet and make drawing commissions online and earned more koha for her designs.

> Upsouth is a website dedicated to South Auckland and you get paid for completing tasks that they post every month or two. A safe community to share your voice to other people and earn a few bucks. Young people like me who can't get a job at this age can earn money just for showing our creativity and talent that we have to our community. (Trixie, 2018)

There are two significant examples of how Upsouth enabled rangatahi ideas to be locally celebrated in the community-built environment. The first was Manukau Outdoor Gallery showing the public display of rangatahi artwork and ideas in the Manukau Square (Fig. 2). The work that was exhibited from local rangatahi who shared their stories, ideas, and images in the Upsouth callup "*what is the face of Manukau? What does this place mean to you?*" The exhibition displayed the abundance of knowledge and creative talent in South Auckland through 50 images and ideas that were selected for the gallery display from a total of 300 postings from the callup. The gallery display was open to the public (free of charge) and exhibited in outdoor public space for four weeks. In that period, they remained damage-free reflecting a great sense of mana (esteem) in an area that frequently receives vandalism.

Fig. 1 Video clip of Trixies submission. https://www.youtube.com/watch?v=TPRnL4lwSJI&t=2s

The second example was a light show video experience exhibiting rangatahi haiku (poems) and images inspired by Matariki on buildings during Matariki (Māori New Year celebration) (Fig. 3). During this festival, many images and 30 outstanding haiku were projected on the Manukau civic building for three nights during Matariki. As a way to celebrate the special time, whānau were invited to view the showcasing of the Matariki content, take pictures, and learn about the significance of the Māori New Year. The building was 35 m high, so the work of the rangatahi was made widely visible in their community.

5 Conclusion

This chapter has demonstrated the potential of Upsouth as an intervention to bridge the division between rangatahi students and whānau and government agencies to strengthen civic engagement in South Auckland and Aotearoa New Zealand. In line with the *Urban Ecologies of Divided Cities 2022* conference, through this reflective case study, we have explored key learnings and insights and the impacts that are affected by youth-led voices to overcome a city of divide and issues of misrepresentation, mistrust, and meaningful connections.

This case study demonstrated the potential for a project like Upsouth, which made use of local indigenous concepts from Aotearoa including tino rangatiratanga (self-sovereignty), whānaungatanga (strong whānau), and manaakitanga (nurture) to support the authentic bridging of government and local communities. Although there are still significant technological hurdles to the continuation of Upsouth, the success of the project in terms of the positive experiences of participants has led the authors to find ways to reconstitute the website to enable the continuation of the empowerment of rangatahi as agents of local community change.

Fig. 2 The Manukau outdoor gallery. Photo by Makerhood Manukau (used with permission)

Fig. 3 The Manukau light show exhibition. Photo by the Author

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Fog Water for a New Ground

Maria Giovanna Di Bitonto, Alara Kutlu, and Alessandra Zanelli

Abstract

The lack of equitable distribution of resources, including water, is one of the most influential causes of conflicts and divisions; in fact, the so-called "water wars" are on a constant increase. The aim of this paper is to give an alternative solution to hydric issues, through a new strategy, that is fog water collection. Many territories worldwide are affected by the fog phenomenon, those are defined as "fog oasis." Fog harvesting is documented to be an efficient system to collect water from fog, as confirmed by projects developed in many locations. In order to promote fog harvesting as a possible solution to restrain social, political, and environmental divisions caused by water issues, the authors are going to analyze some case studies in Africa. They were chosen based on local factors, including fog formation, and existing fog harvesting projects, in order to serve as a model for any other fog oasis. In Morocco, many villages are facing high levels of emigration, due to many factors, like water scarcity. The border between Ethiopia and Eritrea is the scenario of the Tigray war, which contributes to scarce water availability. The fog collector device is proposed as an architectural system that can be developed and integrated into a divided city, in order to heal and transform the hydric situation.

Keywords

Fog harvesting • Sustainable urban ecology • Water self-sufficiency

1 Introduction

The irregular distribution of resources and their controversial management can cause physical, political, and economic divisions, which provokes social inequality. Water is known as the most fundamental and indispensable of all natural resources (Ashton, 2002). Water scarcity is a global issue, but remarkably severe in arid areas, as Africa; where the growth of population, the contamination, between other factors, determine the growth of poverty, hunger, and diseases (Falkenmark, 1989; Gleick, 1998). Commonly water resources are lakes, rivers, and underground basins that often are located in the boundaries of countries, which share the supply; but, conflicts arise for their management (Ashton, 2000). Nevertheless, in the territories that are affected by the fog phenomenon, fog water has been documented to be an efficient resource of water (Klemm, 2012), as indicated in Fig. 1. Therefore, fog harvesting should be explored, in order to relieve the stress upon conventional water resources and diminish the conflicts.

2 Fog Harvesting

Fog water collection has been documented to be implied since ancient times in extreme territories. Fog is a meteorological phenomenon, it consists of water droplets suspended in the air. The collection of fog water is achieved thanks to the fog collector, the basic device is composed of a mesh and a structure exposed to the atmosphere on which the water contained in the air condenses and gets harvested. The device mostly used is the Large Fog Collector

M. G. Di Bitonto (✉) · A. Kutlu · A. Zanelli
Department of Architecture, Politecnico di Milano, Built Environment and Construction Engineering, Milan, Italy
e-mail: mariagiovanna.dibitonto@polimi.it

A. Kutlu
e-mail: alara.kutlu@polimi.it

A. Zanelli
e-mail: alessandra.zanelli@polimi.it

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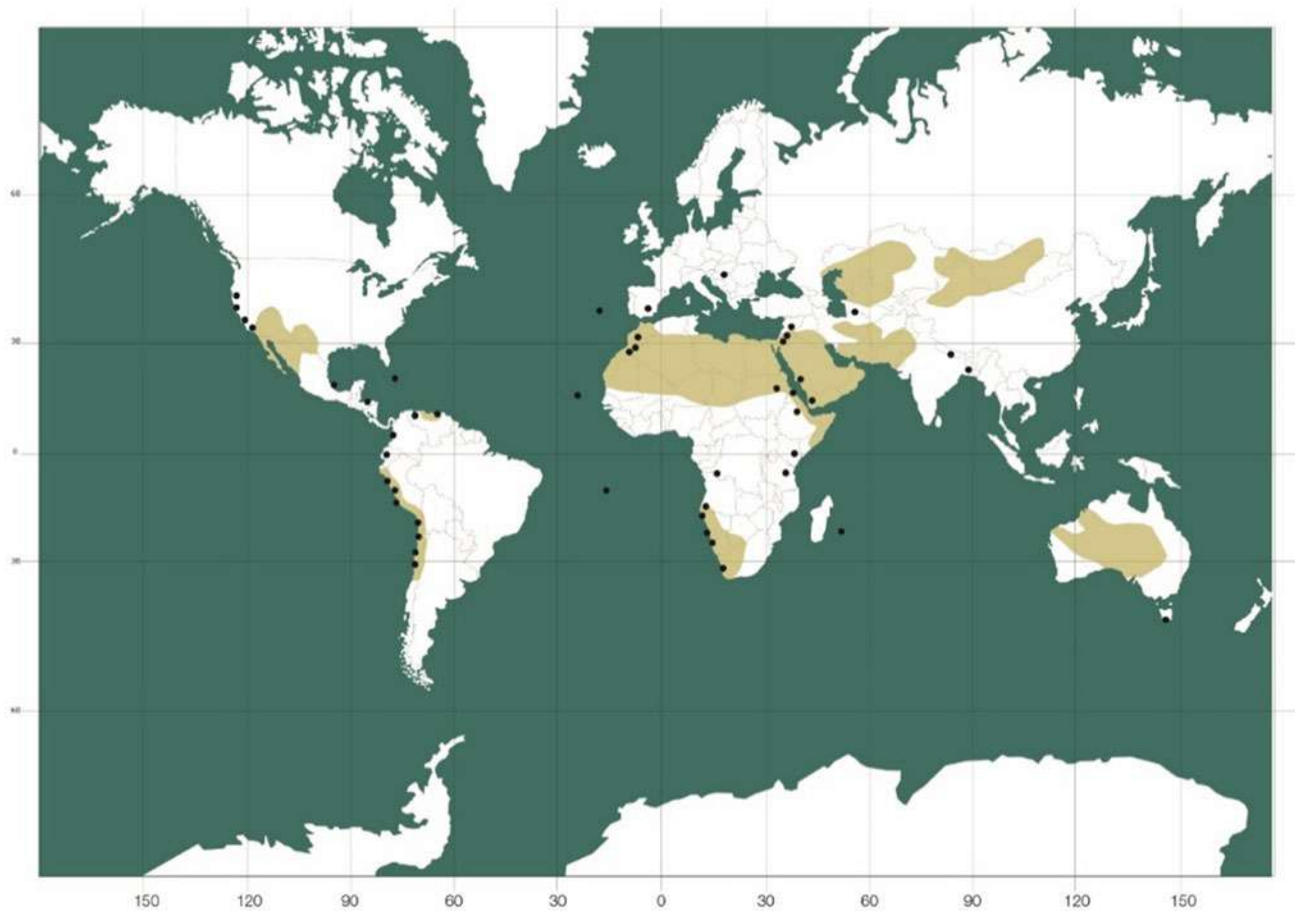

Fig. 1 Fog harvesting projects map, elaboration of the authors based on Klemm et al. (2012); Schemenauer and Cereceda (1994)

(LFC) (Shemenauer & Joe, 1989); while the one used to perform the experimental campaigns is the Standard Fog Collector (SFC) (Schemenauer & Cereceda, 1994). Several projects and testing campaigns have been developed in Africa, between them there are Morocco (Marzol, 2008, 2011), Eritrea (Fessahaye, 2017), Ethiopia (Hobson, 2016), Namibia (Shanyengana, 2002), and South Africa (Olivier, 2002). The capacity of water collection, registered in many African locations, varies from 4.5 to 3 l/m^2/d (Fesshaye et al., 2017) with the maximal amount registered corresponding to 22 l/m^2/d (Qadir et al., 2021). Currently, fog harvesting projects are located in rural areas to cover the missing distribution system, but the authors suggest their application also in urban context to support the existing hydric supply system.

3 Methodology

In order to have a model for developing fog collection system in any fog oasis, some existing fog harvesting projects have been analyzed. They have been selected to demonstrate the potentiality of this technology to solve divisions caused by water issues. The analysis has been carried out regarding the amount of water collected, the practical purpose and type of structure used. To implement this technology on a larger scale and in a different context, the authors are considering the configuration of the case studies' system together with the novel project requirements.

4 Multicriteria Analysis and Discussion

4.1 Morocco

Due to the decrease of precipitation in Morocco, the productivity depends more on irrigation systems, which exploit 15–100% of freshwater withdrawal (FAO, 2018). Therefore, inadequate water management may have significant economic and social consequences, including unemployment and migration (Taheripour et al., 2020). From 2006 to 2009, the University of La Laguna together with the Si Hmad Derham Foundation has been conducting an experimental research about fog harvesting, using LFC, to provide water

to the local population of Mount Boutmezguida, located at 1225 m a.s.l., and 30 km inland southeast of Sidi Ifni. In this area, the poor economic situation derived from water scarcity led to voluntary male emigration. The Moroccan foundation conducted a survey of the local community for determining the water requirements, to define the LFCs installation, including water storage tanks and a water treatment technology to make the water potable. For this reason an experimental campaign, to determine the potentiality of fog water collection, has been developed. The tests resulted in a collection average of 10.5 l/m^2/day during the period December–June; instead, in the other five months, only an average of 4.8 l/m^2/day was registered (Marzol et al., 2011). Another area of Morocco has been studied simultaneously with Mount Boutmezguida, to understand the effect of local conditions on fog water collection; in particular, altitude, orientation, and distance from the coast. A test campaign has been conducted in Boulaalam, which is located on the summit of the coastal hills, very close to the capital Sidi Ifni, 4 km from the coast and at an altitude of 300 m a.s.l.. The test resulted in a mean water collection of 1.9 l/m^2/d, being the period June–August the one that has registered the most. Despite the fact that the costal location resulted to be less performative than the inland mountains, fog is more frequent in Boulaalam, with an average of 169 fog days per year, while just 100 at Boutmezguida (Marzol & Sánchez, 2008). Even though those two case studies show that the urban experiment, developed in Boulaalam, resulted to collect the lowest amount of water, still the fog collection application in urban environment would be feasible as an additional water supply.

4.2 Eritrea

According to the UN, the Tigray conflict between Ethiopia and Eritrea is the major cause of water scarcity (de Waal, 2021), affecting 2.2 million people in the region (Mlaba, 2021). The Tekeze River, which is the main water source to its neighboring countries, has been contaminated by agricultural activity (Awoke et al., 2016) and by the refugees settled in emergency camps along the river (Samson, 2021). This territory is suitable for fog water collection, which can serve as a possible remedy to the water problem; therefore it can eventually decrease the dependence on contaminated water sources. In 2005 a feasibility study was conducted by Water Foundation in collaboration with FogQuest in four villages in Eritrea, to evaluate the daily rates of fog water collection. After, a fog water collection pilot project was implemented in 2007 in the selected villages of Arborobue (2085 m.a.s.l.) and Nefasit (1725 m.a.s.l.), located at 11 and 25 km from the Capital Asmara, respectively, in areas where conventional water delivery systems are not feasible. In these locations 10 LFCs have been installed water reservoir and a distribution with a network pipelines that delivers water by gravity. The project resulted in an annual fog water collection rate of 3.1 l/m^2/d in Arborobue and 1.4 l/m^2/d in Nefasit (Fessehaye et al., 2017). Five years after the installation, the populations have been interviewed about four major aspects of the technology: technical, economic, management, and social. It emerged that the LFCs' technology requires much maintenance, which implies higher costs, time, and specialized labors, at the actual state the system is not economically convenient, but with some technological changes, such as structure and mesh design, can improve its performance up to 50% (Rivera, 2011).

5 Feasibility Considerations, Toward Novel Fog Harvesting Lightweight Infrastructures

The analysis of the case studies was done for a future potential extension of the technology to other areas and uses. Despite the fact that the LFC is the device usually used in fog harvesting projects, the fog collector is a flexible tool which design can be customized for integrating it in many application fields, such as the urban environment, for domestic purpose. Moreover, a novel fog harvesting architectural system, that is ultra-lightweight and easily manageable, can be developed and extended creating a water infrastructure also applicable in the design of emergency camps and villages. Depending on the location, fog may not be always present along the year, therefore supplementary water sources may be needed to meet year-round water demand. Due to the fact that the air in rural areas is not contaminated, the atmospheric water collected is clean and can be used immediately; nevertheless, when collecting fog in a polluted urban environment, the collected water must go through filtering and disinfecting processes.

6 Conclusions

It is proved that fog water harvesting represents an optimal alternative source in arid territories affected by fog phenomenon (Klemm, 2012). The case studies analyzed represent models for the application of this technology to other territories that face the same problems, to restrain social, political, and environmental divisions related to water issues. The assessment of the case studies demonstrated that fog can be used as a main water source for beneficiaries with limited water demand, including public services such as schools and health facilities. The challenge consists in the design of a novel fog collector with major efficiency rate, which can meet the higher demands of water in the urban environment.

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Learning from Architects Who Engage in the Upgrade of Informal Settlement Programmes (UISP) in South Africa

Jason Oberholster, Carin Combrinck, and Hettie Carina Schönfeldt

Abstract

South Africa has a progressive human settlements policy that makes provision for the in-situ upgrading of informal settlements, aimed towards the holistic integration of informal settlements into the urban and socio-economic fabric of cities. However, the rising number of informal settlements and the dissatisfaction amongst informal settlement dwellers indicate a disjunction between these policies and the implementation thereof. It is argued that upgrading initiatives should be the result of a wide and inclusive participatory process, involving governments, public and private sectors, appropriate professionals and most importantly the communities as key stakeholders. Despite indications that the architectural profession has a role to play in the upgrading of informal settlements, their participation in these upgrading processes remains poorly defined and unrecognised. This paper reflects on selected upgrade projects where architects have engaged successfully and what lessons can be learnt from these. In the projects that have been selected, the architectural professionals took on the various roles of facilitator, collaborator, contributor and stakeholder. These roles have enabled a shared understanding of the contextual needs of each community, beyond the conventional investigations within the Upgrading of Informal Settlements Programme (UISP), thereby empowering these communities to envision beyond the evident, and assisting in balancing the collective aspirations of the individuals. These examples demonstrate a possible contribution by architects towards ensuring the future livelihoods of these communities, working towards achieving spatial equity through spatial agency.

Keywords

Meaningful engagement • Facilitation • Community participation • Community engagement • Spatial agency

J. Oberholster (✉)
Professional Architect and Part-Time Lecturer, Department of Architecture, University of Pretoria, Pretoria, South Africa
e-mail: u12034968@tuks.co.za

C. Combrinck
Doctor of Architecture, Professional Architect and Senior Lecturer, Department of Architecture, University of Pretoria, Pretoria, South Africa
e-mail: Carin.Combrinck@up.ac.za

H. C. Schönfeldt
DSI/NRF/NDP SARChI Chair in Nutrition and Food Security, Department of Animal Science, University of Pretoria, Pretoria, South Africa
e-mail: Hettie.Schonfeldt@up.ac.za

1 Extended Abstract

1.1 Introduction

Despite a progressive array of government policies aimed at addressing socio-spatial injustices of the past through urban integration and the in-situ upgrading of informal settlements, their implementation remains slow and cumbersome, leading to increased tensions in the urban realm (Cirolia et al., 2016, pp. 6–8; Huchzermeyer, 2011, pp. 112–138; SERI, 2018, p. 5). International discourse emphasises the importance of partnerships in driving these complex processes through meaningful engagement (Huchzermeyer, 2011; PSUP, 2015; UN-Habitat, 2016). In particular, the role that architects could play is becoming increasingly relevant (Awan et al., 2013; Boonyabancha, 2005; Combrinck, 2015, p. 4). It is the aim of this paper to illustrate how architects have made such contributions in certain upgrading projects undertaken in South Africa.

The paper will demonstrate this by way of selected examples considered through the lens of competencies associated with 'meaningful engagement'(Suarez-Balcazar, 2020) and 'facilitation' (Lefore, 2015). Problem statement.

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Current South African housing codes indicate no recognition of the architectural profession within the in-situ upgrading of informal settlements (Combrinck and Bennett, 2016, p. 309). However, the Architectural Professions Act (No. 44 of 2000) suggests that the profession may render services that extend beyond the building envelope. This paper argues that a further understanding of 'meaningful engagement' (Suarez-Balcazar, 2020) and 'facilitation'(Lefore, 2015) may serve to explicitly include the profession in the UISP.

1.2 Literature Review

Informal settlement discourse highlights complex global challenges requiring the participation of multiple stakeholders. However, Cirolia et al. (2016, p. 3) state that the manifestation, implications and consequences of these challenges are distinctive in particular contexts, and their complexity points to a need for 'meaningful engagement' from all sectors. Van der Berg (2012) argues for a 'positive conceptualisation of meaningful engagement as substance-infused procedural fairness', to arrive at the full scope of the constitutional intention of the term, which according to Suarez-Balcazar (2020) may result in truly meaningful partnerships where knowledge may be co-created.

The UISP describes the need to 'Create and Sustain a Participatory Environment' (SA DHS, 2009, p. 32), thereby suggesting the requirement for facilitation. Competencies associated with facilitation (Lefore, 2015, p. 121) include 'abilities for scoping, partnering, networking, mediation, policy advocacy, and ensuring a process is transparent and equitable'. This would therefore be evident where the architect creates a collaborative environment, plans appropriate stakeholder processes, thereby guiding stakeholders to appropriate and useful outcomes. Although the UISP makes provision for the deployment of professionals, articulation of these requisite skills remains vague (Combrinck and Bennett, 2016, p. 307).

In a recent description of competencies associated with the architectural profession (SA, 2021, p. 91–92), it is stated that it is the responsibility of the professional architect to consider the urban and social impact of built interventions, in as far as they are concerned with environmental, cultural and social value beyond the physical building alone. In particular these competencies are seen to extend beyond what is commonly viewed as built infrastructure: 'The development of social compacts to address the needs of the community and the use of local materials and local labour can benefit communities, organisational and skills development as well as local economies' (SA, 2021, p. 91–92). We therefore argue that implicit to these competencies are the requirements for 'meaningful engagement' and 'facilitation'.

1.3 Potential Significance of the Work

The significance of the work lies in its consideration of the currently unrecognised role that the architectural profession could play in the implementation of upgrading policies. By acknowledging the value that has been brought to selected projects and analysing the nature of their contribution, this paper demonstrates how architects may be included as significant stakeholders in the implementation of policies that rely on 'meaningful engagement' and 'facilitation' competencies that are implicit in the skills set of the profession.

1.4 Theoretical and Methodological Approaches

Paradigm. The paper follows a qualitative research method that is situated within the constructivist research paradigm (Groat and Wang, 2013, pp. 78–79; Kivunja and Kuyini, 2017, p. 33). This methodology allows the researcher to delve into the contextual conditions inscribed within the UISP (Yin, 2014, p. 18). Kivunja and Kuyini (2017, p. 33) explain that the paradigm assumes a subjectivist epistemology, where the research is conducted and analysed through the cognitive processing of data informed by the interactive engagement with the research, and further assuming a relativist ontology (Groat and Wang, 2013, p. 79; Kivunja and Kuyini, 2017, p. 33).

Method. A desktop review was undertaken of projects completed since the establishment of the UISP in 2004. Eight examples were selected based on the involvement of architects in the process and their stated intent to contribute to the UISP. Examples explored vary in scale and location across the country, with differing levels of involvement by architectural professionals.

Analysis. Defining characteristics of 'meaningful engagement' and 'facilitation' were used to establish a matrix of analysis to identify how these competencies were integral to the contribution that the architectural professionals brought to the upgrade processes. A 'thematic analysis' (Nowell et al., 2017, p. 2) was followed with a deductive approach based on the themes identified within 'meaningful engagement' and 'facilitation' as the framing lens to understand the competencies required within the implementation of the UISP.

1.5 Major Findings

Architectural professionals have meaningfully engaged in various projects since 2004 that have formed part of upgrading processes within informal settlements. Bottom-up processes are followed by the Violence Prevention through Urban Upgrading (VPUU, 2016) project that is explicitly

aimed at a participatory approach of developing Community Action Plans. Community representatives are identified at the beginning of any project to ensure that engagement processes are meaningful and comprehensive (VPUU, 2016). This participatory approach is also followed by architects such as Carin Smuts and Urban Think Tank, where architects have engaged with communities in a dynamic environment, facilitating needs analysis with the communities and co-designing projects from brief to implementation (Architizer, 2017; CS Studio, 2008; Equity Studio, 2011).

Projects undertaken by One to One Agency of Engagement vary in scale from mobile phone applications and workshop toolkits to the facilitation of upgrade projects. In all their resources, the emphasis is on engagement and facilitation, identifying themselves as socio-technical agents of development (1TO1—Agency of Engagement, n.d.). Architects from Yes & Studio support this notion of meaningful engagement and facilitation through their active collaborations with informal settlement communities and relevant stakeholders in their research and design phases, aiming towards the facilitation of well-being in the community (Yes & Studio, 2022).

The story of Sweet Home Farm in Philippi, Cape Town, is recorded by Habitat for Humanity and speaks of the successful participatory process that was followed by the team of UBU (2016). Emphasis is on the activation of the community to become inspired to participate, rather than following a top-down approach to development (UBU, 2016). Through their emphasis on enablement and collaboration with the SA SDI Alliance, IShack is contributing towards capacity building in numerous projects across the Western Cape region (iShack Project, 2016). The Table House project by Jo Noero has developed collaboration with the local NGO and community members that enables the dwellers to develop skills and improve their living conditions (Melvin, 2017).

These examples indicate 'meaningful engagement' by architectural professionals through various mechanisms of 'facilitation' to ultimately contribute to upgrading processes within informal settlements.

2 Conclusions

The benefits of 'meaningful engagement' by architectural professionals with informal settlement communities are illustrated through the selected examples. Here the architectural professionals took on the various roles of facilitator, collaborator, contributor and stakeholder. Such roles have enabled a shared understanding of the contextual needs of each community, beyond the conventional investigations within the UISP, in that way empowering communities to envision beyond the evident, and assisting in balancing the collective aspirations of the individuals. The examples demonstrate a possible contribution by architects towards ensuring the future livelihoods of these communities, working towards achieving spatial equity through agency. We have learned from this study that the legislative apparatus aimed at the upgrade of informal settlements would benefit from the explicit inclusion of the architectural profession as role player in this process.

3 Implications for Further Research

Further to this research we propose that the general architectural competencies can be more specifically articulated to indicate how they reach beyond technical skills and contribute towards 'meaningful engagement' and 'facilitation', as well as the necessity for the specific inclusion of the profession within the UISP and consequential upgrading strategies.

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Addressing Housing Inequalities in Post-conflict Belfast: A Transformative Justice Approach

Caitriona Mackel

Abstract

Belfast is a deeply divided city not just politically, socially, and economically but physically. It is a city shaped by its history, its experiences of violent conflict, and its post-conflict transition. A collage of so-called peace walls segregates the city's neighbourhoods creating some of the most deprived areas where inequalities are exacerbated by the tension and sectarianism that segregation reinforces. Historical and new inequalities in the provision and allocation of social housing affect many vulnerable individuals and communities. The challenge of navigating housing in a politically and physically divided city has resulted in failed opportunities to address these inequalities. Addressing the legacy of violence and human rights violations is central to building sustainable peace. If we acknowledge that socio-economic inequalities are not only a consequence of violent conflict but a root cause, then we must also acknowledge that correcting these inequalities is an essential component of post-conflict policy. Under a transformative justice approach to peacebuilding, affirmative action programmes, and grassroots social movements, such as the Right to the City, could be utilised to reshape housing policy and address chronic housing inequalities in post-conflict Belfast. In doing so we could look to the future as well as deal with the past.

Keywords

Housing inequality • Transformative justice • Affirmative action • Divided cities

C. Mackel (✉)
University of Ulster, Researcher at the Transitional Justice Institute, Newtownabbey, Northern Ireland
e-mail: mackel-c1@ulster.ac.uk

1 Introduction

The big question for the field of transitional justice is how its mechanisms can take better account of socio-economic issues and whether these mechanisms are adequate or appropriate (Evans, 2018). A number of practitioners suggest the transitional justice 'toolkit' must be expanded to more effectively confront violations of socio-economic rights, address the needs of victims, and assist in societal transformation. My work, in progress, examines how affirmative action could be integrated into this 'toolkit' to better address socio-economic inequalities in post-conflict societies. An in-depth investigation of the use of affirmative action to address one socio-economic inequality within one transitional setting is required. Accordingly, the problem of new, existing, and persistent housing inequalities in post-conflict Belfast has been selected as an illustrative case study to demonstrate the power of affirmative action in dealing with the past and reshaping the future. The main objective is to analyse the effectiveness of existing affirmative action programmes in the United States (US), South Africa, and Northern Ireland (NI) to produce a regulatory framework for addressing housing inequalities in post-conflict Belfast.

2 Problem Statement

Across Belfast, physical barriers create divided spaces in which inequalities prevail and reconciliation seems a world away. Belfast's so-called peace walls and the complex challenges they maintain are a bleak reminder that the most vulnerable have been neglected on NI's road to peace. Inequalities are exacerbated by the isolation, fear, and sectarian violence that dictates the narrative of everyday life in the shadows of Belfast's defensive architecture. Housing is a particularly deep-rooted issue; the discriminatory allocation of which was a key theme of the civil rights movement that

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sparked 30 years of violent conflict. Being afforded the right to housing through a country's constitution, legislation, or commitment to internationally binding treaties does not always result in adequate housing for all. NI is no exception. In its 2017 'Statement on Inequalities in Housing and Communities' the Equality Commission for NI (ECNI) identified 7 key housing inequalities.[1] As the largest and most segregated city, Belfast is home to the highest number of individuals impacted by the most significant housing inequalities such as unequal access to adequate housing; overcrowding; housing stress; homelessness; higher waiting lists; and longer waiting times (ECNI, 2017).

In 1990 the Standing Advisory Commission on Human Rights (SACHR) produced its second report on discrimination and equality of opportunity in NI focused solely on housing. In stark contrast to their first report on employment, which embraced a regulatory affirmative action framework to address inequality, the report on housing took a much softer approach. It highlighted that affirmative action measures deserved careful consideration but political pressure and opposition from the NI Housing Executive resulted in no express recommendation of regulatory measures. The challenge of navigating housing in a politically and physically divided city resulted in a failed opportunity to adopt statutory procedures which could have addressed historical inequalities and prevented new inequalities from arising.

3 Significance of the Work

Yuvraj Joshi argues that affirmative action could reorientate transitioning societies towards a better understanding of socio-economic inequalities. By making affirmative action part of the transitional justice 'toolkit' transitioning societies benefit from the attention affirmative action brings to the socio-economic consequences of the past (Joshi, 2020). Joshi proposes he is the first to offer an integrated approach of affirmative action as transitional justice filling a gap in the current literature by bridging two fields 'that share several conceptual and normative concerns yet until now have remained largely isolated from one another' (Joshi, 2020, p. 1). A robust legal affirmative action framework currently exists in NI in the context of employment and empirical evidence demonstrates that regulatory monitoring and enforcement have resulted in an increased employment share for previously under-represented groups and a shift towards workforce integration (Muttarak, et al., 2012). My research seeks to advance further on this by examining how similar regulatory affirmative action measures could be applied to address chronic housing inequalities.

4 Theoretical and Methodological Approach

This study draws upon the theories of transformative justice, substantive equality, and new social movements and illustrates how these concepts, and the relationships between them, reinforce the argument that affirmative action is a legitimate tool to address socio-economic inequalities, discrimination, and disadvantage in post-conflict transition.

By focusing predominantly on civil and political rights violations through a narrow set of legal remedies, transitional justice often overlooks violations of socio-economic rights and the impact of harm on victims and wider society. To modify post-conflict structures in ways that are more inclusive, equal, and fair we must consider a concept of justice that is more transformative (Gready, et al., 2010). Transformative justice broadens 'the focus of measures aimed at promoting post-conflict or post-authoritarian justice for human rights abuses beyond that of transitional justice'(Evans, 2018, p. 37). Transformative justice places greater emphasis on socio-economic rights, the impact of violations on victims and wider society, and remedies for addressing these (Evans, 2018).

Instead of aiming to treat all people alike substantive equality aims to correct disadvantages by focusing on the detrimental consequences attached to an individual's status or group identity (Fredman, 2011). Fredman (2011) suggests that affirmative action advances substantive equality by actively taking steps to redress inequality, discrimination, and disadvantage as well as prejudice within one concept. Barnard and Hepple (2000) suggest that under a substantive approach to equality special measures such as affirmative action can be used to overcome the under-representation of disadvantaged groups in the workplace or ensure their fair share in the distribution of resources (Barnard & Hepple, 2000, p. 565). A substantive equality framework provides the space to justify the consideration of affirmative action policies to address housing inequalities in NI. The development of affirmative action policies focused on equitable outcomes and opportunities could address the lingering consequences of NI's violent past.

Urban social movements are increasingly considered an important part of urban governance processes with local activists influencing decision-making through participation practices and legal tools (Domaradzka, 2018). Domaradzka (2018) argues that the global spread of successful Right to the City movements illustrates the power of collectives

[1] Longer waiting times for Catholic applicants; limited access to appropriate accommodation for Travellers; Susceptibility of migrant workers to tied accommodation with poor conditions; vulnerability of racial attacks on the homes of ethnic minorities/migrant groups; limitations on independent living for people with learning difficulties; people with disabilities living in homes inadequate for disability-related needs; and the harassment/safety of lesbian, gay, and bisexual people.

coming together under a common agenda to achieve social justice in the face of growing urban inequalities. The rationale for taking a more transformative approach to addressing housing inequalities in Belfast is reinforced by the capacity of collective action to reshape policy and practice and effect lasting change across an urban agenda that is broader than just housing.

This study is conducted within an interdisciplinary, socio-legal framework using comparative analysis, and semi-structured interviews. Comparative analysis will be conducted on the use of affirmative action and the role of social movements in addressing socio-economic inequalities in the US, South Africa, and NI. Data will be obtained from legislation, case law, and literature on the implementation and enforcement of legal affirmative action obligations. Empirical data will also be obtained on the effectiveness of these obligations in addressing discrimination and segregation. The purpose is to identify and draw upon similarities and differences to determine how the implementation of affirmative action measures could address housing inequalities in post-conflict Belfast.

As Belfast has been selected as an illustrative case study semi-structured interviews will be conducted within NI. Primary interview targets will include representatives from government and public bodies, NGOs, and community groups who are directly involved in the provision of social housing, the development of housing policy, and the monitoring of inequalities. Participants will include representatives from the Department for Communities; the NI Housing Executive; social housing providers; ECNI; the Participation and Practice of Rights; the Market Development Association; and political parties. Approximately 15–20 interviews will be conducted using a set of predetermined, open-ended questions designed to encourage participants to openly discuss their views on how the implementation and enforcement of affirmative action could effectively address chronic housing inequalities in Belfast. Participants will also be asked about their thoughts and experiences of social movements and actors in shaping decision-making, policy development, and community-focused human rights indicators.

5 Anticipated Findings, Conclusions, and Implications

It is anticipated that this research will illuminate how regulatory measures could be applied effectively to address chronic housing inequalities in Belfast and demonstrate that the timing is now right to apply such policies, as considered by SACHR. Ultimately, this research seeks to uncover the power of integrating affirmative action into the transitional justice toolkit for addressing socio-economic inequalities far beyond the borders of NI's most divided city.

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Territories and Taxonomies

Spatial Inequality of Accessibility to Urban Parks: Case Study of Auckland Public Housing Developments

I.-Ting Chuang, Jessie Colbert, and Katarzyna Sila-Nowicka

Abstract

The impact of poor spatial accessibility of urban parks is specifically critical for the more disadvantaged population that suffers from greater risks of social–economical-related health inequalities. In this paper, we use a mobile locational dataset collected in 2020 to investigate accessibility to urban green spaces for the top (with) and bottom (without) 25% of public housing neighbourhoods in Auckland region, New Zealand. We analysed the distance from residents' home locations and centroids of a 300mx300m grid to the nearest park by both Euclidean and network analysis and explored the relation between accessibility to urban green and neighbourhood deprivation (indexed by the New Zealand Index of Multiple Deprivation 2018). The results reveal that neighbourhoods with a higher deprivation index quintile ranking also have lower accessibility to urban greens in Auckland, highlighting the urgency to address the emerging divisions in accessibility and opportunities for these neighbourhoods.

Keywords

Urban Park • Accessibility • Auckland public housing • Mobile location data • Gravity models • Mobility

I.-T. Chuang (✉)
University of Auckland, Lecture of School of Architecture and Planning, Auckland, New Zealand
e-mail: iting.chuang@auckland.ac.nz

J. Colbert
University of Auckland, Geospatial Research Assistant of Faculty of Medical and Health Sciences, Auckland, New Zealand
e-mail: jcol814@aucklanduni.ac.nz

K. Sila-Nowicka
University of Auckland, Senior Lecturer of Geographic Information Science in the School of Environment, Auckland, New Zealand
e-mail: katarzyna.sila-nowicka@auckland.ac.nz

1 Introduction

The project aims to understand the relationship between urban park accessibility and Auckland public housing developments. The vast urbanisation and densification of the urban environment highlight the increasing problem of spatial division in the distribution and accessibility of urban green parks as an environmental justice issue (Wolch et al., 2014). Whether urban green is equitably distributed in relation to race, ethnicity and social status has led to significant efforts invested in examining urban green space accessibility (Kabisch et al., 2016; Rigolon et al., 2018; Song et al., 2021). These studies on environmental inequalities in urban green space provision indicate divisions in its distribution affiliated with income, age, gender, minorities, migration background and racial characteristics (Kabisch & Haase, 2014; Shanahan et al., 2014; You, 2016).

However, investigations on access to urban green space predominately lack the socioeconomic detail of households and individuals (Kabisch & Haase, 2014; Rigolon et al., 2018). Therefore, we harness the potential of mobile phone locational data extracted for the Auckland Region of New Zealand to draw connections between the user's 'home' location and urban parks in their neighbourhood. We focus on public housing tenants—the most vulnerable group in society that suffers from greater risks of health inequalities (Mitchell et al., 2015; Mitchell & Popham, 2008). Auckland Region currently has the highest public housing stock (approx. 45%) in New Zealand (*Te Tūāpapa Kura Kāinga—Ministry of Housing and Urban Development*, n,d) where the consequences of spatial division can potentially have the greatest impact. We measure the distance to the nearest urban green for the neighbourhoods with the highest and lowest percentage of public housing tenancies (top and bottom 25%). The chosen methods allow us to map the spatial divisions in the accessibility and opportunities of the public housing context to provide insights into the effects of spatial planning criteria on the use of the available urban

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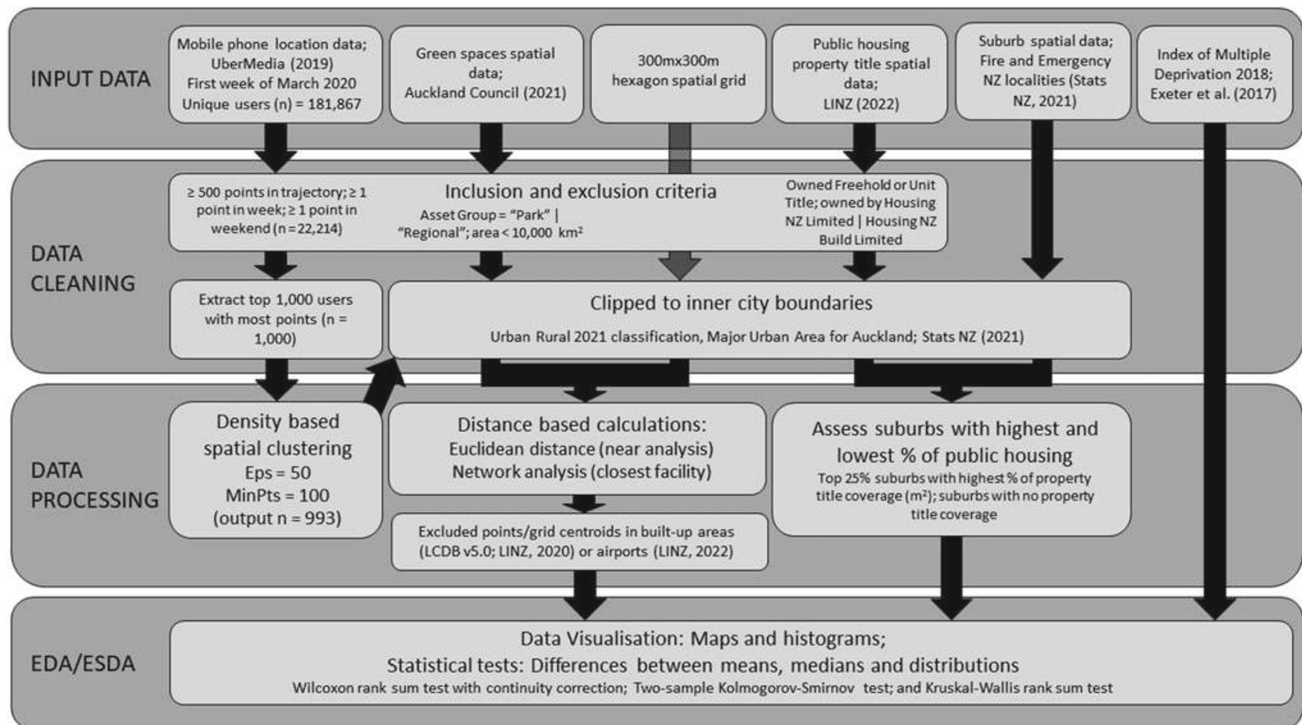

Fig. 1 Flowchart of the methodological framework

parks and inform future design opportunities for more inclusive urban greens in the city.

2 Methods

This research presents a methodological framework using mobile phone data to investigate potential spatial divisions in urban green accessibility for those living in areas with the most public housing, and those who live in areas with no public housing. The Auckland inner city area was chosen as the study site on the basis that the majority of the population in the region is located here. In this research, we have selected a sample of the dataset which consists of the top 1,000 users during the first week of March 2020 (*UberMedia*, 2019) representing a typical working week in New Zealand without school or bank holidays. We applied cleaning techniques to exclude errors and inaccuracies in the data, subsequently extracting significant locations as an indication of people's home locations which were used as the input for further analyses to compare urban access to green spaces for those living in the study area. An overview of the designed framework is shown in Fig. 1.

2.1 Clustering and Distance Analysis

In movement analytics, clustering is used to identify groups of points that correspond to one location or activity. We apply clustering to identify the most likely home locations of a selection of users extracted from mobile phone point data for the Auckland inner-city region. Density-based spatial clustering of applications with noise (DBSCAN)[1] was run on the selected user movement trajectories. The median centroid coordinates were extracted for each user for the first cluster, which is assumed to be the user's home location (Gong et al., 2014). Next, three different distance measures were calculated, run once using the user's home locations, and then a second time using the centroids of the 300mx300m grid:

- Minimum distance (metres) to nearest park centroid from points, using Euclidean distance;
- Minimum distance (metres) to nearest park centroid from points, using network analysis;
- Minimum distance (metres) to nearest park edge from points, using Euclidean distance.

[1] Run in R using the function 'dbscan' from the package 'fpc'. Hennig, C. (2020). fpc: Flexible Procedures for Clustering (R package version 2.2–9). https://CRAN.R-project.org/package=fpc

2.2 EDA/ESDA

Distances were measured from home location cluster centroids and grid centroids located in the neighbourhoods with highest (PH) and lowest (NPH) public housing tenancies (top and bottom 25%). The minimum distances to green spaces were visualised (Figs. 2, 3 4) and compared with the level of deprivation present in each grid using the Index of Multiple Deprivation 2018 (IMD18) (Exeter et al., 2017) (Fig. 5).

3 Major Findings

For distance measures from user home locations, differences between mean and median minimum distances were not significant (Table 1). For distances measured from grid centroids located in PH neighbourhoods, the mean and median minimum distances are higher than for the grid centroids located in NPH areas (Table 1). This is similar to all distance measures used. All differences are statistically significant (p-value < 0.05). Therefore the results discussed herein focus on the grid-based measures.

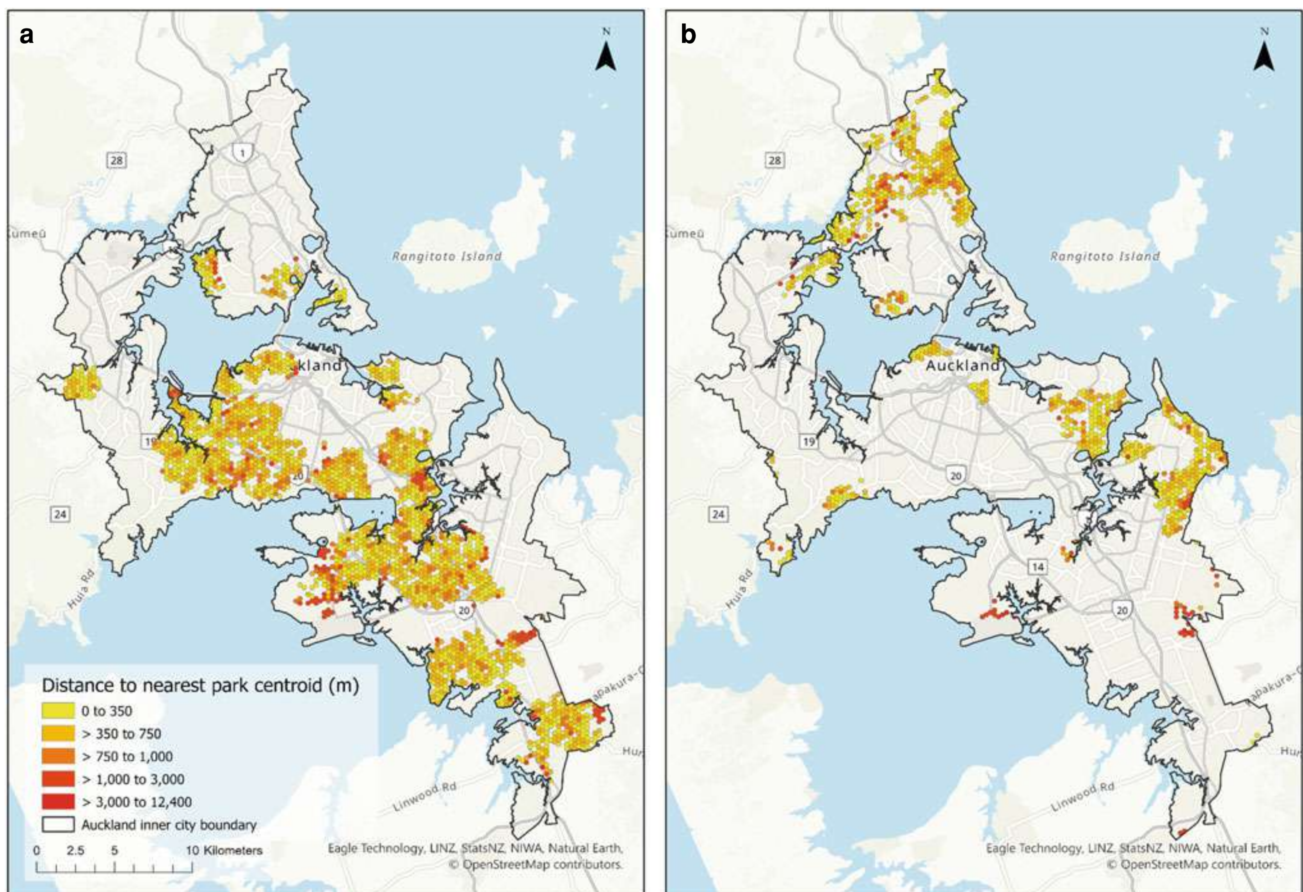

Fig. 2 Maps of distance (metres) to nearest park centroid from grid centroids using euclidean distance (**a**) neighbourhoods with the top 25% of public housing tenancies; (**b**) neighbourhoods with no public housing tenancies (bottom 25%)

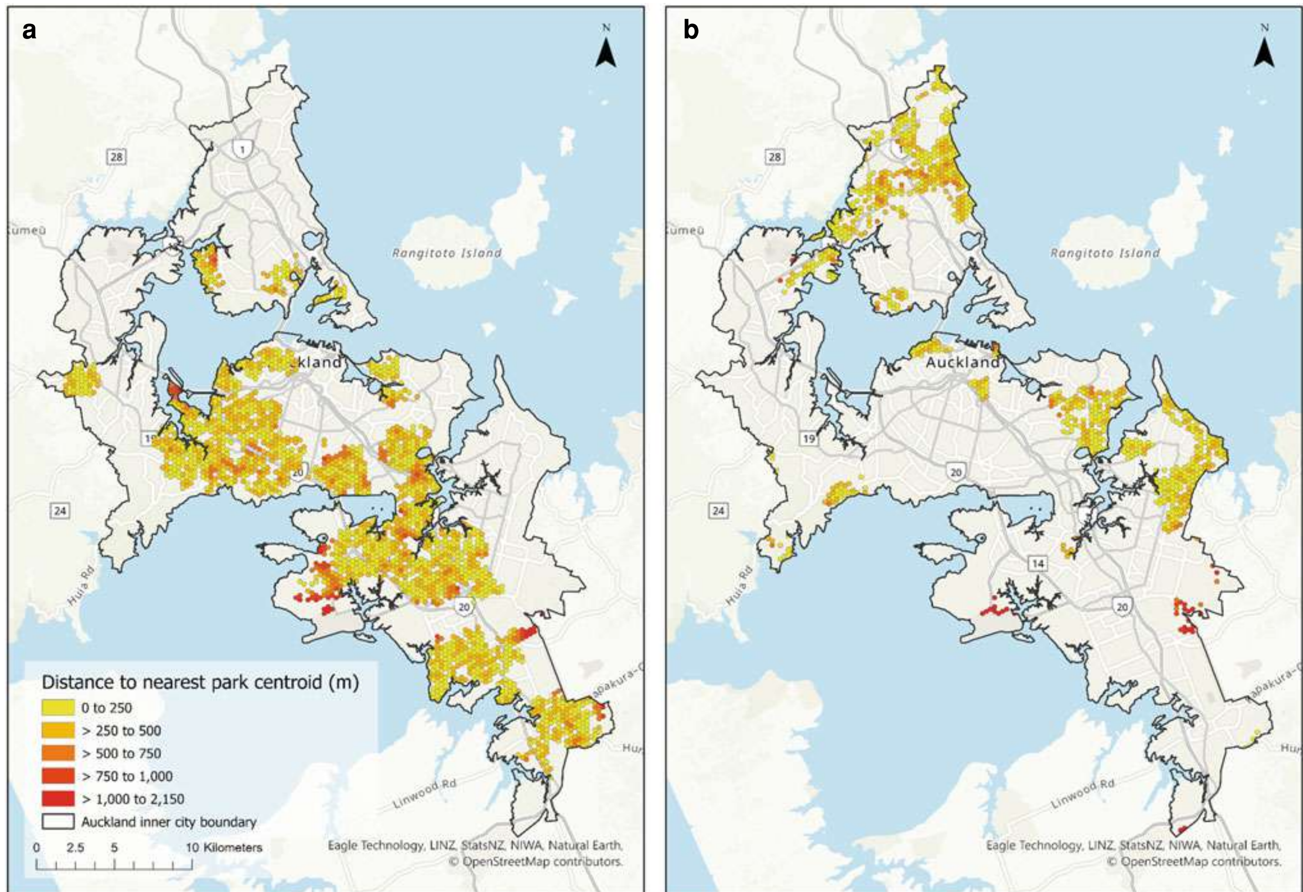

Fig. 3 Maps of distance (metres) to nearest park centroid from grid centroids using network analysis; (**a**) neighbourhoods with the top 25% of public housing tenancies; (**b**) neighbourhoods with no public housing tenancies (bottom 25%)

The results indicate that grid centroids located in PH neighbourhoods tend to have worse accessibility to green spaces than those in NPH neighbourhoods, as visualised in Fig. 2 to 4. Regardless of the distance calculation used, there appeared to be similar accessibility to green spaces between the two neighbourhood subsets. However, there appeared to be more centroids dispersed to the South that have more deprived urban park access for the PH neighbourhoods than NPH areas. In addition, the relative disadvantage, or deprivation, of the grid centroid locations was assessed using the IMD18, as illustrated in Fig. 5. PH neighbourhoods appear to be predominantly classified as being highly deprived (Q4/5), while NPH neighbourhoods seem to be classified as having low deprivation (high affluence).

Overall, we have found that different metrics produce similar results regarding the divisions in park access in higher public housing neighbourhoods. Accessibility to urban greens was better in neighbourhoods with NPH (less deprived). This is consistent with prior research that shows socioeconomic characteristics are closely associated with urban park accessibility in cities that do not have planning policy intervention in place (Feng et al., 2019; Wu & Kim, 2021).

4 Conclusions and Implications

In this research, we examined if the socioeconomic division of access to parks exists in Auckland's larger public housing cluster neighbourhoods. We do so by operationalising both Euclidean and street network analysis metrics in measuring the distance to both the edge/centroid of urban greens. We derive these measurements from a mobile locational dataset and a 300mx300m grid for the Auckland region. Comparing these three metrics allows for a more robust and accurate result than if only one metric had been chosen (Fan et al.,

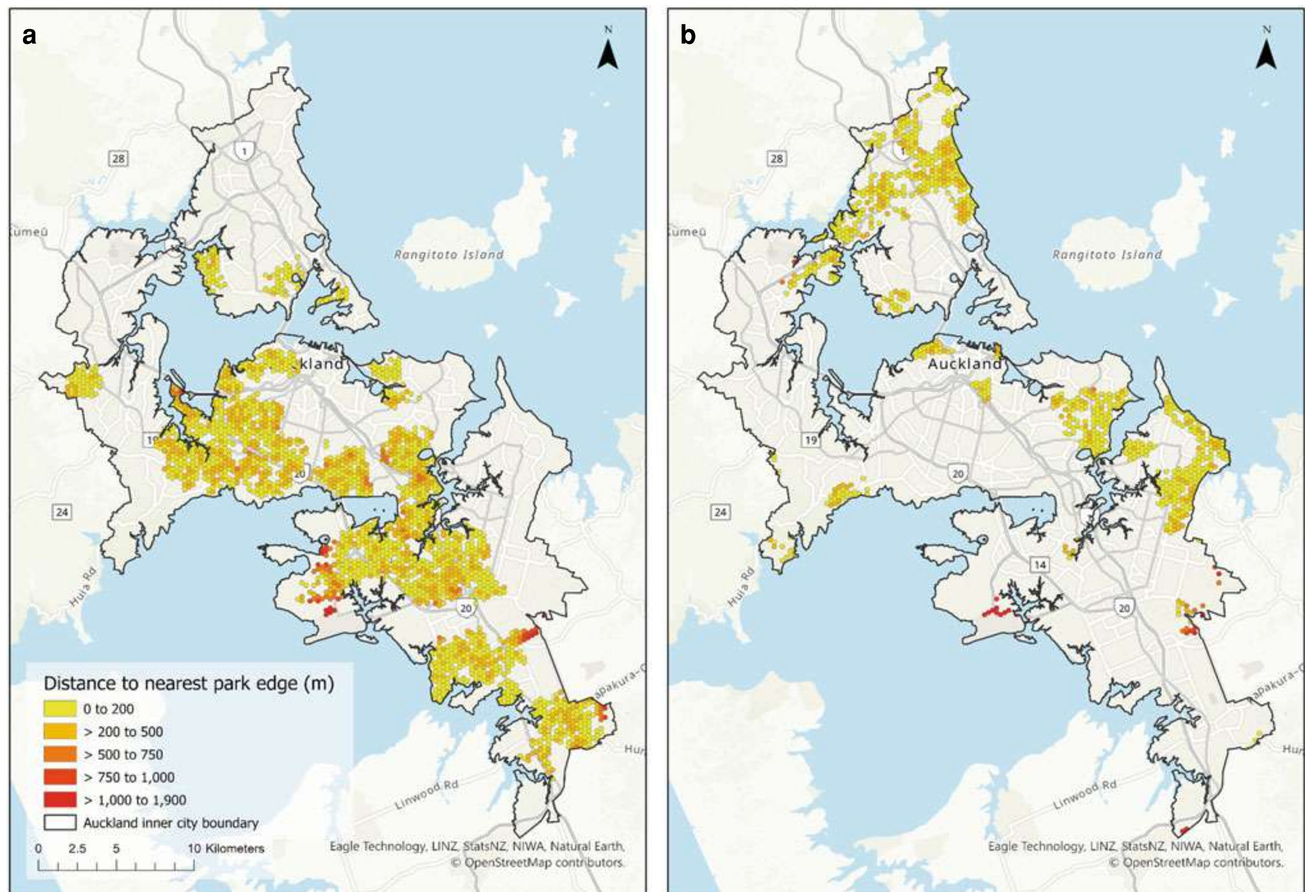

Fig. 4 Maps of distance (metres) to nearest park edge from grid centroids using euclidean distance. (**a**) neighbourhoods with the top 25% of public housing tenancies; (**b**) neighbourhoods with no public housing tenancies (bottom 25%)

2017; Oh & Jeong, 2007). The use of a geographical dataset also increases the accuracy of analysing the distance from public housing tenants' home locations to the nearest green space.

The work presented here provides only an illustrative sample case study currently with a small 1,000 users sample and can be extended in multiple ways, such as expanding the dataset to a much larger sample of users to minimise the sampling bias and decrease the difference between sample numbers for each neighbourhood subset. It should also be noted that mobile locational data has clear limitations, in terms of sampling biases, spatial accuracy and precision and lack of demographic information (Siła-Nowicka et al., 2015). More efforts are needed to generalise this dataset, such as by incorporating other public datasets (e.g. census data for public housing tenants) to calibrate its bias.

Nonetheless, analysing urban green access division for more socioeconomically vulnerable groups provides an insightful understanding of the current condition of the spatial division in Auckland's urban structure. The confirmed correlation between lower urban green accessibility and higher IMD18 quintile ranking unpacks additional social equity issues to be addressed. Thus, presents the need to further analyse the actual uses of urban parks in the context of opportunities available based on different individuals' mobility patterns to examine potential divisions in both accessibility and opportunities of our built environment in different areas.

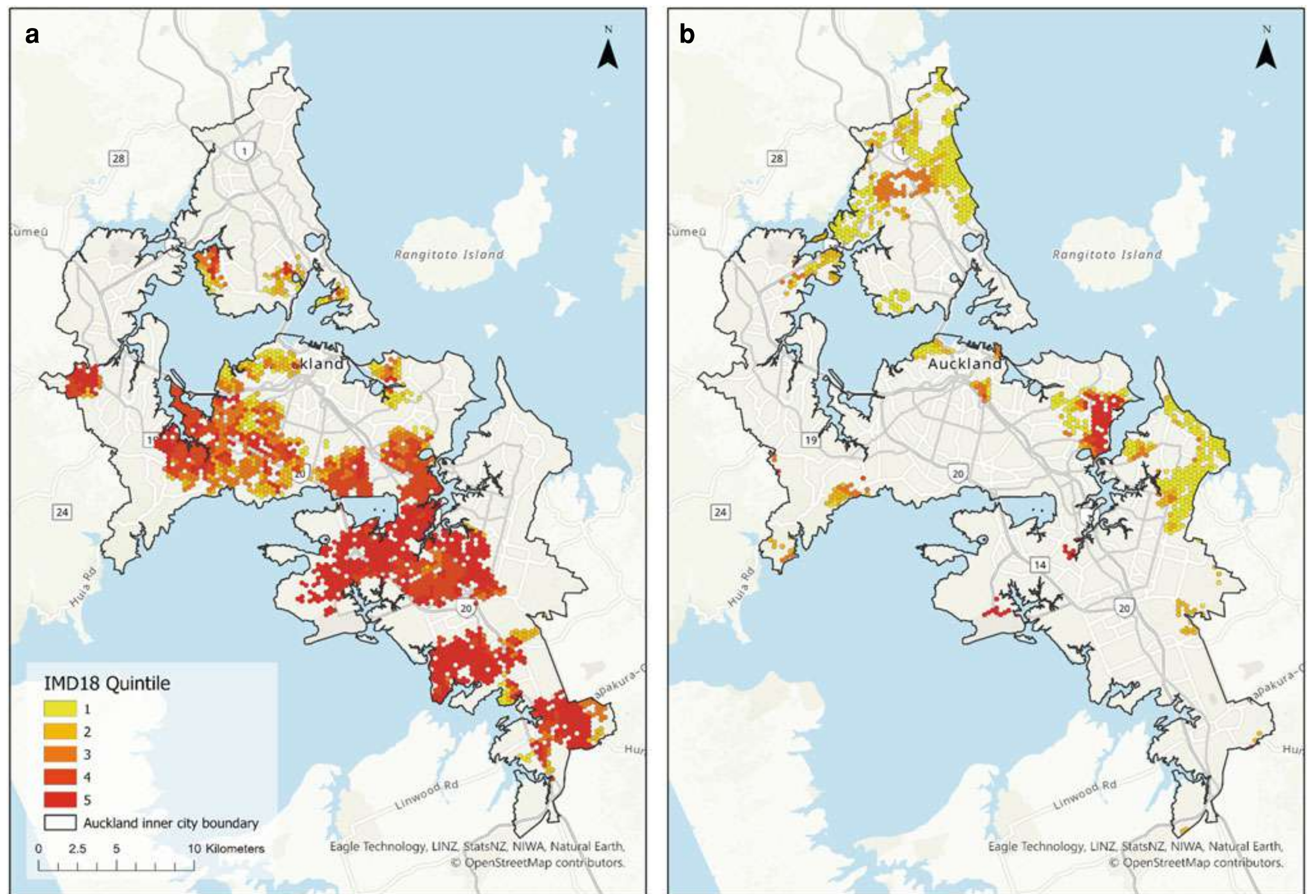

Fig. 5 Maps of IMD18 quintile deprivation (**a**) neighbourhoods with the top 25% of public housing tenancies (**b**) neighbourhoods with no public housing tenancies (bottom 25%)

Table 1 Summary statistics for the distance-based calculations for (A) user home locations; (B) grid centroids

(A) User home locations	Distance to nearest park centroid (Euclidean distance) (metres)		Distance to nearest park centroid (network analysis) (metres)		Distance to nearest park edge (Euclidean distance) (metres)	
Summary statistic	PH	NPH	PH	NPH	PH	NPH
Min	10.7	48.1	0	0	0	6.6
Mean	241.4	256.7	411.8	450.6	162.1	151.9
Median	212.9	202	367.2	379.3	134.7	105.1
Max	1,413.10	1,856.70	3,027.60	3,281.60	1,309.40	1,718.80
Standard deviation	154.4	244.5	340.8	467.5	141.7	202.6
# points	238	87	238	87	238	87
(B) Grid centroids	Distance to nearest park centroid (Euclidean distance) (metres)		Distance to nearest park centroid (network analysis) (metres)		Distance to nearest park edge (Euclidean distance) (metres)	
Summary statistic	PH	NPH	PH	NPH	PH	NPH
Min	11.91	6.637	0	0	0	0
Mean	283.2	281.784	475.4	490.3	177.99	162
Median	246.98	219.504	402.2	353.7	138.2	105.8
Max	1,807.29	2,133.71	3,809.80	12,364.50	1,701.61	1,852.20
Standard deviation	194.6497	268.4541	402.4712	653.617	169.8729	227.4705
# grids	2,123	947	2,123	947	2,123	947

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Urban Aural Environments: The Sound Ecologies of Johannesburg

Barend J. Engelbrecht and Amira Osman

Abstract

Spatial divisions may be powerfully captured through the sounds present in different parts of the city. The ecologies of divided cities in Africa are here shown through soundscape compositions using Johannesburg as a case study. As such, this paper will reflect and extend upon the first iteration of an ongoing project entitled: *Urban Aural Environments: Sound Ecologies of Johannesburg*.

Keywords

Sound • Johannesburg • Artistic Research • Field Recording • Ecological Urbanism

1 Introduction

Cities and urban processes are studied in many ways; geographic, historical, anthropological, spatial, morphological, socio-economic, political, and cultural analysis are some of the lenses through which cities are viewed. In the creative realm, the "visual" seems to take prominence over the "aural"; this overlooks the sensual and psychological qualities of urban aural experience. The interface between people, between people and space and the built environment, how people navigate space in cities, and how people reside, work, and move in cities may all be captured in sound. How then do we counteract the hegemony of the visual in a way that offers alternative sociocultural cartographies of Johannesburg rooted in the auditory? This study responds to this question by mapping the sounds of Johannesburg through field recording as an artistic practice.

2 The Major Issues

Johannesburg's spatial legacy has created distinctive acoustic zones, the post-Apartheid condition, still spatially dominated by Apartheid divisions, continues to be reflected in the sonic experience of the city; the dismantling of Apartheid spatial structures is far from being achieved. Over time the borders between zones have become increasingly porous and less absolute, especially as the gaps in the city fabric—previously deliberately and strategically created to separate—are now being filled/occupied and the distinctions between the different zones are somewhat being diluted. The in-between zones continue to create tension between historically definable sonic enclaves and the spatial evolution of the city.

Furthermore, the sonic order foregrounded by noise indicates the class position and stratification along the socio-economic continuum of the city. For all the allure of cities, many city sounds are perceived negatively as "noisy" (traffic, construction work, sirens and alarms, loud music). Noise is commonly referenced in the way it disrupts the habitual ambiance of a place, it can affect communication, have negative physiological impact, and disempower communities exposed to it. However, noises are also "invisible mediators of exclusion" (Atkinson, 2007, p. 1915), and as such function as auditory markers of space that reveal the boundaries between acoustic territories. Perhaps that is why the absence of noise was so striking during the COVID-19 lockdown period (Poon, 2020).

3 Potential Significance

That fact that Johannesburg is encountered through distinctive acoustic zones of transmission, as a result of the politics inherent to space, also entails particular "modes of experience" (Revill, 2016, p. 242) that are affective and emotional. For urban geographers, sound then has the potential to

B. J. Engelbrecht (✉) · A. Osman
Twshane University of Technology, Tshwane, South Africa
e-mail: osmanaos@tut.ac.za

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uncover not only spatio-temporal dimensions of individuals and communities, human and non-human, but also the affective atmospheres of the city that define a place (Gallagher et al., 2016, p. 8; English, 2017, p. 131). It then becomes possible to reconfigure Traux's concept of an acoustic community as "any soundscape in which acoustic information plays a pervasive role in the lives of the inhabitants" (Traux, 1984, p. 58), within the context of urban geography and draw out three major themes. The first is "space and place" where we interrogate the relationship between place-making and sound-making. The second is "difference and belonging," which is based on the notion that a sound, or sound-maker, is either in or out of place within the territory of a particular acoustic community. The third is "public and private," certain sounds and ambiances act in the formation of an acoustic community but may also act to "compromise our sense of autonomy" (Atkinson, 2007, 1908), bleeding into our personal acoustic territory.

4 Theoretical Approach

As the title suggests, there are two underlying components that inform the theoretical approach of this study: the sonic and the ecological. In terms of the sonic, Arkette places the shift toward listening to cities in the context of phenomenological investigations: "Reductionist theorists argue that a city is no more a lattice of physical enclosures, apertures, planes, intersections bound together by the regulatory force of the Cartesian grid" (Arkette, 2004, p. 159). By foregrounding an aural perspective it is possible to transform how the city is received and perceived.

Mapping of cities may be achieved in many ways—and maps are never neutral. Maps tell stories and present the political and social narratives of the map-makers. Gevisser tells the story of his fascination, and perhaps the start of his political awareness when as a child, he discovered that, in one version of Johannesburg, "Soweto wasn't there!" This discovery led him to further investigations of "denialism" where people and places were edited out of maps (Gevisser, 2014, pp. 14–15). As such, today, many are attempting to right the erasures of the past by boldly reclaiming the narrative on space and cities using multiple methods of representation and multiple ways of interpretation. Today, Johannesburg is perceived as a collection of "arrival cities"—a global phenomenon (Saunders, 2011, p. 29)—with Africa-specific characteristics: "A rich, pulsating, urban social agglomeration… its streets are rougher, its buildings are brasher, it swears at you and often leaves you infuriated" (Parker, 2015, p. 39). The authors proceed to describe the city as "moving, exploding and crashing."

An ecological approach to the city includes all of its sensuous qualities. (Groth & Samson, 2013, pp. 99–100). Sound in particular, may be an overlooked component that may reveal, as yet undiscovered, complex and layered sites of relational networks; another way of showing that a city is, indeed, [not] a tree but rather a complex "lattice" of human interaction in space through time (Alexander, 2015). This complexity is further illustrated by acknowledging the multiple decision-makers in the city and how people occupy city space and make "home" within existing city structures (Habraken, 1998)—sometimes in negotiated harmony and sometimes through conflict and protest.

5 Methodological Approach

The heterogenous methodology of soundscape studies is a coalescence between science, social studies, and the arts (Fiebig & Schulte-Fortkamp, 2021, p. 253). Acoustics shows how sound propagates through and how space shapes sound. Psychoacoustics deals with how sound affects human behavior (Oleg et al., 2015, p. 20). Sound in the context of the social sciences reveals the social and cultural features of listening and sound-making (Samuels et al., 2010, p. 330). The aforementioned then gives us a lucid understanding of sound in the urban environment (Kang, 2007, pp. 24–25). This project approaches field recording of the urban environment through the lens of artistic research in the city space. An archive of field recordings was made throughout the city, over an extended period of time. Field recording which formed the foundation of the methodological approach for this study. We thought of the recordings as source material for a series of compositions, sonic essays, or video collages.

There are two seemingly opposed forces at play when considering the methodological approach of field recording as artistic practice. Firstly, our field recordings attempt to be analogous to real-world experience, (Traux, 2002, p. 12) where sounds make clear reference to a specific site and its acoustic properties, and how the meanings attached to these sound "construct a sense of place" (Uimonen, 2011, p. 258). Secondly, field recorders are prosthetic devices. The process of attunement to the aural environment is mediated by a microphone which transforms sound into the signal. As a result, the criteria for listening change. Recording and editing are performative, gestural, and dialogic where the focus is placed on the "material qualities of sound and silence" (Demers, 2009, p. 44). Inasmuch as the recordings are about the sounds in a particular place, they are also about the recordist as a listener or what Peter Szendy calls the "listeners listening" (Szendy, 2008, p. 143). In this sense, recordings are unfolding self-narratives that foreground the processual experience of Johannesburg. The criteria for choosing sites were thus based on a co-evolution of the ecological and the aesthetic. This process resulted in a short

film entitled *Membranes* 2021, an abridged expression interplay of pluralistic sonic methodologies (Engelbrecht et al., 2021).

6 Major Findings

Listening to the city we notice that what we hear presently reveals aspects of the past, that the city's rhythms are rarely random, that there are subtle shifts in auditory ambiances when moving from one space to the next, that the sonic fabric of the city is a combination of heterogeneous layers and finally, that different part of the city has a distinctive sound. These distinctive acoustic zones of transmission have been divided into the industrial areas, empty zones and highways (the buffer zones), the poor, underserviced (historically) black township, the abandoned and reclaimed robust infrastructure of the inner city ("white flight/black influx"—the home of African migrants), and the wealthy, leafy (historically white) suburbs. It is speculated that these zones also reveal how the city has shaped itself around the perception of noise, because its recognition "contributed to the inexorable fragmentation and privatization of urban space" (Novack, 2015, p. 129).

7 Conclusion

Through its ability to capture the unfolding spatial chronologies of Johannesburg, the resonances of place, the dynamics of its subtly shifting aural atmospheres, and the fluidity inherent to its acoustic territories, we have found that sound tells not only the story of the social, economic, psychological, and spatial forces of Johannesburg, but also provides deeper insight into its listeners. Therefore, it is our view that sound is often better suited to capture particular phenomena related to urban experience than the visual. If Johannesburg is a point of departure, what then could an auditory take of other African cities reveal?

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Exploring Digital and Financial Divide and Its Effects on South African Women's Engagement in Entrepreneurship

Tinuade Adekunbi Ojo

Abstract

The study builds on the unified theory of acceptance and technology using a qualitative research approach to explore how digitalisation and financial inclusion enhance women's entrepreneurial engagements and address gender constraints and urban inequalities. The paper presents primary data from current research on women's entrepreneurial activities and addresses gender constraints and urban inequalities. The findings revealed that digital and financial access enhances women's engagement in entrepreneurship by addressing socio-spatial challenges such as gendered social and physical mobility. Therefore, the government should invest in digital technology in marginalised urban regions and implement proper gendered policy recommendations.

Keywords

Digitalization • Financial Inclusion • Entrepreneurship • Gender divide • South Africa

1 Introduction

Authors have attested that growth in the cities has fostered a massive divide between urban dwellers and urban migrants (Schragger, 2021; Shin et al., 2021), specifically the marginalised, women and poor in the urban. However, this study debates how digitalisation and financial inclusion enhance women's entrepreneurial engagements and address gender constraints and urban inequalities.

The transition into a digitalised economy during the Covid-19 pandemic came with significant challenges on the financial and digital divide in South Africa. Despite government efforts, gendered constraints to the disadvantage of women pose a colossal hindrance to the transformation of a digital and financially inclusive society. The primary questions asked, include; what is the extent of inequality amongst women entrepreneurs in the city of Tshwane? How is urban inequality manifested in the digital and financial divide, and what are the theoretical and policy implications of the study?

The paper is divided into four sections; the first highlights entrepreneurship, financial and digital divide, the second part debates the theory, the third part narrates the methodological and findings sections, and the fourth concludes and explains the conclusion and implications of the study.

2 Entrepreneurship, Financial and Digital Divide

Many studies highlight women's role as influential critical factors in financial and digital inclusion (Chisiza, 2017; Magenya, 2020). More women entrepreneurs have evolved globally due to universal socio-economic development within the past decade. Mudara and Mafini (2022) studies revealed a financial divide for women entrepreneurs in Tshwane. The report on 347 women entrepreneurs revealed that they do not have the financial collateral mandated by financial institutions when applying for finance to start or grow their businesses (http://www.scielo.org.za/scielo.php?script=sci_arttext%96pid=S1815-744020220001000007). As a result, women entrepreneurs are still struggling to be financially included.

On its part, the digital divide continues to widen in the fourth industrial revolution, except the government takes measurable steps to ease sustainable gender digital policies (Ojo, 2022). Moreover, since most jobs have employed digital components, women entrepreneurs' survival in a digitalised economy seems vague.

Table 1 reflects the indexes that project gender parity amongst women in South Africa. Women's population was

T. A. Ojo (✉)
Institute of Pan African Thought and Conversation and the Institute of Global African Affairs, University of Johannesburg, Johannesburg, South Africa
e-mail: tinuadeo@uj.ac.za

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Table 1 Gender inequality ratings in South Africa

Indexes	South Africa	
Gender population % (Statistica, 2022)	M 49.3%	F 50.7%
Percentage of internet users (Kemp, 2021)	55%	51%
ICT women managers (Chisiza, 2017)	95%	5%
Women managers (StatsSA, 2018)	68%	32%

Source Author Compilation

50.7% as compared to males' 49.3%. The percentage of internet users is 51%, unlike men, with 55%. In addition, women acting as ICT industrial senior managers are only 5% in South Africa, showing a high rate of under-representation compared to male 95% (Chisiza, 2017). Furthermore, only 32% of women managers as compared to male 68% of managers reside in the country. Chisiza's report further suggests the employment gap in the ICT profession, with only 2.9% out of 22% of female graduates employed (Chisiza, 2017). As a result, the digital divide widens in the 4IR if proper measures are not taken to adopt sustainable gender digital policies. Aside from the ICT sector, inequality has also been seen in the labour market as workers in South Africa earn less than their male counterparts (Ojo, 2020). Especially since most jobs now have a digital part, women's gap in securing a sustainable job has become more prominent.

3 Unified Theory of Acceptance and Use of Technology (UTAUT)

The study engaged the Unified Theory of Acceptance and Use of Technology (UTAUT), whose philosophy entails a combination of eight information technology acceptance theories to highlight individuals' acceptance of technological issues. The Unified Theory of Acceptance and Use of Technology (UTAUT) aids in narrating how women entrepreneurs embrace and adopt technology for their benefit based on the theory's variables on expected performance, efforts, and social influences. Adopting available financial services and digital technology resources often depends on women's behavioural intentions and circumstances. Therefore, the theory was used to analyse and present an empirical evaluation of women entrepreneurs' financial and digital inclusion.

4 Methodological Approach

The paper presents primary qualitative data from current research on 30 women entrepreneurs in the City of Tshwane Metropolitan Municipality, South Africa. The participants were chosen purposively, and data were analysed using thematic analysis. To highlight issues of the rural-urban gender divide, the study presents the significance of the urban context in contemporary inequality debates.

5 Major Findings

The findings present data from 30 women entrepreneurs in the City of Tshwane Municipality. The study highlighted themes on gender, age, voluntariness, and experiences of the women entrepreneurs.

Figure 1 and Table 2 present the demography of participants and their responses on the age level. All participants were women, and their age ranks varied. Women aged 20–25 (n − 5) had 17%, and 25–30 (n − 6) had a representation of 20%. Participants within the age of 30–35 (n − 8), is 27%, ages 35–40 (n − 10) is 33% and the last age rank 50–50 (n − 1) is 3%.

6 Urban Inequality in Financial and Digital Divide

Questions were directed to the participants on the extent of inequality amongst women entrepreneurs in the city of Tshwane to decide their behavioural intention and willingness to adopt both services. In addition, the question was asked on governmental offerings to determine whether they are financially literate or digitally literate.

From Fig. 2, 18 participants were financially included (have savings and investments aside from profits and have access to banking offerings. On the other hand, nine (n − 9) participants are financially excluded and engage in the informal banking sector. Three (n − 3) participants are unaware of financial services, and five (n − 5) participants are beneficiaries of government financial products. Nineteen (n − 19) participants are unaware of government financial benefits. In terms of digital inclusion, fourteen participants (n − 14) are digitalised while eleven (n − 11) are excluded, five participants (n − 5) are unaware, three (n − 3) are total beneficiaries of government ICT offerings, and 27 are non-beneficiaries. Table 3 presents the outcome of Fig. 2.

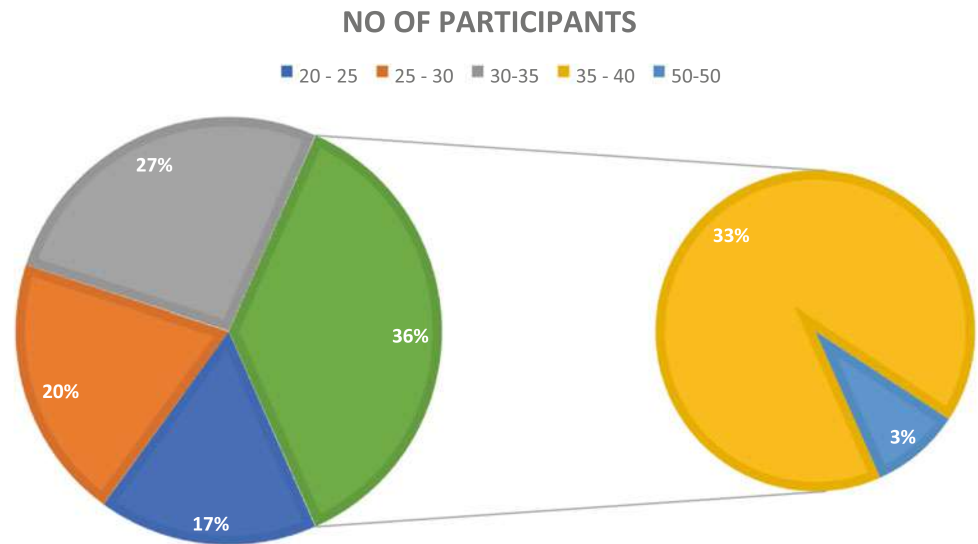

Fig. 1 Participant's demography. *Source* Author Compilation

Table 2 Participant's demography

Age	No of participants	Gender	Percentage (%)
20–25	5	F	17
25–30	6	F	20
30–35	8	F	27
35–40	10	F	33
50–50	1	F	3

Source Author Compilation

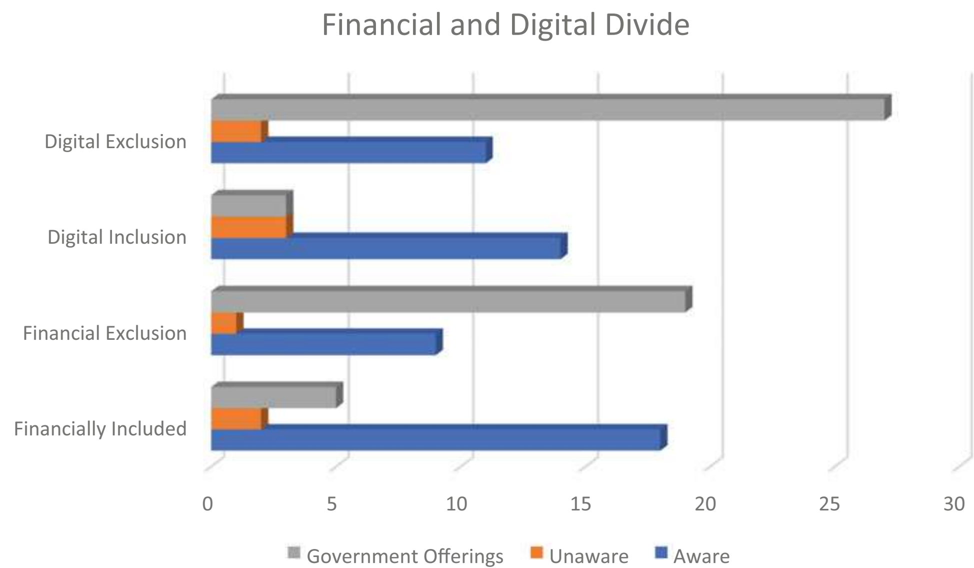

Fig. 2 Financial and digital divide. *Source* Author Compilation

Table 3 Financial and digital divide

	Aware	Unaware	Government offerings
Financially	18	2	5
Included			
Financial exclusion	9	1	19
Digital inclusion	14	5	3
Digital exclusion	11	0	27

Source Author Compilation

7 Discussion

The paper affirms that women entrepreneurs have strived to achieve inclusion in digital and financial services. Most women entrepreneurs are experienced and aware of financial and digital infrastructures offered by the government and the financial institutions in the municipality, even though most are not beneficiaries of the governmental offerings on these two factors. Other factors appearing are as follows.

a. The government and financial institutions do not have specific policies addressing financial inclusion for women.
b. Women are categorised as the insolvent group that does not last; therefore, they most often do not qualify for financial incentives.
c. Those who qualify have liquidated in business, and only a selected few appear from the patriarchal society.
d. Strategies and programmes implemented so far in government institutions do not last and are not sufficient for a lasting impact

8 The Extent of Inequality Amongst Women Entrepreneurs in the City of Tshwane

The questions on the trends and nature of inequality amongst women entrepreneurs in Tshwane clarify how urban inequality manifests in the digital and financial divide. The findings highlighted that women entrepreneurs are aware of the economic and digital services provided by the municipality, financial institutions, and other stakeholders; however, not all women are beneficiaries of the services. There is still a significant gap between women entrepreneurs' financial and digital divide. Challenges constraining women include;

- Too many banks charges
- A decline in women traders in the informal sector
- Financial institutions' requirements.
- Trust in the informal sector than in the formal sector.
- Inadequate access to devices such as laptops and tablets
- Unstable electricity
- Digital illiteracy, poverty and unequal opportunities.
- Data inaccessibility

9 Conclusion

The City of Tshwane still battles with urban poverty and has yet to set up proper ICT discourse and policies that enforce financial and digital inclusion for women. The study reveals a significant gap in data analysis centred on women's exclusion in South African economies. South African women entrepreneurs have shown more interest in empowering and getting more involved in accessing technical and ICT literacy skills.

10 Theoretical and Implication of the Study

- Municipalities should engage women interested parties in all decisions about financial and ICT regulations within the metropolitan city.
- Policies enabling ICTs (Information and Communication Technology) accessibility for affordable, meaningful, and equality for all women entrepreneurs.
- Training on empowerment programmes and basic infrastructures.
- Safe working environment.

The article concludes that implementing financial and digital equity for women is needed as it paves the way for the future.

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An Ethnographic Account on the Desire for Greenery in the Affluent Northern Suburbs of Johannesburg, South Africa

Oda Eiken Maraire

Abstract

The affluent northern suburbs of Johannesburg are locally referred to as the 'leafy suburbs', and throughout eleven months of ethnographic fieldwork, following various actors within the residential real estate industry, a strong desire for and cultivation of urban greenery was apparent. Although both residents and real estate agents often emphasised that safety and security were the most important factors for where and how people want to live in Johannesburg, which also characterises much of the literature in the field (i.e. Murray in City of extremes. The spatial politics of Johannesburg. Duke University Press, Durham, 2011), I argue in this paper that a desire and a longing for greenery is essential for understanding processes of enclaving in the affluent northern suburbs of Johannesburg. Considering the city's location in the Highveld, an area characterised by a broad grassy plateau where soils tend to be dry and powdery during winter, cultivating greenery is particularly water and labour-intensive. By exploring Walter Benjamin's concept of anaesthesia as a sensory abundance, I denaturalise what I perceive is an undisputed desire for nature in the urban, which conceal deeper concerns about urban living. I argue that flooding the senses with greenery in the suburbs are eco-technical manipulations that consciously or unconsciously, reproduce racialised and classed perceptions of who and what belongs in the suburbs. Simultaneously, these everyday practices of greening are arguably an expression of care that show people's commitment to the city and urban lifestyles that has potential to remake and reimagine the suburban landscapes anew.

O. E. Maraire (✉)
Department of Social Anthropology, University of Bergen, Bergen, Norway
e-mail: oda.maraire@uib.no

Keywords

Greenery • Anaesthesia • Real estate • Barriers • Enclaving • Ethnography

1 Introduction

The affluent northern suburbs of Johannesburg are locally referred to as "the leafy suburbs". Throughout eleven months of fieldwork, following various actors within the real estate industry, a strong desire for and cultivation of urban greenery was apparent. Johannesburg is a South African metropolis located in the area called the Highveld. An area characterised by a broad grassy plateau where soils tend to be dry, thin, and powdery, particularly during winter. However, in the suburban landscapes, gracious jacaranda trees hovering over green lawns, pruned bushes and flower beds planted along high walls surrounding properties are in abundance, regardless of season. During photoshoots with real estate agents, the ultimate "money shot" for the listing often included green leafy views or manicured gardens. Greenery is important in promoting new high-end residential developments. Although residents and real estate agents alike emphasised security as among the most important issues for how and where people live, which also characterises much of the literature in the field (i.e. Murray, 2011), I argue that cultivating greenery is essential in processes of urban enclaving (Nielsen et al., 2020) in the leafy suburbs. By foregrounding greenery, I denaturalise what I argue is an undisputed desire for nature in urban areas, by suburban residents and actors in the residential real estate industry, which conceal deeper concerns about urban living.

The paper is based on ethnographic research (O'Reilly, 2011), conducted among real estate agents, a property photographer, and residents from August 2019 to July 2020. Areas I visited included, but are not limited to, Parktown, Killarney, Rosebank, Sandton, and Midrand. Acknowledging

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the possible biases of ethnographic studies (O'Reilly, 2011), I adapted a reflexive approach (Ho, 2016) and created a network of interlocutors through purposive and snowball sampling techniques (O'Reilly, 2011). My mixed methods included participant observation, informal and semi-structured interviews (Bernard, 2000), and collecting material through real estate blogs as well as property advertisements. I visited over one hundred properties, ranging from one-bedroom apartments to luxurious villas in private golf and equestrian estates.

2 Framework

There is a growing focus on nature in urban areas among South Africanist researchers. These include nature in gated communities (Raidoo, 2020), the desire for indigenous landscapes (Ballard & Jones, 2011) and lawns (Cane, 2019), and perceptions of various alien invasive species (Comaroff & Comaroff, 2001; Comaroff, 2017; Falkof, 2020). When Art historian Jonathan Cane reflects on his childhood in Johannesburg, he remembered how he "longed for green" as he among others considered Johannesburg to be a city "without a landscape" (Cane, 2019, p. 1). Compared to other South African cities, Johannesburg is least known for its picturesque nature. The city is rather perceived as the archetype for urbanity, the ultimate African metropolis (Nuttall & Mbembe, 2008). Martin Murray argues that stylized buildings have the potential to form "phantasmagoric dream images of the Johannesburg Future City" (2011, p. 207). However, Cane and others' longing for green alludes to a desire for a green landscape as the ultimate landscape. Thus, exploring greening practices provides a lens to critically investigate what it means to develop a future Johannesburg, where urban nodes will "rise like islands in a sea of green" (City of Johannesburg, 2019, p. 63).

Inspired by Walter Benjamin, I explore the concept of anaesthesia as a sensory abundance, and not as a drug to alleviate (Buck-Morss, 1992, p. 18), to unpack the desire for greenery. By flooding the senses with greenery, a pleasant and tranquil environment is created. Such techno-aesthetics create a collective distraction instead of an individual chemical change. Through such a collective distraction, "everyone" experiences the same changed world, and so the world also appears as real and natural (Buck-Morss, 1992, p. 22), which is why cultivating greenery goes on undisputed. While acknowledging that nature-centred practices have environmental, social and health benefits, I approach the cultivation of greenery as a strategy to create anaesthetic urban areas that flood the senses. To support my claim, I investigate the production of advertisements of properties for sale and how residents in Johannesburg co-produce tranquillity through greening.

3 Cultivating Greenery

"This is the money shot!" uttered the real estate agent as the photographer took pictures of the lounge with the scenic view of a blue sky, lush green trees, and a golf course in the distance framed in by the large windows. The spacious apartment located in the leafy suburbs was later advertised as a classic apartment with "space, light, security and expansive views". The garden, with a blue pool, lush green lawns, and colourful flowerbeds, was nestled within the u-shaped building. During visits to similar apartment complexes, residents uttered that this is a "people-loving garden" or a "people-loving building". In another suburb, a real estate company sponsored the salary and equipment for a gardener to care for the local public park because the municipality only cut the grass. Thus, nature-centred practices cultivate aesthetic expressions that can increase the value of surrounding properties, and function as an extension of the residents themselves. Greenery is a symbol of wealth because creating an anaesthetic environment in the Highveld is expensive and labour-intensive.

Additionally, I view the sensory flooding as an anaesthetic strategy to compensate for the concrete, steel, and security architecture and technology that characterise the suburbs. Further, the Greening Soweto initiative (2006–2010) that planted 200,000 Indigenous trees in townships to eliminate the "green divide" legacy of apartheid (van Staden & Hoffberg, 2021), is arguably an anaesthetic strategy to compensate for apartheid urban planning by mirroring the undisputed anaesthetic greening of affluent areas. As such, these strategies are attempts of creating an encompassing anaesthetisation that extends out of the private enclave and across city spaces.

The technical manipulations of urban nature become particularly visible when the perceived "real" anaesthetic urban, is disrupted. The water scarcity in Cape Town in 2018 increased the number of residents installing artificial grass in their yards (Kammies, 2018), arguably to continue flooding their senses with a green, soft, and clean turf. In 2021, the self-proclaimed 'cabbage bandit' in suburban Tshwane, was ordered by the police to replace the cabbage and onion planted along his pavement with more visually pleasing plants (Banda, 2021). Consequently, cultivating nature is a process of cultivating very specific nature-like ideals.

Longing for nature in the urban is not a uniquely South African phenomenon. Tree-planting initiatives, guerrilla gardening and other greening practices are enacted around the world (i.e. Hardman & Larkham, 2014; Tidball & Krasny, 2014). Nevertheless, how these nature-centred practices unfold, uncovers specific tensions of access to land, property rights, desire for belonging and recreations of colonial fantasies. Since the addiction of techno-aesthetics

can be used as social control (Buck-Morss, 1992, p. 23), unpacking the "money shot" can further shed light on how greening and labour relations in South Africa are entangled in race, class, and gender as well as part of legitimising processes of exclusion. Raidoo (2020) argues that gated communities are designed to be anodyne and that it is, "a way for residents to remove themselves from the upsetting conditions in the country at large" (p. 138). I contend that the desire to create an anodyne environment is just as relevant outside gated communities, as exemplified through the anaesthetic strategies of greening presented above.

4 Concluding Remarks

Without disregarding the environmental and social benefits of urban green spaces, it is necessary to critically address the hegemonic discourse on greening to denaturalise the exclusively positive implications of nature-centred practices in Johannesburg, as the cultivation of anaesthetic urbans continue to reproduce classed, gendered and racialised perceptions of Johannesburg's socio-spatial landscape. Although the City of Johannesburg's (2019) Growth and Development Strategy (GDS) highlight the current water scarcity of the city, its commitments to climate change resilience, and environmental protection, the GDS also aim to create "a sea of green" throughout the city. Considering the city's location in the Highveld, flooding the senses with urban nature, that ultimately can culminate into "the money shot", are water and labour-intensive. Consequently, the current cultivation of the anaesthetic environment through nature will eventually fail. At the same time, the resistance to conform, as exemplified by the 'cabbage bandit' and the general strong commitment of said practices, demonstrates the generative forces of urban imaginaries of greening and the potential to remake suburban landscapes anew.

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The Informal Land Market in the Belo Horizonte Metropolitan Area: Evidence from the Inspection of Irregular Subdivisions (2009–2018)

Daniel Medeiros de Freitas, João Tonucci, and Sophia Guarnieri

Abstract

Peripheral capitalist cities are characterized by extreme socio-spatial inequality, precarious housing conditions, and the prevalence of informal arrangements for access to land and housing. In Latin America, one of the main access routes for the lower classes into the city, in addition to squatting on unused land and property, is the informal market for urban land. In Belo Horizonte, this market expanded considerably from the 1950s onwards, and its most striking socio-spatial impact was the rapid expansion of precarious and self-built peripheral areas. In the last decade, the strong Brazilian real estate boom led to an expansion of the formal real estate market and its extension to populations previously excluded from it. The article presents the results of a study that examines the informal market for land subdivisions based on official data and interviews with informal land developers. The text presents the preliminary results of an ongoing investigation that emphasizes the importance of further examining this pervasive and complex form of urbanization considering its relations with the increasing penetration of financialized and rent-seeking logics of urban production, as well as the challenges and contradictions related to the action of the state and social movements.

Keywords

Informal land market • Peripheral urbanization • Inspection of irregular subdivisions

D. M. de Freitas (✉) · J. Tonucci · S. Guarnieri
Federal University of Minas Gerais (Ufmg), Belo Horizonte, Brazil
e-mail: danielmedeirosdefreitas@gmail.com

1 Introduction

Global South metropolises are characterized by socio-spatial inequality, housing precariousness and the preponderance of informal arrangements for accessing land and housing and for securing work and income (Rolnik, 2019). One of the main means by which popular classes have had access to the city is through informal land markets, either in consolidated settlements or in irregular or clandestine land subdivision markets (Jaramillo, 2008). This particular land subdivision market operates through the informal fractioning of rural or peri-urban land parcels on city's fringes and the development of underserviced and often precarious subdivisions (Abramo, 2007). They constitute a pervasive modality of peripheral urbanization in Latin America (Fig. 1), producing deeply segregated, poorly infrastructured, highly heterogeneous, and increasingly distant and disperse urban peripheries (Caldeira, 2017).

The operation of producing informal subdivisions in the periphery includes the following steps: the developer negotiates the land with its original owner at a price slightly higher than the price of rural land; configures the area by delimiting the plots, designing a basic road system and implementing a minimum infrastructure; then sells the land to buyers who are willing to self-build their homes (Fig. 2). Sometimes, the developer even creates a resident's organization, subordinate to him, which is in charge of providing collective goods and organizing claims before the authorities. The magnitude of the sale price of land is moderate compared to formal subdivisions, but very high compared to rural land, and includes infrastructure expenditures, however precarious they may be (Jaramillo, 2008).

In the city of Belo Horizonte, informal land markets have played a major role in accommodating the rural–urban migration flow associated with rapid industrialization and urbanization between 1950 and 1980 (Plambel, 1987). Its most striking socio-spatial result was the rapid extension of a segregated, precarious and self-built periphery that became

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Fig. 1 Informal subdivision in the periphery of the municipality of Juatuba-MG

Fig. 2 Self-construction and precarious urbanization

the locus for the reproduction of the working class (Costa, 1994). After decades of neoliberalization, economic restructuring and slower demographic growth, these markets have continued to push metropolitan boundaries further out. Not even last decade's real estate boom, marked by a federal mass-production housing program and expansion of formal housing markets (Magalhães et al., 2011; Rolnik, 2019) were able to put a hold on informal subdivisions. Even so, this remains an under-the-radar phenomenon in planning and academia.

2 Theoretical Background and Methods

This research investigates the structures, dynamics and actors of informal land markets and their role in the processes of peripheral expansion in the Metropolitan Region of Belo Horizonte over the last two decades. The literature review articulates work focused on Brazil and Latin America, and related to the themes of urban political economy and land markets (Abramo, 2007; Jaramillo, 2008; Ribeiro,

2017); property, housing and informality (Fernandes, 2011; Holston, 2013; Rolnik, 2019); autoconstruction and peripheral urbanization (Caldeira, 2017; Maricato, 1996); neoliberalization and financialization (Brenner, 2004; Ribeiro, 2017); extended urbanization and suburbanization (Monte-Mór, 2015; Costa, 1994; Keil, 2018); and popular and solidarity urban economies (Coraggio, 1994; Santos, 1993; Singer, 1973).

More specifically and closer to the results presented in this text, we pay attention to the great gains that can be made with the capture of land value increment resulting from the transition from rural to urban land (Jaramillo, 2008). We also consider the role of social networks of "face-to-face" relationships in providing flexibility to payments, sustaining informal credit systems and guaranteeing security to buyers in informal land markets (Cockburn, 1999). Moreover, this relates to pre-modern commercial practices in which an "opaque personalization" acquires relevance in the adjustment of supply to demand preferences and capacity to pay (Abramo, 2007). Finally, we emphasize that informal developers, due to their usual popular origin, can share cultural and social traits with their clients, allowing them to both offer mechanisms that are more adapted to their social conditions, and to create extended and complex social networks (Jaramillo, 2008).

The methodology (Fig. 3) combines secondary data with a systematization of three databases made available by the state government: the prior permit processes (2000–2018); the inspection processes of irregular subdivisions (2009–2018); and detailed inspection records. The analysis allowed us to proceed to a first typification of informal developers and, later, to semi-structured interviews with public and private sector actors, market information research and fieldwork.

3 Case Study

Since 2011, the MRBH Agency has been responsible for issuing prior permits for the approval of new land subdivision projects. The inspection can charge different five situations of irregularity: (i) land subdivision without permits; (ii) land subdivision in disagreement with the agreed project; (iii) non-compliance with administrative order; (iv) publication of misleading advertising; and (v) noncompliance with rules related to the metropolitan urban order. In the opinion of an interviewed technician, the fifth type is the most comprehensive, including cases of charges and fines for lack of infrastructure and subdivision in rural areas.

The insufficient number of land inspectors, the length of the processes and the lack of information were the main problems mentioned, which means that only 5–10% of the inspected developments are regularized. The distribution of occurrences by inspection claimant indicates a concentration in two bodies: the MRBH Agency (51%) and the Public Ministry of Minas Gerais (37%), with little action by city halls (7%). Regarding what motivated the start of the inspection process, most of the cases originated in routine inspections by the Agency (51%) and complaints (47%), many of them sent first to the Public Ministry. The distribution by type of developer reveals a concentration of those inspected in companies (42%) and individuals (40%), with a relevant participation also by the public authorities (13%), the latter being mostly developments originally of private origin whose responsibility at some point was assumed by the municipalities (Fig. 4).

The recidivism of charged land developers usually occurs among: (i) land developers from rural areas for urban purposes; and (ii) the oldest popular subdivision companies. The low value of the fine and the fragility of inspection are

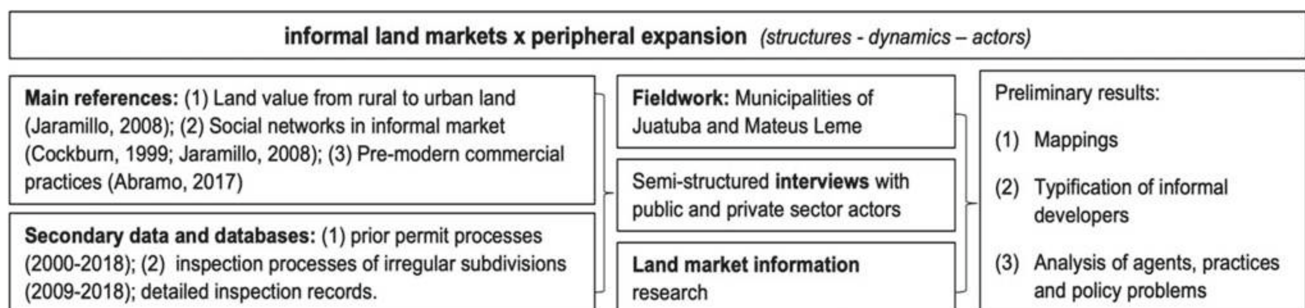

Fig. 3 Theoretical background and methods

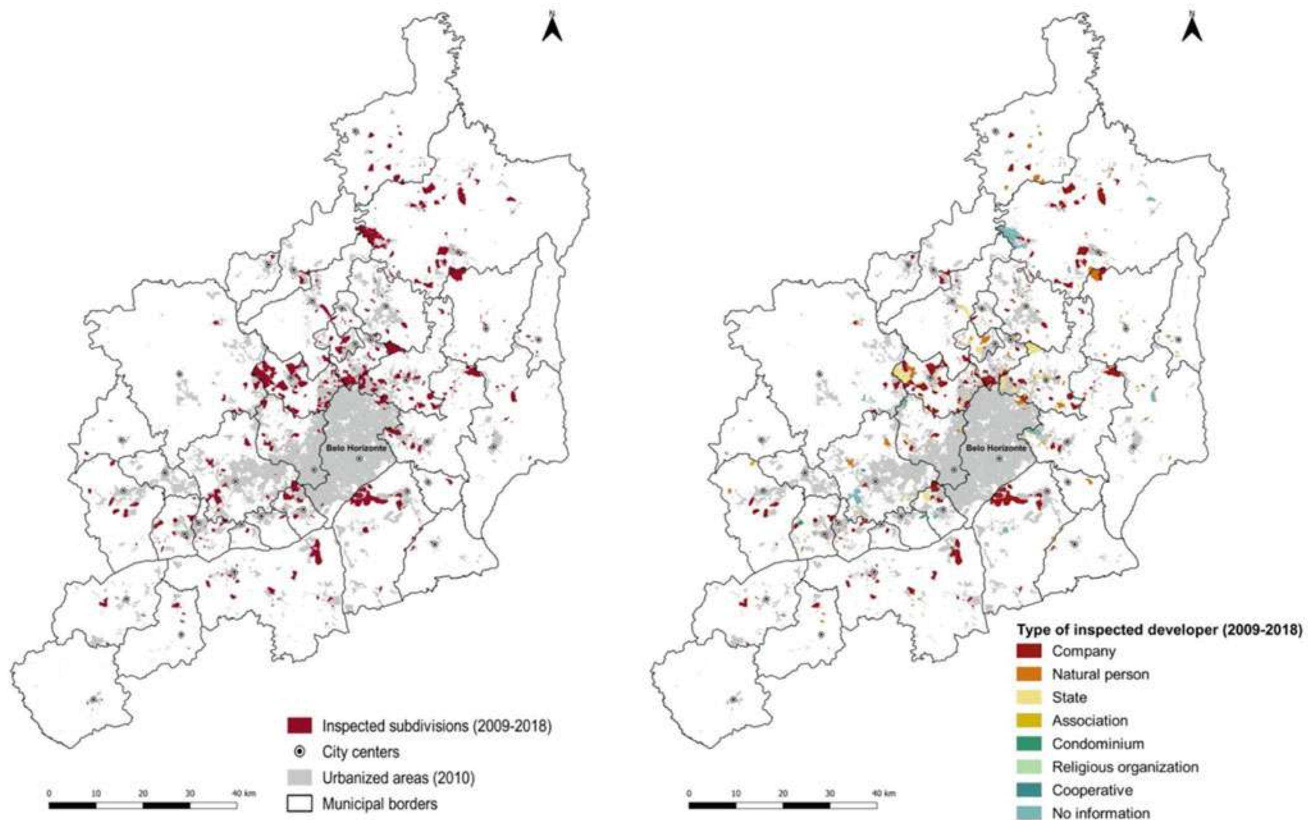

Fig. 4 Inspection process and typification of developers

motivating aspects of the repeated informal subdivisions. In addition, situations of clientelism and patrimonial association between land developers, traditional families and local and regional political groups were mentioned. For some smaller municipalities, a close link was reported between local elites, "families that own the city", and the informal subdivision market.

4 Results

Preliminary results point to a large concentration of informal land developments in the southern and northern vectors of the metropolitan region, confirming the dynamics of expansion for these regions, side by side with formal expansion. The analysis of the agents of the informal subdivision market shows a high recurrence of real estate companies and individuals (probably owners), operating in rural areas. There seems to be no preponderance of any major agent, but dispersion and concentration of certain business actors in their respective regions of operation, where they are linked to local networks of power, clientelism and patrimonialism.

Many of the inspected projects are gated subdivisions for high-income owners, questioning the immediate association of the informal with low-income popular groups. There still seem to be dynamics of a speculative nature in the land market that continue to drive peripheral expansion beyond the existing solvable popular demand, resulting in enormous vacancy and spatial discontinuity. Added to this are different dynamics, such as the purchase of property as a second residence or form of investment, in addition to the unequal and fragmented action of the state and municipalities. The metropolitan policy and urban land policy seems to have little practical effect. On the contrary, the urban and environmental restrictions required by formal urbanization still seem to be important pressure vectors for a portion of the popular land market to continue operating informally.

The data seem to indicate that the development of informal subdivisions was strengthened during the last real estate boom of 2007–2014 (perhaps as an alternative to the high prices practiced in the formal market and to the exclusion of part of the population from housing credit), but tend to remain or even expand during the crisis that began in 2015 (perhaps due to lower capital requirements as well as the growing impoverishment of the working population,

added to the dismantling of housing policies). An agent interviewed noted that, after the end of the boom and due to the crisis, requests for permits dropped significantly, while inspection began to receive more demand. Regarding the expansion process, it can be inferred that the new subdivisions confirm the dynamics of precarious peripheral urbanization as the main vector of urban advancement over rural, largely in defiance of legal restrictions and municipal and metropolitan planning efforts.

Another line of investigation that needs to be deepened concerns the modus operandi of popular/informal promoters. One of the interviewees mentioned that the main communication channels today for irregular land developers are social networks (Facebook, Instagram …) and banners spread not only in municipalities, but in strategic regions. References are also common to modalities of direct financing with the developer, with small down payments and negotiation of modest installments, whose security is based on purchase-and-sale contracts and on trust, in the absence of legal title deeds. The investigation gains relevance in view of the worsening of the country's socio-political-economic crisis, especially if we consider the reaffirmation of oligarchic and rentier interests involved in the ultraliberal inflection (Ribeiro, 2017), the escalation of land conflicts and the worsening of the social and economic situation, which call into question the right to housing and the right to the city.

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Urban Form and Health Status in Gauteng, South Africa

Rhena Delport, David Everatt, Thesla Palanee, Johannes Hugo, and Tobias G. Barnard

Abstract

Residential spatial impact on increased susceptibility to coronavirus transmission is mainly reported in communities residing in high-rise residential buildings and slums or informal settlements. This study investigates differential SARS-CoV2 infection according to urban form and site—high-density apartments (HDA) in Hillbrow, Johannesburg, formal township housing (FTH), and formal dwellings' backyards (FTB) in Atteridgeville, Tshwane, and informal settlement dwellings (ISD) in Melusi, Tshwane—to inform precautionary strategies. The study was conducted as a randomized cross-sectional household survey with serological testing (n = 3053). Data was collected between 23 March and 10 October 2021 across sites during overlapping periods. Previous SARS-CoV2 infection was assessed by Wantai SARS-CoV-2 Ab ELISA and Elecsys Anti-SARS-CoV-2 ELISA testing. Logistic regression analyses assessed the association between seropositivity and demographic variables in the study population during two periods—Period 1: following the Beta wave up until 31 May, at the start of the Delta-variant wave—and Period 2: commencing thereafter. Period 1 comprises mainly ISD and FTD samples and Period 2, HDA and FTD samples. Seroprevalence was highest in HDA (85%), lowest in ISD (35%), and similar in formal township dwellings (FTD) (FTH 45%; FTB 47%), and appeared to increase over time, irrespective of urban form and time during the pandemic. Multivariate analysis showed increased odds for seropositivity regarding the urban form, period, age group, and sex. Contrary to the previous observations, ISD are least susceptible to SARS-CoV2 infection, and younger age and female sex contribute significantly to seropositivity. Additional urban form-associated factors like contact rates and mobility need to be considered to better understand the relationship with health.

Keywords

Urban form • SARS CoV2 • Susceptibility

1 Introduction

The global SARS-COV2 pandemic is an exceptional emergency and presents a serious risk to human health and livelihoods, especially in countries with complex economic and political problems, such as South Africa. The first diagnosis of a SARS-CoV2 positive case in South Africa was reported on 6 March 2020 (Mkhize, 2020) and to date (14 March 2022) a cumulative total of 3,688,423 confirmed SARS-COV2 cases in South Africa has been recorded, 32.5% (1,198,037) of which reside in Gauteng (NICD Report, 2022).

R. Delport (✉) · T. Palanee · J. Hugo
School of Medicine, University of Pretoria, Pretoria, South Africa
e-mail: rhena.delport@up.ac.za

T. Palanee
e-mail: tplanee@wrhi.ac.za

J. Hugo
e-mail: jannie.hugo@up.ac.za

D. Everatt
Urban Governance, University of the Witwatersrand, Johannesburg, South Africa
e-mail: david.everatt@wits.ac.za

T. Palanee
Wits Reproductive Health and HIV Institute, University of the Witwatersrand, Johannesburg, South Africa

Department of Epidemiology, School of Public Health, University of Washington, Seattle, Washington, USA

T. G. Barnard
Water and Health Research Centre, University of Johannesburg, Johannesburg, South Africa
e-mail: tgbarnard@uj.ac.za

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Disadvantaged urban communities are more susceptible to Covid infection (Gostin, 2020; Nwosu & Oyenubi, 2021; Shi et al., 2022), as are middle-class and wealthy communities, particularly where spatial resilience is lacking, e.g., in high-rise residential buildings (Lu et al., 2020; Shi et al. 2022). An increase in densification in South Africa is evident, as reported (Turok et al., 2015). The paucity of data for South Africa regarding Covid infections in densely populated areas, specifically in areas comprising high-rise buildings, prompted the identification of at-risk communities to ensure national preparedness and prevention of economic hardship (Moonasar et al., 2021).

Residents of informal settlements are particularly vulnerable because of a lack of basic needs and secure and adequate housing, and because space constraints and overcrowding make physical distancing and self-quarantine impractical (Corburn et al., 2020; Gostin, 2020). In addition, lockdown measures have dire consequences on socioeconomic status and health care access (Gummerson et al., 2021; Nyashanu et al., 2020) which perpetuates vulnerability. A study about socio-demographics and Covid, reported a significant association between seropositivity, low-income occupation, and living in households in low-income sub-district, as well as residing in an informal dwelling (Shaw et al., 2021). This supports the contention that informal settlements may be more susceptible to Covid infections in South Africa. High average levels of risk observed in townships and some high-density inner-city areas relate to the inability to maintain basic preventative hygiene and social distancing due to crowded living conditions; the sharing of water and toilet facilities; dependence on public health care facilities; limited access to communication tools and reliance on public transit (de Kadt et al., 2020). Therefore, urban forms of interest to this investigation are informal settlements, townships, and inner-city areas in Gauteng with exceedingly high levels of population density.

This report aims to investigate the seroprevalence of differing urban forms, taking temporality into account. The assumptions about urban form and life outcomes are challenged, particularly the notion that a hierarchy of spaces will produce a matched hierarchy of outcomes.

2 Method

The study was approved by the research ethics committees of the University of Pretoria, Witwatersrand University, and the University of Johannesburg. Informed consent was provided by all volunteers. The study was conducted by the Declaration of Helsinki Ethical Principles and Good Clinical Practices.

The study was conducted as a randomized cross-sectional survey. The study employed a seroprevalence survey in adult participants of randomly selected dwellings, (n = 750) per dwelling type, across the three sites. Data was collected between 23 March and 10 October 2021 across sites.

The Chi-Square Test for Heterogeneity or Independence was used to establish frequencies. Logistic regression analyzes were performed to assess the association between seropositivity as the dependent variable, urban form, and demographic variables in the study population. Temporality was accommodated by dichotomization based on the Delta-variant manifestation in Gauteng; Period 1: up until 31 May 2021 and Period 2: thereafter. The 60th age percentile of the total sample was used for dichotomization of age ($</\geq$ 34 years).

The Roche Elecsys Anti-SARS-CoV-2 ELISA (Roche Diagnostics GmbH, Mannheim, Germany) and the Wantai SARS-CoV-2 Ab ELISA (Beijing Wantai Biological Pharmacy Enterprise Co. Ltd, Beijing, China) were employed for SARS-CoV2 antibody testing. According to manufacturer instructions, results were reported as positive if either of the test results were positive.

3 Results and Discussion

More females volunteered to participate in HDA compared with the other urban forms. Participants from the FTD were older, and the HDA and ISD had similar age profiles. The ISD samples were mainly collected before-, and HDA samples after the Delta wave occurrence, whereas sample collection in FHD spanned both periods. Only 157 participants were vaccinated during the study period and those were mostly from HDA (Table 1).

The seroprevalence in HDA is the highest and may be attributed to high population density, building-related factors (de Kadt et al., 2020), and the period of sample collection. FTD and ISD seropositivity increased markedly over periods, although the sample lacks power in ISD for Period 2. The low seroprevalence in ISD is not congruent with previous reports for this urban form in South Africa (Shaw et al., 2021), which speaks to the spatial differentials that may exist between informal settlements.

Age and sex were observed to be associated with risk for Covid infections in a meta-analysis (Pijls et al., 2021). Doerre and Doblhammer (2022) highlight the importance of gender-specific social behavior and contact rates and report the highest infection rates amongst the young and working age in Germany. Figure 1 demonstrates that seroprevalence differs between sites in younger participants, using the 60th percentile of the total sample age as the cutoff. Table 2

Table 1 Study population description

	Backyard (FTB) (n = 748)	Formal (FTH) (n = 777)	Informal (ISD) (n = 781)	Flats (HDA) (n = 747)
Mean (±SD) age	47.3 (±19.8)	50.8 (±18.6)	36.08 (±14.2)	34.9 (±11.0)
Age group <34 years	231 (21%)	163 (27%)	387 (50%)	370 (50%)
Females	458 (61%)	462 (59%)	468 (60%)	503 (67%)
Seropositivity	47%	45%	35%	85%
Period 1 participants (%)	473 (63%)	633 (81%)	762 (98%)	14 (2%)
Seropositivity period 1	194/473 (41%)	266/633 (42%)	263/762 (35%)	7/14 (50%)
Seropositivity period 2	158/275 (57%)	83/144 (58%)	11/19 (58%)	630/733 (82%)
Vaccinated participants	14	2	4	137

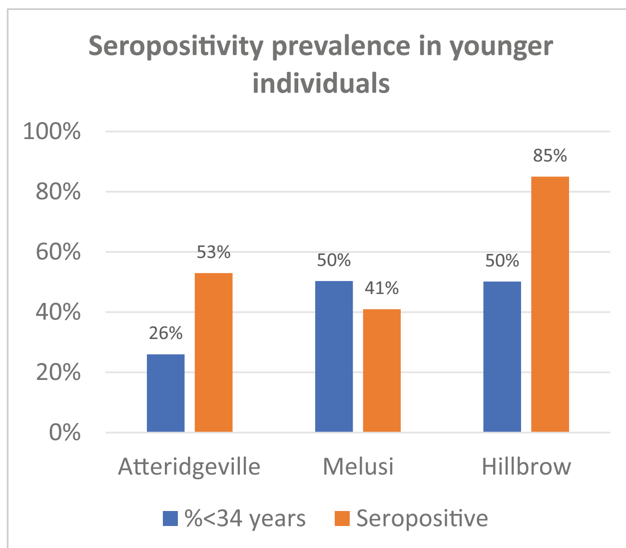

Fig. 1 Frequency of individuals aged <34 yrs. per site and prevalence of seropositivity within this age group

Table 2 Dwelling type-specific relative odds for seropositivity

	Adjusted Odds ratio (95% Confidence Interval) for Dwelling type[1] Age ($</\geq$ 34 years)[2] Sex[3] Period[4]
FTB relative to ISD	1.43; (1.12–1.81)[1] 1.42; (1.15–1.77)[2] 1.45; (1.18–1.79)[3] 1.92; (1.44–2.57)[4]
FTH relative to ISD	1.18; (1.02–1.38)[1] 1.42; (1.15–1.77)[2] 1.45; (1.18–1.38)[3] 1.72; (1.23–2.42)[4]
HDA relative to ISD	1.42; (1.11–1.81)[1] 1.12; (0.88–1.43)[2] 1.38; (1.08–1.77)[3] 4.01; (1.91–8.42)[4]

reports the odds for seropositivity that relate to sex, age, and vaccination status, using the Melusi site as a reference.

As reported in Table 2, younger age and sex were independent determinants of seropositivity for all urban forms versus ISD, as are site-specific determinants, and compounding facilitators over time.

4 Conclusion

According to Irandoost et al. (2022), after reviewing some of the literature relating to Covid-19 specifically in urban settings, concluded: "…we cannot set a general rule" for urban typologies—rather, they conclude, "It is necessary to examine each urban context according to its conditions". That is also the lesson learned here: unserviced, informal areas—commonly regarded as urban slums—are not an undifferentiated mass, with a single urban label that explains and describes the space and the people within the space. Neither are high-rise apartment dwellers who suffered the highest seroprevalence rates, despite being in formal, serviced areas. The data do not align with a simple urban narrative, and not with an implied set of judgments about those spaces. Informal areas are not 'slums' inhabited by 'squatters'—they are an unavoidable by-product of colonial-era city planning not being able to accommodate the local population, which moves into every available nook and cranny. But these are variegated, complex individuals, operating in ways that are frequently ignored behind labels such as 'slum' or 'squatter'. Left to their own devices—or locked down into them—they also enjoyed the lowest

Covid-19 infection rates, suggesting that Irandoost et al. were correct: no easy (urban) judgments are available to us in terms of Covid-19 infection.

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Un-Slumming the Slum of a Small Town: An Ethnographic Account from Bodh Gaya, India

Ritika Rajput and Aarushi Rai

Abstract

A slum is considered a place which suffers from poverty, overcrowding and fundamental infrastructural deprivation. Slums have produced/reproduced socio-economic inequalities, further deepening social divisions. In popular urban literature, a slum is deemed as a phenomenon of megacities; nevertheless, it applies to all urban centres in India. Against this backdrop, the paper aims to examine what 'slum' as a category means for small towns. We consider urban centres with less than 100,000 population as small towns. We are particularly interested in understanding the formation of slums in these urban settings. Further, we explore how this categorisation influences the availability and accessibility of fundamental amenities for its residents. Bodh Gaya, an internationally renowned town in Bihar in India, was used as an empirical. The slums in Bodh Gaya are the result of a complex intersectionality of historical land politics and tenure insecurities, caste, and lack of basic amenities. There are no compelling differences between the living conditions of non-slum and slum residents as far as this small town is concerned. Consequently, we question the validity of 'slum' as a category in small towns, and question the categorisation which is complicit in further deteriorating the living conditions of urban poor.

Keywords

Slums • Small towns • Infrastructure • Land tenure • Bodh Gaya

1 Situating Slums and Small Towns

Slums are considered an indispensable feature of the global south urbanism. Scholars have looked at slums as dystopic spaces (Davis, 2004); even 'crisis' (Hall & Pfeiffer, 2000) or a means of 'production of space' (Roy, 2009). Slums are spaces of active politics while being geographies of governance (Chatterjee, 2004). Academics from global south have studied slums of megacities through various theoretical frameworks.

Slums have been produced/reproduced as the governance apparatus prescribed certain physical standards which are aesthetically oriented towards built forms (Rao, 2012). Slum as a category does not confine to the 'built', but also extend to 'citizenship, rights and belongingness' (Rao, 2012).

Slum as a category has been well-established as an epistemological and ontological tool to understand megacities' urbanism. Even in the multifaceted slum narratives, small towns have not found their place. Beyond popular urban models, here, we attempt to understand slums as a category in small towns.

The objective is to understand how slum as a category stands in Indian small towns. We examine how 'slum' as a category gets produced/reproduced. We further delve into their formation stories and attempt to understand how these stories influence their categorisation. We also use the definition of slum by the United Nation for comparative analysis.

We try to understand how the label slum impacts the availability and accessibility of basic infrastructure. Finally, we attempt to understand how the residents of the settlements whether slums or not slums identify their settlements and themselves as.

R. Rajput (✉) · A. Rai
Independent Researchers, Bodh Gaya, India
e-mail: ritikarajput3797@gmail.com

A. Rai
e-mail: raimk09@gmail.com

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1.1 Defining Slum

The existing definitions of slum are at different scales encompassing several variables and aspects to categorise certain settlements as slums. UN Habitat (2004) presented an umbrella definition of slum covering the lack of durable housing, inaccessibility to affordable basic infrastructures such as safe drinking and sanitation, and security of tenure. The census survey has classified slums into three types depending on their notification and living conditions, namely: notified, recognised and identified slums. 17.4% of India's urban population of 377.11 million, or 65.49 million people reside in slums.

Here, Bodh Gaya is presented as an empirical case to understand the slums in small towns. Recently, its boundaries have been reclassified by the Bihar Municipal Act, 2007 resulting in an increased area from 19.85 to 34 km^2 with a population of 74,735 (Census of India, 2011). The governance apparatus was also promoted from Nagar Panchayat (Notified Area Council) to Nagar Parishad (Municipality). Despite the growth, Bodh Gaya still stands as a small town. Although a Nagar Parishad is in the making, for the purposes of this paper, we have considered the former boundaries with 6000 households. Bodh Gaya is a rural town with more than 60% of its land under agriculture and water bodies (CDP, 2011).

The field visit was conducted from March 23, 2022 to March 28, 2022,[1] with support from extensive Master dissertation work conducted in December 2019–March 2020. Primary data about the slums is obtained from the Bodh Gaya Nagar Parishad (BGNP) while secondary data is retrieved from the census of India (2011) and planning documents (City Development Plan, 2006, 2011). Two notified slums (Rampur and Rajapur-Dahariyabigha), two identified slums (Taridih Dhila Par (Old Taradih) and New Taridih (Bhagalpur)) and one non-slum settlement (Miya Bigha) were selected for the field exploration. 27 individual and group interviews of residents and BGNP officials were conducted using a semi-structured questionnaire. An ethnographic approach was taken to explore the formation stories of the slums/not slums and where they stand in Bodh Gaya.

The objective behind choosing ethnography as a methodological tool was to be able to grasp the interaction between people and their built spaces, experiences and their world (Till, 2009). The methodology allows for the collection of empirical data from the 'real world' followed by rigorous analysis while engaging in sustained contact with the chosen field. The methodology also provides relative flexibility in the population size and the size of the space depending on the goal of the study.

Table 1 Slums in Bodh Gaya

S. No	Categories	Slums
1	Notified	Janpur, Rampur, Rajapur-Dahariyabigha, Tikabigha
2	Recognised	North part of Suryapur, Sewdharbigha, Amawa
3	Identified	Amwan North, Sewdharbigha, Suryapur, Bapurnnagar, Baijubigha (Sujata Nagar), Bhagwanpur, Hariharpur, Durgapur, Amwan South, Bhatbigha, Magadha University, Taridih Dhila par, Mastipur, New Taridih

Source BGNP (2022)

2 Slum/Not a Slum in Bodh Gaya

In Bodh Gaya, all three national categories of slums exist, with the associated areas specified in Table 1.

It is also pertinent to note that around 55% of Bodh Gaya's residential areas are identified as slums by SPUR-DFID[2] in 2010 (CDP, 2011). The Census of India (2011) claims that 46% of the population lives in slums in Bodh Gaya.

We discuss our findings below.

2.1 Land, Zamindari and Insecure Tenures

The land issue of Bodh Gaya has its root in the zamindari system that was prevalent in India since the Mughal Period. In 1979, the fragility of the land tenancy issue resulted in a revolt by its residents (Geary, 2017). After the struggle, the then Bihar Government divided the land into three parts, detailed in Table 2.

80% of the supposed slum households in *Gairmajarua Khas* belong to the Scheduled Caste (SC) community. Irrespective of being a slum/not a slum, residents live with a sense of insecurity.

2.2 Infrastructure, Density and Durable Housing

In terms of Infrastructural availability and accessibility, one cannot distinguish between a slum/not a slum classified households. Under government schemes, a total of 530 toilets have been constructed irrespective of their classification.

[1] This study is stemming from the Masters disseration (2018–2020) of the first author at Nalanda University, Rajgir.

[2] Support Program for Urban Reform (SPUR program) is funded by Department for International Development (DFID).

Table 2 Land Ownership and slum households

S. No	Land type	Households	Percentage
1	*Gairmajarua Aam*-Public/community land	120	7.24
2	*Gairmajarua Khas*-Bihar Govt	1261	76.14
3	*Raiyati* (Private)	275	16.60

Source BGNP (2022)

A survey says 9.4% of the households are equipped with piped water supply; more than 21% depend on the stand posts, while others rely either on borewells or hand pumps (Water Aid, 2021). Hence, slum/ not a slum does not define the accessibility to water and sanitation.

In terms of population density, the town has been described as having 'low' density ($\sim$18 per person hectare, PPH), as per CDP 2006 and 2011. For developed areas in Bodh Gaya, the reported density is 58 PPH which is very less compared to the Urban Development Plans Formulation and Implementation (UDFPI) guidelines which recommend 75–125 PPH density for small towns. During the field visits, it was observed that there were no cases of overcrowding in the supposed slums. Through ethnographic observation, many settlements showed rural characteristics unique to their areas owing to their history, occupation, evolution, and nature of local governance. These rural characteristics do not necessarily portray slums.

Rampur showed aesthetic characteristics of a village containing large agricultural fields, cattle, and spaced-out homes denoting low density. Interlocutors reported that the residents are engaged in agriculture and allied activities (see Figs. 1 and 2).

Fig. 1 The main lane of Rampur

Fig. 2 A lane in the central area of Rampur

Miya Bigha (not a slum) situated on a private land is dominantly occupied by the SC community and its living conditions are undermined (see Figs. 3 and 4). In terms of sanitation and density, the area held more similarities with the typical definitions of slums, thus raising the question of

Fig. 3 A lane in Miya Bigha

Fig. 4 Besides a community toilet in Miya Bigha

the characteristics considered by the state to categorise settlements as slums/not-slums.

2.3 Slum or Village?

While the state has its own categorisation for settlements, our findings signalled a different identity experienced by the residents. Our interlocutors from all the different slums identify their settlements as a village.

3 Conclusion

Slums in Bodh Gaya are the result of a complex intersectionality of historical land politics and land tenure insecurities, caste, and the lack of basic amenities. The paper brings out the formation stories of slums in a small town and elaborates on the self-identities of their residents. There is no evident basis to distinguish slums from non-slum settlements as provided by the governance mechanisms. We seek clarity from the state regarding the benchmarks used to categorise settlements in Bodh Gaya town as slum/not a slum.

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Most Colonial Architecture: Oriental Architecture of Bosnia and Herzegovina Along the Border Between National Discourses

Lejla Dzumhur

Abstract

The main purpose of this research is to establish a clearer presentation of the meaning of the Orientalist expression in Bosnia and Herzegovina, with the aim of mitigating its manipulation in the post-conflict present. Its vague context of origin, of identification with Islam, the Muslim community and indirectly with the controversial Ottoman legacy in Bosnia and Herzegovina resulted in its positioning on the dividing line of the dominant national groups in post-conflict Bosnia and Herzegovina. To answer this purpose, the paper is structured into two parts, focused on the following questions: Could the Muslim social group see the Orientalist expression as one of the building blocks of its own national identity at the initial moment of construction (around 1900)? What is the wider meaning of Orientalism within the colonial context of its creation? The first part of the paper considers the perspective of the periphery on the production of Orientalism. It was sampled from literary periodicals (transnational), as well as from illustrative historical sources, with the purpose to outline the spirit of the periphery found on the path of modernization and national disintegration, and indirectly communicate its standpoint on changes in space. The second part of the paper outlines the broader problem of the meaning of Orientalist architecture. This is examined through the interplay of differentiated Orientalist discourse defined by Heiss and Feichtinger (2013), the colonial paradigm set out by Ruthner (2018) and the functional typology of Orientalist buildings. The analysis should provide an insight into the regulatory role of the Muslim national element in the visual expression of colonial or Orientalist narratives.

Keywords

Orientalism • National identity • Colonial politics • Austro-Hungarian Monarchy

1 Introduction, Problem Statements and Major Issues Addressed

The conflicting nature of the Ottoman legacy in Bosnia and Herzegovina is rooted in the long-ago political inequality of the non-Christian class and the privileged religion of the Ottoman theocracy—Islam, and the Muslim population. Images of the Ottoman heritage are part of the dominant discourse that continues to legitimize and reproduce the sharp and supposedly insurmountable division between "foreign Muslim Turks" and "domestic Christian peoples" (Hajdarpašić, 2008:716). Ottoman architecture as the heritage of *Muslim foreigners* found itself on the dividing line of dominant national forums. According to this pattern, Orientalism from the Austro-Hungarian period is very easily directed towards this dividing line. The ever-present tendency to identify the broader concepts of Orientalism and Islam (Çelik, 1992a, 1992b; Jezernik, 2004; Said, 1978; Todorova, 2009) by Christian nationalities, as well as Muslims (notion of self-Orientalization: Dervišević, 2021; Lau, 2009; Lau & Mendes, 2011; Maurer, 2014), suggests the opinion that Oriental architecture—Islamic architecture—was produced for the Muslim confessional/national community.

The connection along the Islamic-Ottoman-Oriental notions embeds Orientalism in the discourse of segregation and conflict. All dominant national forums are more inclined to accept this suggestion in the post-conflict society. The

L. Dzumhur (✉)
Faculty of Architecture, University of Sarajevo, Sarajevo, Bosnia and Herzegovina
e-mail: lejlas@af.unsa.ba

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elements of the 1992–95 conflict in general, but also some symbolic images, are an upbuilding factor of tensions. The image of the destruction of the Orientalist Sarajevo City Hall embodies the saga of the siege of Sarajevo and Bosnia and Herzegovina—the annihilation of cultural, national and state identity. The event of the destruction of the City Hall, intertwined with numerous disputed elements of the 1992–95 aggression (Cigar, 1995; Dartel, 1995; Davis, 1996; Walasek, 2016), contributed to the conflicting national agendas of annexation and appropriation (Alić, 2002; Hartmuth, 2011:99–102). It can be concluded that the power of these images simultaneously underlined the false notion of Orientalism as Islamic/Bosnian, and in the end, consistently played a role in changing the meaning of the entire Oriental expression.

The lack of accounts that would deal more exhaustively with the issue of Orientalism,[1] defined the basic purpose of this research—to contribute to the clarification of the Orientalism in Bosnia and Herzegovina, with the aim to destabilize the base that serves to manipulate it in the post-conflict present.

2 The Potential Significance of the Work

Specifically observed, the relevance of this paper is reflected in shifting the Orientalist architecture of Bosnia and Herzegovina from a defined discourse of national identity of Bosnian Muslims, which is a potential for softening divisions created in the area of architectural heritage.

The findings and results of this paper are a contribution to postcolonial studies as a view of cultural activity within the framework of one borderline colony. The context of colonization was atypical—in terms of time (awakening of national identities in the late nineteenth century), and culturally and geographically (European country, with a strong Christian element). This produced at least two different modes of general Habsburg Orientalist discourse—one speaking about shared experiences and spaces, and the other about distancing. However, such circumstances did not impact the centre's visual instruments, which speak of the impossibility of changing the inherent Cartesian Western representation of the East.

3 The Theoretical and Methodological Approach(es) Pursued

This subject has been discussed in two parts important in the context of the stated problem. Both of them concern the role of Bosnian Muslims as the object in the colonial dialogue with the native, by the medium of Orientalism; both of them are located in the origin, in the time 1878–1918. Is Orientalist architecture built for Muslims and as such accepted by them as their own expression in urban space? Which motives in the function of the colonial practice were embodied in Orientalism, as a matter of the broader meaning of this style?

In the first part, the methodological approach is based on the theoretical conception of postcolonial studies. It analyses images from literary periodicals that directly and indirectly communicate the possibilities of integration of the Orientalist architectural production into the ranks of the Bosnian Muslim forum. The cultural narrative of the centre has taken a significant place in recent studies on the interweaving of power, culture and literature, and the construction of national narratives during the Austro-Hungarian colonial rule in Bosnia and Herzegovina.[2] Such studies have determined that Orientalism was a certain gesture towards Muslims (Hartmuth, 2018:9). How such a gesture was received and understood by Muslims is much more difficult to assess.

Very rare accounts of impressions of spatial changes and even rarer of those describing Orientalism examples conditioned us to conceptualize the analysis top-down. First, consulting sources for depicting the atmosphere in which the contact of power and the periphery materializes (Naši bijedni odnošaji, 1898; O stanju današnje narodne, 1886), and then for the analysis of impressions of a more explicit encounter with the Austro-Hungarian intruder (Neki stranci prema Bošnjacima, 1881; Samardžić, 1909; Sarajlija, 1886; Nove gradnje u Sarajevu, 1891; Sebilj na Baščaršiji, 1891; Kruševac, 1960:43; Alić, 2010:69–70). The images of the Austro-Hungarian centre move in a transnational space, while the importance of the political-national orientation of individual periodicals is not seen as irrelevant. This kind of analysis point to gaps in the state of consciousness through which changes in social reality and the cultural spatial framework, as a positive trend, could have been integrated into the identities of traditional communities.

[1] Hartmuth contextualises Orientalist architecture in relation to the hegemonic narrative of the centre (2010, 2011, 2015, 2018).

[2] Ulbandus Vol. 7, (2003); Rexhepi (2018); Donia (2007); Kazaz (2005); Ruthner and Sheer (2019); Ruthner (2008, 2015, 2018, 2021); Vervaet (2009, 2010, 2013); Hartmuth (2010, 2011, 2015, 2018).

In the second part—methodologically, the broader differentiated idea of the Orient (Orient *at home* and *distant* Orient) observed by Heiss and Feichtinger (2013), and the functions of the Ruthner's colonial paradigm in the domain of identity politics (2018)[3], were tested in relation to the typology of Orientalist objects. This analysis should provide an insight into the general meaning of Orientalist style, and the regulatory role of Muslims in its creation.

4 Conclusion and Findings

The presented analysis of the local narrative in the first part of the research indicates that the modernization of space could have been perceived as a positive historical trend, and not an imposed political and cultural narrative. Therefore it has been more easily acceptable within the traditional community of Muslims, but also within other nationalities. The notion of Orientalism as the own expression of Bosnian Muslims could have been realized on the basis of the broader rhetoric of the inevitability of changes and pragmatism on the one hand, and the idiom of self-colonization on the other, and not specific visual associativity with the Islamic-Ottoman-Oriental. Bosnian Muslims did not have a homogeneous attitude towards changes in space. Neither resistance, nor the acceptance of the new, were uniform or consistent, and the presented images point to fluctuations between nostalgia, pragmatism and self-criticism. Desire to emerge from lethargy is the broadest uniform pan-national Bosnian narrative.

These facts clearly do not support the conclusion that any form of presentation of Austro-Hungarian Monarchy could have been accepted on a large scale by Bosnian Muslims.

In the second part of the paper, as a general framework of analysis, we present the broader theory of the divided Oriental discourse (Heiss & Feichtinger, 2013), which was reflected in the adaptation of the colonial paradigm (Ruthner, 2018). The typology of objects was a test marker that indicated the general meanings of Orientalism and the regulatory role of Muslims in practices of visual domination. We concluded that part of Orientalist buildings (cultural, public and educational/religious buildings whose users were Bosnian Muslims, and private residential buildings of rich Muslims—who should politically ensure the colonizing role of Habsburgs), as a gesture towards Bosniaks, represented an instrument of the colonial paradigm that supported the politics of a unified Bosnian/Bosniak identity. They simultaneously fulfilled the second part of colonial identity politics—clarifying the Other. In this united colonial act of civilizing what was perceived as "good Oriental Slavs" we can detect the paradox of merging divided discourses in the visual domain.

Further on, we found that the second group of Orientalist buildings (railway stations, hotels, exhibition pavilions at international and world exhibitions, as messengers of national identity and objects of the first encounter with the colony), was used in the classic manner of "making a claim to scientific authority and accuracy while nourishing fantasy and illusion" (Çelik, 1992b:2). In the context of colonial paradigm, they act as an instrument of the "Othering of Other" part of identity politics, and in a broader sense of the "two Orients" as instruments of "imperial division", demarcation and "exclusion of the Turks".

The differentiation of "two Orients" does not arise in the visual perception of Westerners about the Orient. This phantasm, which is not an immediate element of the colonial paradigm, but an implanted representation that the colonizer inherently carries and incorporates into the modelling of the Other, provided the standard solutions here (Fig. 1).

[3] One of the factors of colonial paradigm was: Identity politics which acts in turn to a) create a unifying Bosnian identity (Bosnianhood) top-down in order to combat the particularism movements of the three major population groups, the Muslims, Orthodox and Catholics, and b) The othering of the Other (Ruthner, 2018:7–9).

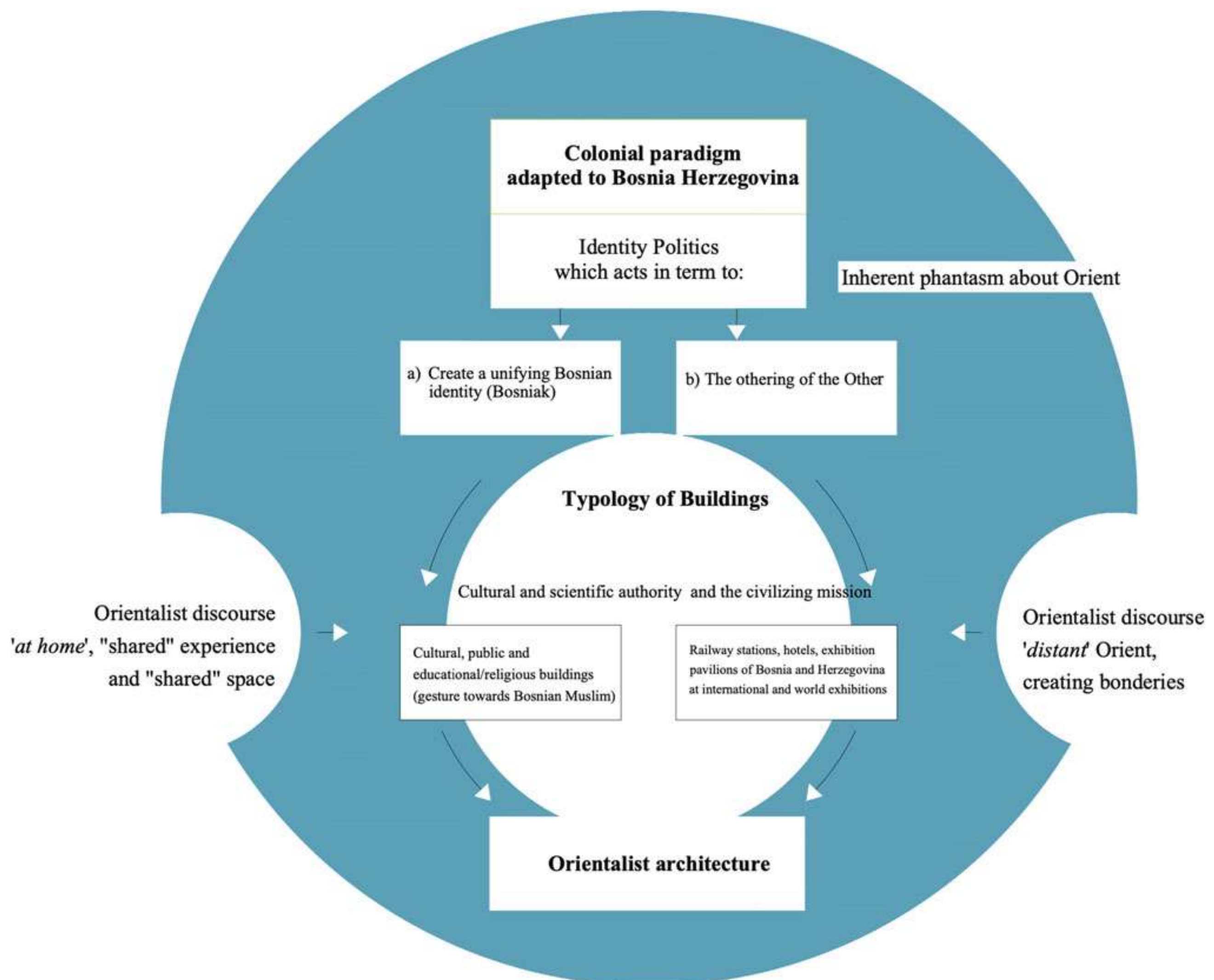

Fig. 1 Interwining of colonial, oriental discourses and the typology of Orientalist buildings

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Socio-Spatial Segregation as a Consequence of Commercial Gentrification in the Centrality of Cumbayá, Quito—Ecuador

Mauricio Javier Unda Padilla, María Daniela Zumárraga Salgado, Angel Celio Torres Riascos, Nathan Joel Morillo Aguilar, and Kelly Del Cisne Proaño Ruiz

Abstract

The process of urban expansion of Quito has caused the formation of new peripheral centralities, the same ones that offer all the services that the traditional center grants, thanks to public and private investment. In this sense, citizens from wealthy social strata are attracted to reside in these new sectors where consumption, exclusivity and privatization of space become the new way of life that conditions the social dynamics of the territory. This article seeks to identify the types of urban segregation that have occurred from the phenomenon of commercial gentrification evidenced on the edges of the Central Park of Cumbayá between the years 2000 and 2022. For this, a mixed research methodology is used where interviews, photographic archives and surveys allow generating a socio-spatial analysis that evidences this phenomenon. As a result, it was found that commercial gentrification not only has displaced old residents of the sector but also created stigmatization and segregation. Finally, is evidenced that few traditional citizens have resistance to abandon their place of origin and have raised their voices against this urban phenomenon.

Keywords

Socio-spatial segregation • Commercial gentrification • Social resistance • New centralities • Cumbayá

1 Introduction

The problem of the present investigation is based on the urban phenomenon of commercial gentrification that is visualized around the Central Park of Cumbayá, understanding it as a process of "boutiquization", where the appearance of new elitist commercial premises ("boutiques") not only mitigates the presence of old business premises in the sector but also generates a compulsory displacement of certain original families or groups from lower social strata who previously resided in certain areas. This in order to respond to the logics and needs of the new neighbors from high social strata who were attracted by the offer of certain services and amenities of these localities. With which, the aforementioned residents are forced to leave the areas not only because of the increase in their lives in these sectors but also because of the progressive change in their social, cultural and economic habits. The original inhabitants that remain in the sector are victims of a socio-spatial segregation that increases over time, however, they show resistance to a possible displacement.

2 Theoretical Approaches

The concept of gentrification is applied when the middle and lower class sectors are occupied and mutated by citizens of upper social classes, or as Hernández (2014) and Mérida (2021) affirm, it is the physical and symbolic reappropriation by the capital of certain areas of the city that experience the arrival of neighbors with higher incomes, implying the transformation in their commercial structure, in their physiognomy and image.

M. J. U. Padilla (✉) · N. J. M. Aguilar · K. Del Cisne Proaño Ruiz
International University of Ecuador, Quito, Ecuador
e-mail: maundapa@uide.edu.ec

N. J. M. Aguilar
e-mail: namorilloag@uide.edu.ec

K. Del Cisne Proaño Ruiz
e-mail: keproanoru@uide.edu.ec

M. D. Z. Salgado
Technological University Indoamérica, Ambato, Ecuador
e-mail: danielazumarraga@uti.edu.ec

A. C. T. Riascos
Technical Secetary Whole Life Plan, Quito, Ecuador

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Regarding the phenomenon of gentrification in Latin America, it has suffered a time lag. López-Morales (2015) asserts that the first research on this process was carried out in Mexico in the 1990s, almost 25 years later than in anglo-saxon cities and in which many English and North American theories were used, managing a prevailing academic language from the global north, the same ones that did not respond to the realities of the city studied (Hernández, 2022; Janoschka, 2016; Janoschka & Hidalgo, 2014). Numerous criticisms were made regarding this study, since the researchers tried to "culturize" the terms so that they can be coupled to existing problems. From this critique, it was evidenced that the conceptualization of the term gentrification in Latin America has transformed and evolved over the years, the same that is no longer limited by the anglo-saxon checklist. In this sense, the phenomenon of gentrification in Latin American cities can be developed in a particular way, the same way that is formed with the direct participation of real estate agents to capture the capitalization of the land through urban crises, these can be: (1) The expulsion of the lower class to the periphery through social housing programs (Da Cunha et al., 2021) (2) The real estate boom generated by a pro-business urbanism based on a subsidiary process of access to the property (Prada-Trigo et al., 2022); and (3) New pockets of poverty, where the inhabitants are at the mercy of small and medium-sized rentiers (Janoshcka & Hidalgo 2014; Janoschka, 2016). Transforming a compact territory into a defragmented, diffuse and segregated organism (Vives-Miró & Rullan, 2017).

For Sabatini et al. (2017) and Sabatini et al. (2020), the implantation of large real estate projects and elitist commercial premises in the territory as part of the gentrification process, becomes one of the causes to show the socio-spatial segregation in the short and long term, since a series of elements appear such as physical barriers (walls) and new socio-economic practices (consumption) that cause the popular class to move towards peripheral sectors with the aim of regrouping in low-income housing to preserve their way of life (Rodríguez, 2021). These facilities become artifacts that massify this phenomenon on a large scale, which shows that the city is conceived as a commodity of homogeneous sectors, some highly served and others in a situation of abandonment, which is why socio-spatial segregation is becoming more and more visible throughout the territory (Águila & Prada-Trigo, 2020; Altamirano, 2021).

Fig. 1 Study area of Cumbayá

3 Methodology

This research uses a mixed qualitative and quantitative methodology to identify the spatial segregation indices in the study area detailed below in Fig. 1.

As shown in Fig. 2, in the quantitative methodology, geospatial tools such as geolocation were used for the georeferencing of 275 commercial premises and statistical data processing. In the qualitative methodology, short surveys and interviews were used to identify the study variables, obtained in the collection of information in the territory and historical data, generating a retrospective analysis of the current state of the study area through the use of geographic information systems, a process of location and spatial association (Buzai, 2022; Garrocho, 2003).

Additionally, for the cartographic mapping of the study area, they were represented graphically according to the table below (Table 1), which will allow the construction of the socio-spatial segregation index.

4 Results

Commercial gentrification has displaced old residents of Cumbayá and therefore has dismantled social organizations and collective encounters, causing fleeting encounters oriented towards consumption. The change in land use from residential to commercial, as seen in Fig. 3, has imposed imaginary limits that exclude residents with low purchasing power, creating stigmatization and transforming the way of living in urban space. The streets have become tertiary commercial hubs that function as physical barriers between the elite class and what remains of the old inhabitants. It can also be seen that there is a low percentage of traditional residents in the sector who, despite the rising cost of living and the socio-spatial segregation to which they have been subjected, are reluctant to leave the site, the same ones who have organized to carry out permanent protests against this urban phenomenon (see Fig. 4).

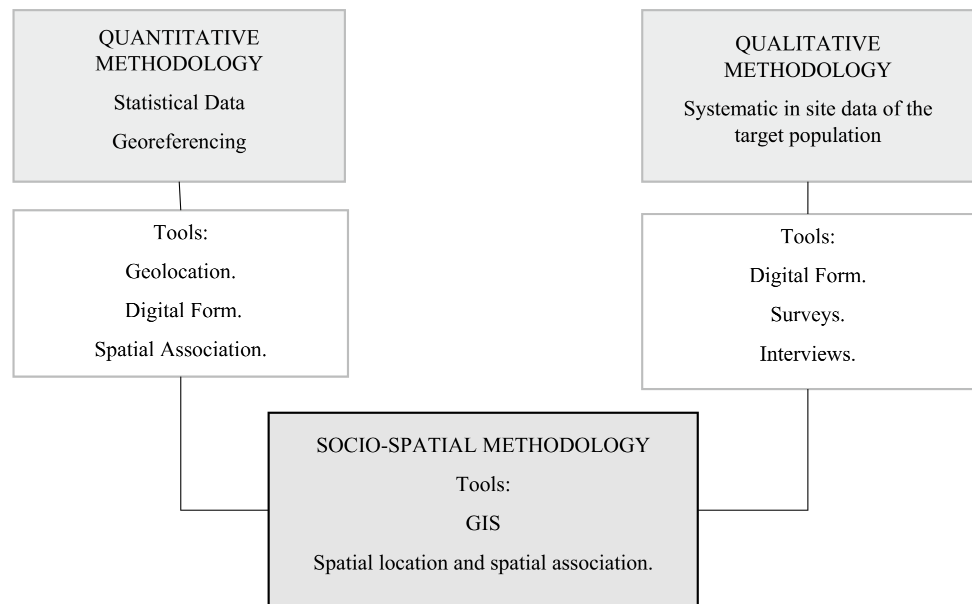

Fig. 2 Quantitative, qualitative and socio-spatial methodology

Table 1 Research variables socio-spatial segregation index

Variable	Dimension	Indicator	Index
Commercial gentrification	Boutiques process	Percentage of commercial land use	Socio-spatial segregation
	Regeneration and real state construction	Percentage of residential land use	
Population displacement	Residential mobility	Stay percentage	

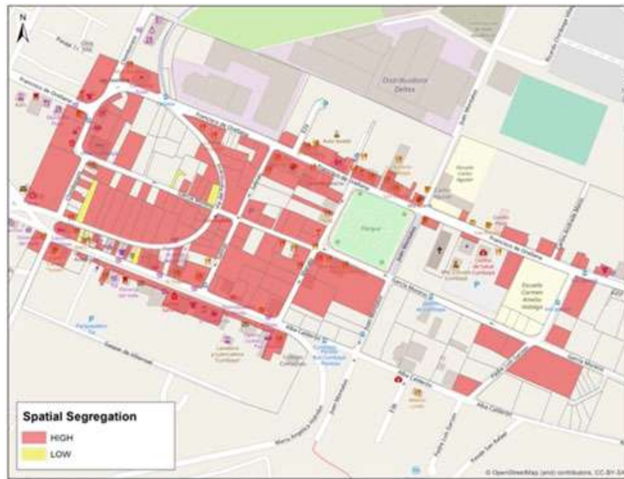

Fig. 3 Spatial segregation

Fig. 4 Protest in Cumbayá

On the other hand, there is evidence of the appearance of gated communities that, although they spatially mitigate gentrification, becomes potential sources of socio-spatial segregation due to their large walls, as can see in Figs. 5 and 6. Without a doubt, Cumbayá has been endowed with goods and services that improve the quality of life of new inhabitants, however, the increase in the value of the land generates a higher cost of living, which causes an increase in poverty for residents with low purchasing power. Reason for which the vast majority made the decision to move to peripheral sectors where there is social interest in housing or the cost of land is lower.

Fig. 5 Gated communities in Cumbayá

Fig. 6 Physical barriers

5 Conclusions

The phenomenon of socio-spatial segregation in the Central Park of Cumbayá continues to grow proportionally to the increase of commercial gentrification. Since the appearance of boutiques, in addition to being consumer devices, they change the urban image, becoming a global status brand, which attracts people with high purchasing power and large real estate companies, to compact areas where there is a balance between consumption and ideal residence, without taking into account the identity of the place and the need for the collective encounter. In this sense, the great walls and the increase in cost of living become elements normalized for modern citizens. The state authorities become the key actors for strengthening this gap, since they offer facilities over land uses, where the market is the entity that organizes the territory. Finally, it is necessary to look for participatory planning and design mechanisms where

urbanization offers a flexible function that generates sustainable communities in harmony with nature and mitigates urban segregation.

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(Re)definitions

Venting Practices: Navigating Interpersonal Dynamics of Socio-Technical Spatial Design Work in Neo-Apartheid Cities

Jhono Bennett, Olwethu Jack, and Jacqueline Cuyler

Abstract

This chapter will focus on the built environment dynamics of spatial design practitioners and the related discipline's involvement in addressing spatial inequality. It draws from a series of recorded conversations between three South African socio-technical spatial design practitioners during the 2020 Covid19 Lockdown. These conversations were titled 'Gripe Sessions' and were held every 2 weeks between three socio-technical practitioners as a means of support, reflection, and knowledge sharing through a peer-led 'venting' model. The co-author's intent lies in making tangible a series of interpersonal dynamics that are present within working from the grass-roots neighbourhood scale of socially engaged built environment work in the contemporary neo-apartheid city condition. The chapter draws from Feminist scholarly principles on concepts of positionality and offers an additional 'partial perspective' to this topic, in doing so it does not offer to empirical findings, rather it uses qualitive social studies technique to introduce and ground the concerns identified by the co-authors to the larger discourse around city-making practice towards spatial justice in South Africa's built environment.

Keywords

Socio-technical design • Grass-roots • Neighbourhood design • Positionality • Critical practice

J. Bennett (✉)
University College London, London, UK
e-mail: jhono.bennett@ucl.ac.uk

O. Jack
Founder of Ubuntu Growing Minds, Cape Town, South Africa

J. Cuyler
Co-Founder of 1to1–Agency of Engagement, Johannesburg, South Africa

1 Introduction

South Africa's built urban form continues to re-enforce socio-spatial patterns of division and segregation decades after our 1994 political reform milestone (Myambo et al., 2018). A divided city remains divided not only by the physical manifestation of the built form but it is further enhanced by the socio-spatial practices of human scale city-making that through the smallest interpersonal interactions between individuals is linked to the highest levels of policy making and discal allocation, an inter-scalar link that according to Southern Urbanist scholars (Bhan, 2019; Pieterse, 2014; Simone, 2004) are 'deeply' entwined in the infrastructural city roots of local and global understandings of self and other. Such readings of place and people are not incidental to the built environment, but according to sociologist Anthony Giddens (2012) are entangled through the actions of individuals at various scales of both the city and region as a whole —a point similarly made by cities scholar Edgar Pieterse (2013) when describing the emergent nature of African cities.

With a specific focus on the disciplinary actors of spatial change around design, and drawing from Feminist scholarship there is an importance of acknowledging and engaging *with* one's own positionality (McDowell, 1992; Norber & Harding, 2005) and *through* one's technical mandate when working in any sector of South Africa's built environment to practice—but in particular in those areas of work that engage within the largest contrasts of social nequality in today's context of climate emergency, social inequality and rising nationalist sentiments typically considered the 'developmental sector'.[1] This recognition of the interpersonal dimesnions of working in this sector should not be considered a 'nice-to-have' within a practice framing, but

[1] A broad category of multi-disciplinary work that is in support of South Africa's National Development Goals.

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rather a critical departure point of recognition to incorporate within technical consideration, project design, and implementation. These are not novel, nor revolutionary ideas, having been covered in detail in the work of Nabeel Hamdi (2010, 2013) and several South African spatial practitioners (Brown-Luthango, 2013; Oldfield, 2008; Winkler, 2018) over many years.

2 Theoretical and Methodological Approach (es) Pursued

Drawing from the auto-ethnographical techniques of Dana Cuff's (1991) practice-orientated (Doucet & Janssens, 2011) studies of architectural practice combined with Donald Schon's cross-disciplinary concepts of 'reflection-on-action' in regard to spatial practice, this study has collected a set of initial findings from a series of auto-interviews[2] conducted between the co-authors during the 2020 South African lockdown. It is important to note that this study does not use this qualitative data to provide any overarching, 'god-trick' towards empirical claims to this knowledge sector, instead it works with an understanding of 'collective objectivity' that is better understood as multiple partial perspectives (Haraway, 1988), that provide a more useful situated understanding of knowledge according to the co-authors. These were conducted over digital calls, recorded, transcribed, and the findings analysed between the authors in preparation for this publication. The working title of the exercise was called 'Gripe Sessions'[3] and was conceived as a means of providing both social and technical support to each other in a very difficult time. This took place over 7 events and was followed up by digital conversations to co-develop the *Socio-Technical Question Framework* set through what was termed a 'peer-led venting model'. This study shares these initial findings as means of introducing these topics to the field, but will be followed up in more detail in further research exercises conducted by the authors in their doctoral studies.

3 Major Issue(s) Addressed

There are many important conversations underway across South Africa regarding the myriad of issues around NGO's, development practice and social justice work since 1994's political shift. These topics were brought to a particular head during the 2020 Lockdowns when movement and access to already meagre resources were made more difficult (Bhan et al., 2020). Within these discussions, the growing focus on the individuals, their stories, and their motivations between these city-making forces is gaining increasing importance as a crucial factor in *how* socially focused practitioners conduct their work and *why*. The Gripe Sessions engaged head on with these questions in the spatial practice field of socio-technical support that the co-author's collective work has engaged with over the last 10–15 years. These included very personal and often frank questions that the co-authors were dealing with during the discussions.

> *"Why are we doing this? Why aren't we doing 'normal work'?"*Extract from Analysis Notes on Gripe Session 2 (Authors, 2020).

4 Potential Significance of the Work

This discourse covers concepts of intersectional privilege, systemic injustice, structural poverty and identity dynamics in South Africa's post-Apartheid rebuilding efforts. Jordan Flaherty's (2016) critique on developmental-industrial complex of the USA's post-Katrina disaster in *No more heroes–Grass-Roots Challenge to Saviour Mentality* begins with a carefully chosen statement made by Vietnamese mothers of the 1970's war with America requesting for the mothers of returning American soldiers to not only think of the work in addressing their country's role in the conflict, but to also work *with* their own children in the post-war reconciliation efforts. This anecdote is intended to convey the importance of interpersonal shared responsibility across complicated socio-political conflict and to bring to attention the importance of working through difficult moments of interpersonal dynamics of positionally critical work in regard to the socio-technical field of practice within the 'development sector'.

5 Problem Statement

Socio-technical practice is often seen through a 'professionalised' lens that ignores the interpersonal, intercultural, and intersectional dimensions from both the training curriculum as well as technical requirements regarding spatial practice in South Africa. The idea that the 'ends justify the result' (Hamdi, 2013) has long been proven to undo much of the good in such work. This is made harder to navigate in contexts such as post-Apartheid South Africa, where the nature of such work makes it extremely difficult to

[2] Auto-Ethnography (Chang, 2008) employs the tacit (Schrijver, 2021) forms of architectural knowledge through carefully constructed, rigorously applied and ethically formulated means of knowledge production.

[3] Gripe implies a space to 'complain' or share the difficulties of work between colleagues.

Table 1 Analysis Summaries from Gripe Sessions 1–6 (Authors, 2022)

Framings	Nature of questions	Statements/Quotes
Framing	Questions of 'approach':	• "…where do you even start when you arrive at a shack fire…" • "…these ideas of 'community', 'leadership' and 'NGO are so layered…" • "…is architecture even a relevant concept in this work ?…"
	Questions of 'agency':	• "…is it really ok that its me doing this work…" • "…if not me, then someone else…" • "…who gives us our mandate ?…"
Positioning	Questions of 'location':	• "…staying in our lane…" • "…choosing where we act…" • "…choosing who we act with…"
	Questions of 'change':	• "…deciding whether we will be around to see our 'change'…" • "…inter-generational systems of 'change'…" • "…what we choose to do: to make what 'change…"
Valuing	Questions of 'value':	• "…whose values are we working with…" • "…conflicting values between us and our partners…" • "…divergence of values between us and our families…"
	Questions of 'perception':	"…what the work looks like, versus what it entails…" • "…how issues appear, versus where they come from…" • "…virtue signaling, versus 'doing the hard work'…"
Acting	Questions of 'process':	• "…participation/inclusion doesn't always result in a 'better product'…" • "…sometimes people don't want 'process' they want 'product'…" • "…hard to value process across actors/sectors…"
	Questions of 'voice':	• "…the importance of Story Telling…" • "… the challenge of de-centering…" • "…the necessity of multiple voices at different scales of processes…"

interpersonally navigate such grey areas (Yiftachel, 2009) of value judgement and practice focus.

6 Initial Findings

Table 1 is a co-developed summary of the terms, concepts and important parts of the discussions. These have been organized under Framings (concepts that are informed by an action), Nature of the Questions (the type of questions the authors asked each other), and selected Statements/Quotes (that emerged during the various sessions).

7 Conclusions

In much the same way the Cuff's (1991) conclusion to her extensive survey of architectural practice did not yield any concrete suggestions—nor should it have—this study has yielded qualitive 'data sets' that give access to the interpersonal complexity of such socio-technical work in South Africa. This work has value towards lifting much of the stigma, romanticization, and shallow perceptions of such work and sees value in making these experiences available to the growing sector of spatial practitioners who are and will be working in South African cities. Schon's suggestion to see spatial design processes not as a 'solutionary' process, but rather as a way to 'have a conversation with a context' (1983, p. 45) offers a means of understanding how this study can support such inquiry from this field, with the questions set being offered here as a tool for those working in these contexts, as can be seen in Fig. 1.

8 Implications

Urban scholars (Bradlow, 2021; Gotz et al., 2014) describes how such interpersonal and psycho-spatial factors difficulties manifest most clearly in the metropolitans of South Africa. These take place through spatial separations that host some of the most unequal living conditions on the planet (SACN, 2016); in spaces that are historically and spatially scarred by the systemic segregation of the populace that have been in place since the country's geo-political inception in 1652 and remains fundamentally unchallenged in the way the country operates (Biko, 2013). While it may seem a given to acknowledge such systemic inequality, many Southern Urbanist (Parnell et al., 2014; Sihlongonyane, 2015), South

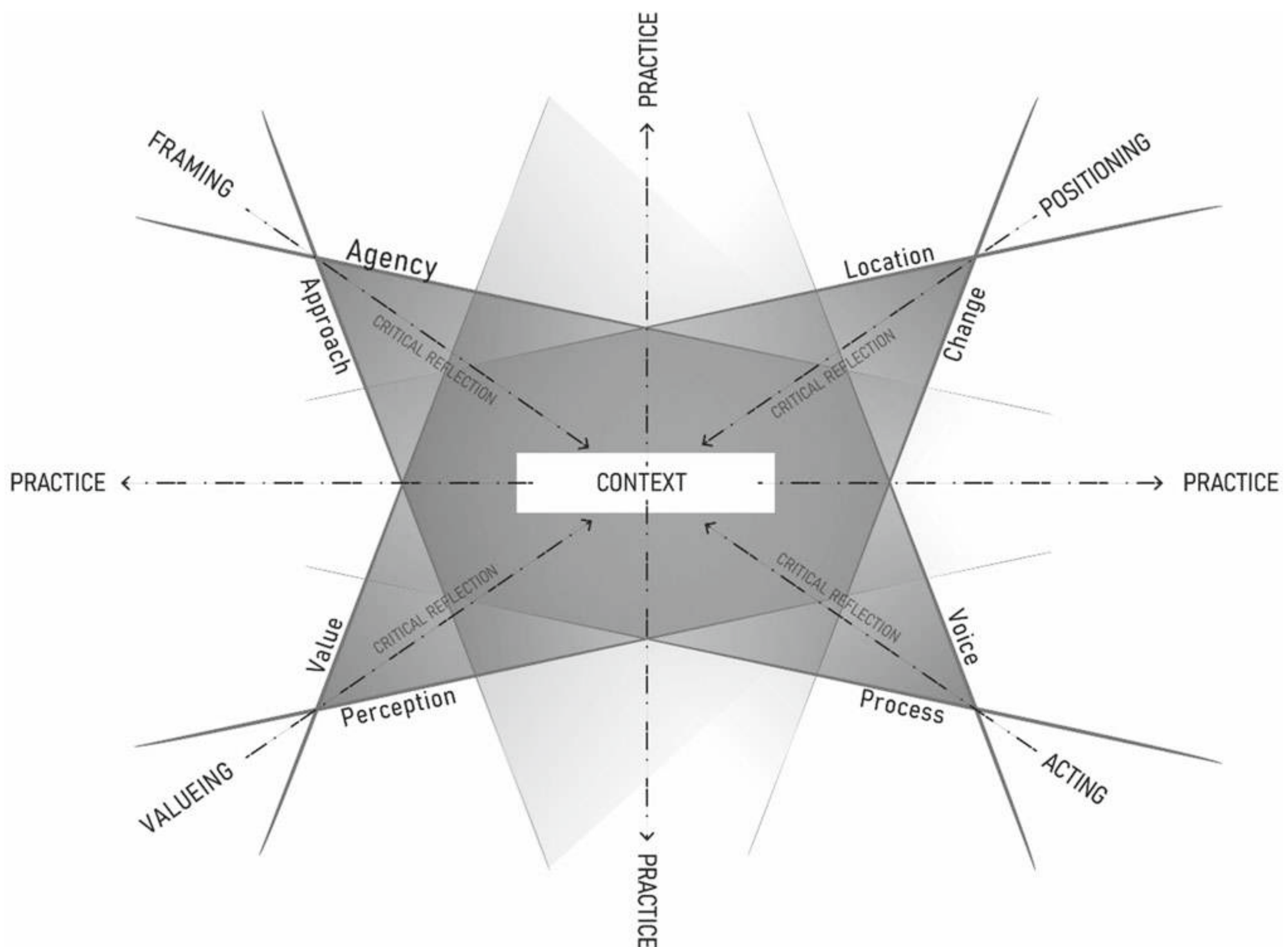

Fig. 1 Questioning practice diagram (Author, 2022)

African post-colonial and post-Apartheid (Matsipa, 2014; Mbembe, 2017) scholars remind us that the nature and manner in which spatial systems are perceived and acted upon are crucial to tacitly acknowledge and should be constantly challenged.

These interpersonal, intercultural and positional dynamics actively feed into the collective psycho-cultural application (Malaza, 2014) of making and using cities—an often-understated force in city-making (Yiftachel, 2009)—a set of conditions framed by Watson (2006) as a question of 'deep difference'. Such conditions are made more difficult to unpack due to the palimpsest of internalised negative perceptions, stigmas and unequal development of over 400 years of colonial and Apartheid 'development and re-development' (Malaza, 2014)—a reality that makes any inclusion of reflective, empathetic or considered approaches difficult to justify or practice ethically,

In order to work through such complex challenges, these authors believe that interpersonal details, nuance and diversity of approaches within this work are crucial to recognise when considering training and spatial practice valuation in South Africa's built environment. Such interpersonal consideration or care within built environment work should not be 'nice-to-haves' but are critical factors to engage with towards technical success and the emotional and organisational sustainability of spatial practitioners in post-Apartheid South African cities. This initial study, guided by the Gripe Sessions, is offered here—along with the questions framed—as a means of conducting reflective practice in the South African neo-Apartheid landscape and intentionally do not attempt to provide any 'best-practice' or 'solutionary' suggestions to the reader.

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The Zinc Forest: Making Home in the (Post) Apartheid City

Barry S. Lewis

Abstract

Apartheid's legacy is kept alive through spatial, physical, political, social, economic, racial and religious divisions. This is evident in the city of Cape Town that was designed to remind certain humans that they don't belong, and it continues to do what it was designed to do. How do the designers of the city situate ourselves in the dynamic ruin of home making in the (post)apartheid city? Within it, homes are being fought for, rebuilt, recreated and formed at every moment in the Zinc Forest (informal communities). The shack never stops moving, because the spirit of the *ulangisa nganyenganye* (translated: bit by bit) means that it is always changing. The carpet Siya James used at the outset to make a roof became a flat zinc sheet through its encounter with rain then gets slanted at an angle to shed the water. This is the relational process of home making, a worlding process (Haraway, When Species Meet, University of Minnesota Press, Haraway, When Species Meet, University of Minnesota Press, 2008). If we understand the nature of the Zinc Forest as a worlding process taking root, growing and constantly forming and becoming, there is an opportunity for us to diffract this phenomenon with more conventional ways of conceiving communities. This diffractive methodology can help us to re-conceptualise and re-define the nature of place making and the forming of home in the face of histories and memories that refuse to go away.

Keywords

Zinc Forest • Home • City • Architecture • Worlding • Diffraction

B. S. Lewis (✉)
Ubuhle Bakha Ubuhle (UBU), Cape Town, South Africa
e-mail: barry@ubu.bz

1 Introduction

The city is not a tree, it's a forest. And yet in the (post) apartheid version of this forest it is still subject to the power of the (isolating) historical policies and doctrines of division. Is home even possible in such a landscape? How can designers of the city (e.g architects, engineers and planners) work in more expansive ways to make home in the city when the tendrils of apartheid policies are still be/coming? Prof Osman has stated, *'Nothing presented in South Africa has ever been as powerful as what the Aparthied planners suggested. We need to re-imagine African cities as livable and lovable cities'* (Osman, 2019). This study seeks to challenge the notion of separateness in the conceiving and making of home in the (post)apartheid city through the introduction of worlding (Haraway, 2008). Worlding understands relations of human and more-than-human, and it pulls the designers of the city into a conversation with the phenomenon that are normatively excluded from the design process, like the Zinc Forest (informal community). *'They longed for another place called home where they could recapture their past and dream other futures'* (Hamdi, 2004)

2 Problem Statements

The remnants of Apartheid manifest everyday through spatial, physical, political, social, economic, racial and religious divisions in the (post)apartheid city. It's a city that continues to build itself in the manner in which it was originally conceived, along definitive lines of separation. And within it the designers of the city (which includes architects, planners and engineers) are required to function within this segregated house making realm, especially when it comes to the developments of new communities in/through/beyond the UISP (Upgrade of Informal Settlements Program). The fruit of this part of the city looks like Silvertown, Khayelitsha

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Fig. 1 Silvertown, Khayelitsha

(Fig. 1), a community with houses on small plots, in rows separated by roads which double as play spaces for the children. Power and agency lie with the designers of the city who are 'employing' parameters (history, policy, or other) and who '*lays down lines that people and organizations must follow'* (Turner, 1976) to suit a singular/linear agenda that manifests a perpetuating of the apartheid city. This is a praxis that silently believes that we are separate from the multiple 'worlds' that exist in the city, even the more-than-human. Is the ephemeral notion of home making even possible in such a disembodied city?

3 Major Issues Addressed

I am an implicated designer interested in paying attention to my responsibility to make effective expressions of home in a city designed to make (certain) humans feel like they don't belong. As such I am interested in thinking differently about the methodologies used to build home and have chosen to explore the concept of worlding, as conceived by Haraway (2008). Worlding: Things that exist in the world are not just things, they are a phenomenon, they can be seen as multiple expressions of itself, something which generates, something that is rooted to history but also part of the making of new things. It's a be/coming state (Barad, 2007), not just emphasising epistemologies, but ontologies also that exist in the now (being) but is also becoming for a time to come. Worlding understands the relations of humans alongside more-than-humans, as if we are not disconnected from the world in which we live.

4 Significance of the Work

The Zinc Forest is a worlding. As Prof Vellam states, *'The proliferation of the zinc forest is the prophetic building of the city'* (Vellem, 2016). Homes are being fought for, rebuilt, recreated and formed at every moment in the informal community (Fig. 2). Without apology and without consent, humans are doing and making and building home in the city. It's a relational process of home making, a building with/together. But more than this, it's multiple sites of learning because there have been no shack-making manuals created. The Zinc Forest is a site of indeterminacy, perpetually troubling our linear and logical conventions of space, time and matter, and whose understanding '*involves a kind of sideways slippage along barely visible fault lines rather than the traditional scholarly labor of excavation' (*Wigley, 1997). It carries within it the histories of injustice and as such the 'start' of the Zinc Forest is not conveniently demarcated at the point when a human starts to build their shack.

Fig. 2 Zinc Forest

5 Theoretical and Methodological Approaches

The concept of worlding includes a Post Qualitative methodology of diffraction. Diffraction can be expressed when two pebbles are thrown into a pond and the waves from each submersion collide with each other to make a new pattern. It's a process that pays attention to new patterns that are created in and through relationships. Worlding understands relations of human and more-than-human (e.g. zinc, sand) and pulls designers of the city into a conversation with things that are normatively excluded from the design process. If we understand the notion of worlding through the methodology of diffraction, phenomena are being read through one another which means the agency gets distributed across time, history, architect, planner, indigenous knowledge, material, umqombothi, facilitator, engineer, the kraal, or even the song. It becomes a de-centering praxis, a protest, a momentary pause in the perpetual making of the apartheid city. The professional's office cannot be the epicentre of home making, in fact, it has been proved through instances like Silvertown that it's not.

6 Major Findings

When we diffract Silvertown through the Zinc Forest graphically we start to make decisions about what gets included, which lines have hard edges and which sections get blurred or multiplied (Fig. 3). Certain things get foregrounded (possibly for the first time) and other things gets excluded all together. This relational interaction between town planning conventions and the Zinc Forest was also manifest through a participatory planning process in the Sweet Home Farm community (Philippi, Cape Town) as part of the UISP project. Through a sequence of engagements, the community came up with a plan that centred the play space in the middle of a smaller 'village' like composition, with a 'defensible homes' edge on the outside. Their plan put care and safety at the forefront of the masterplan, creating an unintentional diffractive pattern with lines that unsettled the singular/linear normalities of town planning (Fig. 4). The participatory planning sessions became sites of research-creation (Manning, 2014), not predefined question and answer sessions but engagements *'...to be activated collaboratively on site, entering the relational fray as one creative factor among*

Fig. 3 Diffracting Zinc Forest/Silvertown

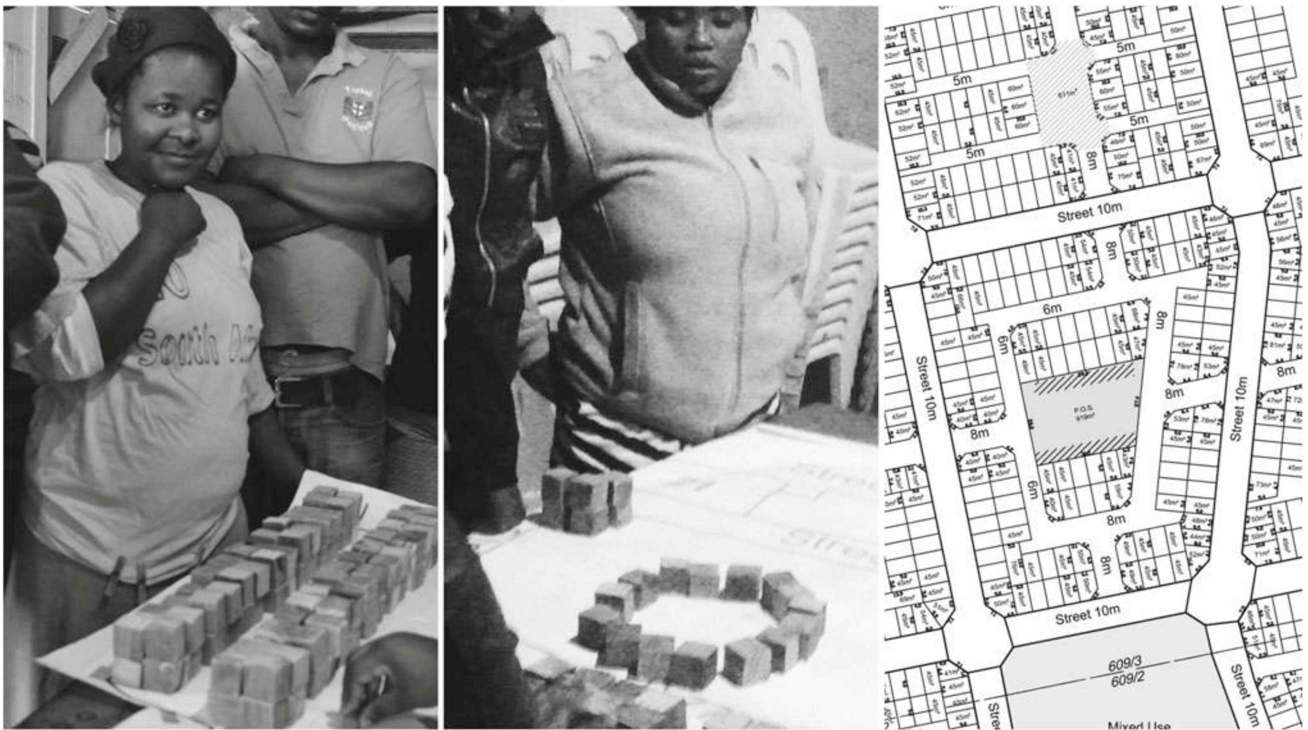

Fig. 4 Participatory planning as diffraction

Fig. 5 More than a building site

others. The term 'research-creation' was retained as a key term for an exploratory openness in this activity of producing new modes of thought and action' (2014, 90).

The plan was instantly rejected by the planner, for lack of appropriate density. When he actually counted the plots, it came to be 110 habitable rooms/hectare, perfectly appropriate for peri-urban locations. This plan is an example of a diffractive pattern.

7 Conclusions and Implications

Diffraction as a methodology can help us to re-conceptualise and re-define the nature of placemaking, and the forming of home in the face of histories that refuse to go away. Diffractive patterns can emanate from stories, images, processes and systems. In the city which reminds humans they don't belong, we need new ways of understanding how it is becoming, and how we are becoming in it. We cannot keep on doing the same things and expect different results, if we have any desire to build, as Prof Osman states, *'livable and lovable cities'*. The opportunity to build with the humans who have traditionally been forgotten, along with histories, architects, indigenous knowledge, zinc, planner, umqombothi, facilitator, and the kraal in and through the Zinc Forest has major implications for how we design and build home in the city. It also helps us re-configure our understanding of the building site. It's more than just a place where we build a piece of the city; it is a site of relations where we conceive and build together, a site of learning and also a site of healing (Fig. 5).

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Redefining Place in Urban Ecologies of Divided Cities: A Case Study of Durban, South Africa

Yashaen Luckan and Majahamahle Nene Mthethwa

Abstract

Global South communities continue to suffer the socio-economic consequences of entrenched spatial injustices that plague the advancement of marginalised communities. Segregation by design and general dominance over indigenous knowledge systems fuels disparity resulting in social discohesion. Consequent socio-economic and socio-spatial contestation, intolerance and the rise of xenophobia express as broken urban communities that have asymptomatically affected inequity along racial, ethnic and geographic fault lines that can be traced in the built environment, especially how space has been traditionally defined. The aim of the paper is to explore the exclusionary attributes of built form that promote various narratives of oppression, dominance and "otherness" to find possibilities for the transformation of divisive space into inclusive place. The methodology is based on a qualitative approach founded on the conceptual frameworks of decoloniality and Afrocentricity to critically analyse literature and a case study of Durban, South Africa. A comparative analysis of traditional settlement patterns and the modernist/apartheid city formed a deeper nuanced understanding of the inherent challenges and opportunities for redress and spatial transformation of the urban ecologies of divided cities postcolonial cities.

Keywords

Global South • Spatial injustice • Segregation • Decoloniality • Afrocentricity

Y. Luckan (✉) · M. N. Mthethwa
School of Built Environment and Development Studies, University of KwaZulu-Natal, KwaZulu-Natal, South Africa
e-mail: luckany@ukzn.ac.za

M. N. Mthethwa
e-mail: MthethwaM@ukzn.ac.za

1 Conceptualisation of Community in Relationship to Cosmological Ecosystems

The paper explores possibilities for inclusive place through a rethinking of the concept of community, to be able to socio-economically and spatially transform the ecologies of divided cities. A community, as a geographically-centred group of interdependent people, therefore could live their lives wholly in their context, driven by common purpose and goals that includes wealth building. David and Miller (in Onwuatuegwu, July 2020: 62) affirm the notion that wealth should be seen as a means of living a virtuous life, rather than for ostentatious, selfish and avaricious way of living. Through the values of *Ubuntu*, wealth accumulation is for the good of the collective which begins at family level as a community building block. In traditional African societies, therefore, land has been a communal commodity stiped in African philosophy of duality whose ontological world is partitioned into three rolled up into two—spiritual and physical, for communally shared benefits (Ogbonnaya, 2022: 118) (Fig. 1).

Coloniality and apartheid adversely impacted this triad system by promoting the marginalisation of African communities in the wealth accumulation process. The colonially forced detachment of Africans from ancestral lands gradually decentred individuals and communities, instilling different worldviews, away from *Ubuntu* towards individualism, leading to inequality, socio-political and cultural intolerance manifesting as violent protests and xenophobia even into the post-Apartheid era. Diametrically opposed Global South and the dominant North worldviews (Fig. 2) thereby directly translated into the division of urban ecologies, detached from traditional communities.

Vhumbunu (2021) opines that the basis for protest centred around how the state has been addressing poverty, unemployment, and inequality challenges. Spatial segregation driven by individuality fuels violent protests as

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Fig. 1 Ekwealor's Igbo [African] worldview (Adapted from Ogbonnaya, 2022: 118)

communities lacks a sense of ownership and economic security. Some disadvantaged communities have become breeding grounds for xenophobia and consumed as fodder by unscrupulous politicians especially for electoral gains. The July 2021 unrest in KwaZulu Natal and Gauteng revealed the ugly head of such reality that spatially expressed the entrenched divisive characteristics of the built environment.

2 Spatial Justice and Its Impact on Urban Communities: A Case Study of Durban, South Africa

At the core of the problem of divisions are the colonial devices that have suppressed social and anthropological rights to the city (Lefebvre, 1996) through spatial barriers that compromise the psychological and spiritual experience of people in the city. This condition affects both the ontological and epistemological interpretations of the inherent value of cities. Reference is therefore made to Soja (2009) who expounds critical spatial thinking incorporating the ontological spatiality of being, and importantly, the social production of spatiality and the socio-spatial dialectic.

A progressive proposition for postcolonial cities is however complex as it requires retrospective interventions on entrenched urban order and structure. The modernist emphasis on "efficiency" and control little considered people in place and time, resulting in the inclusion of some communities and the exclusion of others, physically, economically, socially, and spiritually.

South African cities, such as Durban, developed most significantly since the late nineteenth century as planned cities, primarily for the socio-economic benefit of colonisers. Deliberate segregation would be enforced further through the apartheid city model (Fig. 3) which illustrates definitive principles of modernist city planning, such as zonal segregation, however, with an added layer of socio-economic segregation. The Group Areas Act of 1950, catalysed the mass displacement of urban communities based on race classification, denying them the right to the city.

Prior to this period however, the British colonial government imposed various legislative restrictions that led to enforced displacement of black trade to the western marshlands, which ironically sparked an alternative form of

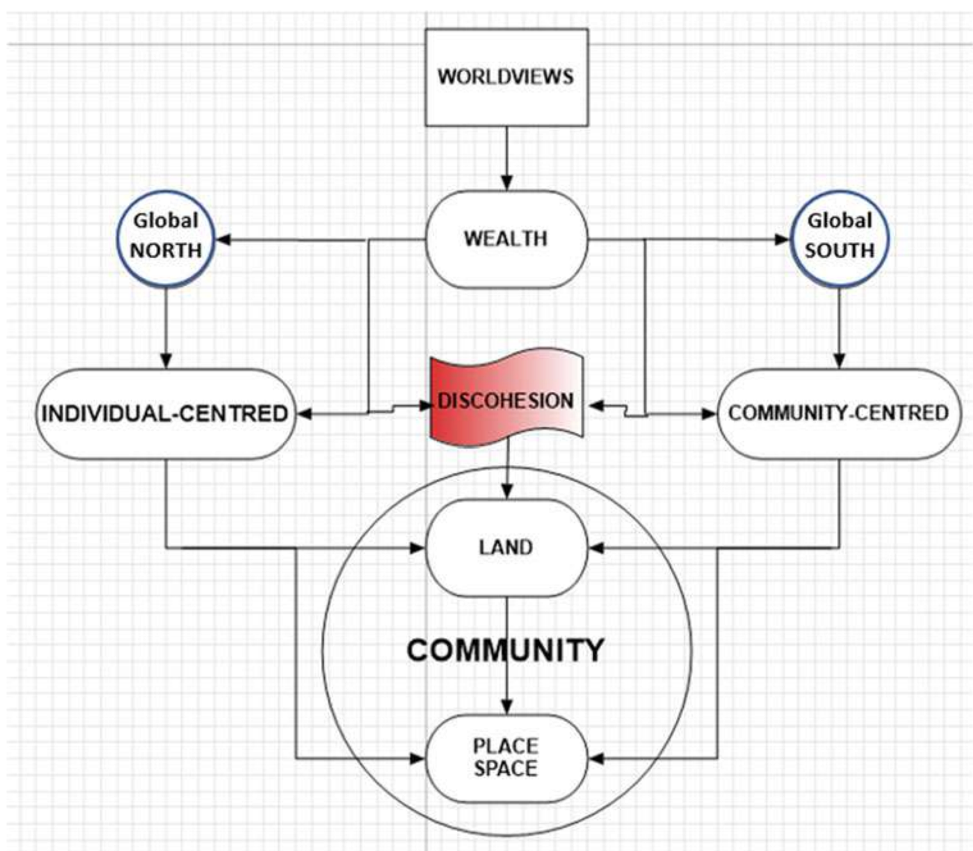

Fig. 2 Global South's and Global North's diametrically opposed worldviews on wealth and its impact on community, place/space. (Authors: 2022)

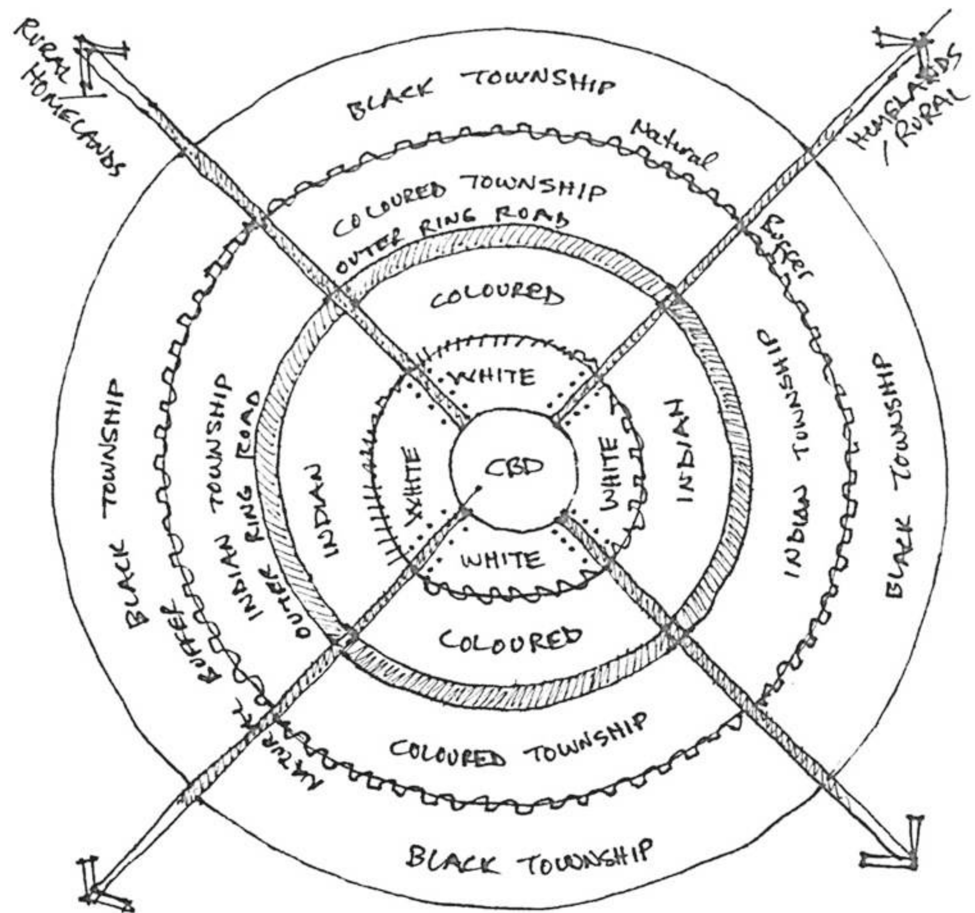

Fig. 3 Apartheid city model as an adaption of the Modernist city plan (Luckan, 2021 in Magidimisha-Chipungu & Chipungu)

development through the resilience of communities in need of economic survival. The evolution of alternative spatial narratives from socio-spatial displacement and spatial transformation through appropriation of various urban spaces during the post-apartheid era is most vividly expressed in the Warwick/Grey Street (Yusuf Dadoo Street) precinct.

The Warwick/Grey Street precinct reveals how lost spaces (Trancik, 1986), through functionalist design, could be revitalised by the social reproduction of space (Figs. 4, 5) at the scale of the ontological spatiality of being. The study produces a basis to seek possibilities for complex social cohesion through opportunities afforded by the built environment and built form. The key concepts that define the analysis/interpretation of this study area include the social appropriation of space, spatial recycling, socio-spatial activation, indeterminancy, spatial layering, incidental urbanism and conscious dwelling in place.

The Grey Street district, a direct result of displacement of communities from the former British town centre expresses an alternative character of place complexity through resilience, supported by culturally evolved built form. Luckan (2014, 2015) refers to such transformative socio-spatial dialectic consequent to displacement, whereby people would transform the character of urban spaces through dialogical engagement with architecture, as facilitator of urban vitality at the human scale that afforded various choices and possibilities. This place-person-time dynamic would transform the precinct into an alternative city of diverse socio-economic and cultural overlaps (Alexander, 1966) providing various clues for urban inclusivity.

Figure 4 illustrates how architecture could afford various possibilities for spatial appropriation, adaptive reuse and socio-economic spatial activation. The detailing of place through architecture expresses a cultural narrative of a uniquely Durban Indian Art Deco while it affords places of opportunity through a dialogical relationship between formal trade inside shops and informal trade on the colonnaded arcades.

To the west of the Grey Street district is the Warwick district that expresses a different narrative of spatial appropriation during the post-apartheid era. Figure 5 illustrates the revitalisation of lost spaces through socio-spatial activation by the appropriation of space for informal trade.

Interestingly, while the spaces under bridges would not have been permissive of informal trade or dwelling, the

Fig. 4 Spatial layering through arcaded facades in the Grey Street District (Author)

Fig. 5 Spatial appropriation and activation in the Warwick District (Author)

post-apartheid era realised a vibrant vitalisation of these spaces due to widened rights to the city. Appropriation and spatial recycling (Luckan, 2015) of left-over spaces beneath and beside motorways, and the well-considered architectural interventions through the installation of trade link bridges in the mid-1990s, transformed a socially hostile precinct into a vibrant place of various socio-economic and cultural coincidences.

The affordance of possibilities and choices, determined by the case study, expressed the complex overlaps referred to by Alexander (1966) that revealed various possibilities for social cohesion through the built environment. The critical dialogical interdependency between the social and the spatial, between people and architecture, thereby, defines the essence of inclusive cities. The proposition of the paper is to therefore identify and respond sensitively to complex urban systems defined by people, place and time; to define and "fix misfits", as expounded by Alexander (1964), rather than resorting to standardised methods and planned impositions.

3 Conclusion

The study acknowledges that it would be naïve to assume that built form can solve the problems of social discohesion. It is elucidated, however, that while the built environment cannot fully address the socio-psychological barriers that inhibit social cohesion, the spatial transformation of a socio-economically and culturally suppressive urban structural order could stimulate various opportunities for all urban communities and ultimately contribute to eradicating the fear of otherness, and the social ills associated thereto.

While the spatial transformation of urban spaces in the Warwick/Grey Street precinct afforded new opportunities through the synergistic relationships between the formal and informal economy—promoting sustainable urban economies—the intention for a sustainable urban ecology would require a deep interrogation of the social and cultural layers of place to be able to contest binary worldviews and promote social cohesion through spatial practice.

The research found that to be able to overcome divisiveness and realise spatial justice in postcolonial cities, retrospective propositions would be necessary to shift ontological and epistemological dispositions towards inclusivity. The establishment of progressive value systems in urban communities would necessitate a critical review of the structural order of cities to find clues for spatial transformation. The inclusion of humanistic traditional African values of respect and inclusion, such as *Ubuntu*, would be critical to frame inclusive spatial transformation towards progressive urban ecologies in post-apartheid cities.

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Places of Worship in the Urban Landscape: The Role of Participatory Processes for Their Reuse in a European Comparative Perspective

Davide Dimodugno

Abstract

Places of worship have always played a crucial role in defining the landscape and character of our cities and villages. Each building has its own story to tell and represents the effort of a whole community in the creation of a common identity. For this reason, as well as for their historical and artistic value, these goods are frequently protected by the legislation of the States as a part of their national cultural heritage. Nevertheless, the problem of their re-signification arises when their religious purpose ceases, as it is happening everywhere in Europe because of secularisation, demographic decline and migrations. Focusing on the Catholic Church's assets because of their significative presence in Western Europe, this paper aims to provide a vision on the future of these goods, underlining their value as "common goods" for local communities. In fact, the population recognises these assets as having both a use value and a cultural heritage value, which must be considered when identifying the new profane uses. These are goods that evoke a dual belonging, i.e. not only to the ecclesial community, but also to the wider civil community that has the right to be able to express its opinions on the reuse of buildings no longer used for worship. The comparative study of the legal framework and experiences from Belgium, France and Italy, in search of best practices and replicable management solutions, shows that, in spite of their different legislations, a new awareness is emerging with respect to this heritage, which should not be destined to neglect and abandonment but properly valorised. Through participatory processes, it seems possible to identify the needs emerging within communities, so that political and ecclesiastical decision-makers will be able to adopt solutions that can generate a positive impact in terms of social, cultural and economic development. In this way, these assets will be restored to the spatial and cultural centrality they have always had in the neighbourhoods of our cities and in rural villages.

Keywords

Adaptive reuse • Places of worship • Church • Common goods • Participation • Local communities

1 Introduction: Places of Worship in the European Context

According to authoritative studies, there are about 600,000 places of worship in Europe (Coomans & Grootswagers, 2019, 160), most of which are Catholic churches, chapels and oratories. These buildings are immediately recognisable and shape entire neighbourhoods, towns and villages. Moreover, they are often protected by national laws, as part of the cultural heritage of a country (Tsivolas, 2014).

Nowadays, due to secularisation, demographic decline and migrations, the overabundance of places of worship has taken on unprecedented dimensions, raising the issue of their adaptive reuse.

2 The Universal Framework Provided by Canon Law

Regarding Catholic churches, a common legal framework, namely canon law, applies worldwide. Can. 1222 of the 1983 code of canon law establishes the conditions to reduce a church to profane uses. The first paragraph considers the impossibility of a church to be restored or used any longer for worship, while the second one introduces the notion of grave causes, which are at the discretion of the diocesan

D. Dimodugno (✉)
Law Department, University of Turin, Turin, Italy
e-mail: davide.dimodugno@unito.it

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bishop, who has to issue an appropriate decree, after hearing the presbyteral council. The reference to non-indecorous uses, although not defined, is intended to exclude uses that are manifestly contrary to the Catholic doctrine or that might conflict with the characteristic parts of the building.

In 2018, the Pontifical Council of Culture issued the guidelines *Decommissioning and ecclesial reuse of churches*, addressed to the episcopal conferences of Europa, North America and Oceania. In this text, a preference is affirmed for intra-ecclesial forms of reuse, followed by cultural, social or charitable activities while a commercial transformation should be avoided (Pontifical Council of Culture, 2019, 286). In the light of a more advanced international reflection on cultural heritage, one of the suggested lines of research concerns precisely the «engagement with the local religious or civil communities in the processes of consciousness-raising and decision-making» (Pontifical Council of Culture, 2019, 281).

3 The International Contest

International documents, such as the Granada Convention (Council of Europe, 1985), emphasise the importance of the use of cultural heritage, provided that it is compatible with its «architectural and historical character». More recently, the Faro Convention (Council of Europe, 2005), the Xi'an Declaration (ICOMOS, 2005), the Kiev Statement (UNESCO World Heritage Centre, 2010) and the Burra Charter (Australia ICOMOS, 2013) have pointed out the importance of the community participation in the attribution of value and in the re-signification of cultural heritage.

In this perspective, it seems useful to interpret buildings of worship under the notion of commons. Moving from a natural science perspective (Hardin, 1968) and an economic approach (Ostrom, 1990), the doctrine is now trying to provide it with a legal definition, especially in relation to the city and urban governance (Foster & Iaione, 2016; Iaione & De Nictolis, 2021; Marella, 2017; Mattei & Quarta, 2015). A point of reference can be found in the attempt made by the Rodotà Commission in Italy which proposed to define «commons» as «goods that express functional benefits for the exercise of fundamental rights and the free development of the individual», including «cultural goods» (Marella, 2012, 161–168). A common good may thus be owned by a public body, an ecclesiastical entity, a private legal person or an individual. The key element is that the community perceives it as its own, i.e. as useful to its cultural and social needs.

4 The National Legislation in Three Case Studies

In order to better understand this phenomenon, a legal comparative analysis is proposed, concerning three traditionally Catholic countries, namely Belgium, France and Italy, each with a different level of secularisation, but all endowed with a significant religious cultural heritage. It shows that a new awareness is emerging, leading to the community involvement in the identification of the new profane uses, based on its cultural, social and economic needs. The recourse to participatory processes (Forester, 1999; Chevalier & Buckels, 2013) seems to be the best solution to make well-considered decisions respecting all the values and interests at stake, both civil and religious.

4.1 Belgium

Belgium is a federal state, divided into three communities (Dutch, French and German) and three regions (Flanders, Wallonia and Brussels-Capital). The latter are competent in dealing with the management of the material aspect of worship.

Places of worship built before 1802 (Concordat signed between Napoleon and Pius VII) are owned by municipalities (parish churches) and provinces (cathedrals). They are managed by public bodies, the *fabriques d'église*, composed of the parish priest, a representative of the municipality and lay people (Coomans, 2006, 54–58).

In 2016 in Flanders, the local government introduced the instrument of "strategic plan", a written document approved by the bishop and the municipal council, offering a long-term vision for all the buildings intended for worship on the territory. Elaborating on this document, it also made conditional the granting of contributions for the restoration of monumental places of worship. As a result, almost 180 out of 300 Flemish municipalities had drafted this text by early 2019 (Danckers et al., 2019, 427).

Indeed, a classification of uses has been adopted concerning cultural valorisation, mutual use, mixed uses in space or time and adaptive reuse (Danckers et al., 2016, 154–158; Collin & Jaspers, 2019, 173–177). 181 churches were decommissioned in Flanders from 2011 to 2021 (Somers & Diependaele, 2021, 3).

Searching for the best solution, communities can rely on PARCUM, a centre of religious heritage expertise, supported by the Flemish region, to intervene in the plan drafting. Its members organise meetings with local communities,

administer questionnaires and may be asked by the municipality and the *fabrique d'église* to collaborate in writing the document, before the final approval of the bishop and of the community council.

4.2 France

In France, the ownership of places of worship was exactly the same as in Belgium until the 1905 law of separation. This law unilaterally terminated the Napoleon Concordat and abolished the *fabriques d'église*, replacing them with *associations cultuelles*, governed by private law. Since the Catholic Church refused to create these associations, the ownership of the churches built between 1801 and 1905 was transferred to the municipalities (Flores-Lonjou, 2001, 27–34).

With regard to publicly-owned churches, there is a legal constraint on the use for worship, the *affectation cultuelle*, which entails the right of the Catholic community to dispose of this property free of charge, exclusively and perpetually. Since this bond can only be terminated under the conditions set out in Article 13 of the law of separation (*désaffectation*), activities other than worship would theoretically be excluded.

According to the French Bishops' Conference, only 255 churches were reduced to profane use and civilly *désaffectées* from 1905 to 2016 (Conférence des Évêques de France, 2016, 2–3). Mixed-use solutions in space and time have begun to emerge in praxis, going beyond the text of the law. In the urban area of Lyon-Saint-Étienne, a doctoral student in architecture invited the municipalities of Montarcher and Givors to activate participatory processes to identify hypothesis for the co-use or reuse of their churches (Meynier-Philip, 2018, 469–474; 512–526). This experiment shows that the best technical, economic and management solutions can only be adopted by taking into account all the values related to the good (Meynier-Philip, 2018, 493).

4.3 Italy

Compared to the other two countries, Italy has a very different system, as most churches are owned by civilly recognised ecclesiastical bodies, while the public ownership appears to be residual. According to some estimates, there are about 95,000 Catholic places of worship in Italy, 91,600 of which belong to parishes and religious institutes, while 2100 belong to public bodies (Santi, 1995, 66). The majority of these goods are recognised as cultural heritage, falling within the scope of the 2004 Cultural Heritage and Landscape Code. Overall, the Italian Catholic Church holds most of the national cultural heritage, accounting for 70% of the protected assets (Assini & Cordini, 2006, 79).

At the moment, the reduction to profane use can be estimated as affecting at least one thousand subsidiary, non-parish churches, located in rural and peripheral areas, where it may be more difficult to find a new suitable function.

A possible way forward can be found in the approach adopted by the Italian Bishops' Conference with regard to the construction of new churches. More specifically, participatory processes were activated to involve all the community concerned, through the distribution of questionnaires and the organisation of practical activities, held under the guidance of an interdisciplinary group of facilitators, providing ideas for the drafting of preliminary design documentation (Longhi, 2021). The same approach and expertise could easily be transferred in relation to the reuse of existent places of worship, seeking the widest involvement of the population.

5 Conclusions

In a future perspective, the participation of local communities will increasingly be a crucial element in addressing the issue of redundant places of worship in Europe, as shown by the Flemish strategic plans, a best practice that should be adapted to other countries.

Participatory processes can be induced by the civil authorities, the academia or the Church, but they must be genuine, not a legitimation of decisions already made elsewhere (Bartolomei, 2021, 127). To avoid this risk, the management of the processes must be left to independent facilitators. By doing so, political and ecclesiastical decision-makers would receive proposals that are truly representative of the community's needs and expectations.

In fact, the problem of reusing redundant churches is not only a matter for the Church or the State, but for the whole community. For this reason, the intervention of the municipality is essential, as it is the body closer to citizens and the guarantor of the public interest. For its part, the Church should facilitate new uses compatible with the history of the buildings and its own mission. Only through dialogue, it will be possible to truly transform a potential burden into a unique opportunity for the cultural, social and economic development of local communities.

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Religion and Identity Construction: Unity in Diversity

Mansoureh Ebrahimi, Asmady Idris, Kamaruzaman Yusoff, Teo Kok Seong, and Ahmad Muhyuddin B. Hj. Hassan

Abstract

The role of religion in constructing an identity based on Malay *Bumiputera* (son of the soil) Muslims, as the majority group of the population, is a debatable discussion among Malaysians. Since its 1957 independence, the supreme law of Malaysia, the Federal Constitution, has pronounced Islam as the official religion in the country and the Yang Dipertuan Agong, King of Malaysia, as the Head of Islam. This provision also allows other religious ideologies to be practiced. Apart from the 1969 tragedy, Malaysian people happily live in harmonious and peaceful multi-ethnic, multi-cultural and multi-religious societies while each ethnicity promotes its own culture, respects other diversities and cherishes differences to promote unity and avoid disunity. This article aims to examine the identity construction built up by the Malay *Bumiputera* Muslims and analyze people's responses to related government policies. Governmental attempts have been taken to promote stability and racial harmony. Still, there are hurdles faced by the Malaysians, such as economic disparities among ethnicities, education based on vernacular circles, and others. On top of that, there are vast differences in community identity construction between the Malay Peninsula and the Borneo states, Sabah and Sarawak. The former was directly politically colonized by the British, but the latter, especially Sabah, had no experience of 'divide and rule' along racial lines as the British presented in the Malay Peninsula because Sabah was initially ruled for business purposes by the North British Borneo Company but later incorporated as British colonies after 1946 and continued until 1963. To some extent, however, this historical setting has shaped Malaysian politics to be primarily centered upon the Malay and *Bumiputera* racial-hegemony context. This political setting cannot be avoided, for the Malay and *Bumiputera* Muslims need politics to safeguard their rights, but other ethnics are also permitted to form their parties to represent their communities. To conclude, this division has been made to provide unity in diversity in the multi-racial society, which is politically and socioeconomically constructed.

Keywords

Religion • Identity • Malaysia • Unity in diversity

M. Ebrahimi (✉) · K. Yusoff · A. M. B. Hj. Hassan
Academy of Islamic Civilisation, Universiti Teknologi Malaysia, Johor Bahru, Malaysia
e-mail: mansoureh@utm.my

K. Yusoff
e-mail: y.kamaruzaman@utm.my

A. M. B. Hj.Hassan
e-mail: amdean@utm.my

A. Idris
Faculty of Social Science and Humanities, Universiti Malaysia Sabah, Kota Kinabalu, Malaysia
e-mail: asmadyi@ums.edu.my

T. K. Seong
Institute of Ethnic Studies (KITA), Universiti Kebangsaan Malaysia, Bangi, Malaysia
e-mail: teokok@ukm.edu.my

1 Introduction

Malaysia's communal politics has been designed to entail its ethnically divided society thoroughly for political practices by compromising between major ethnic political leaders. Malay leadership as well as coalitions of non-*bumiputera*/non-Malay *bumiputera* have arguably anchored a hegemonic control for desired outcomes. Election thus by the coalition of the Alliance, particularly the Barisan Nasional (BN) and Pakatan Rakyat (PR) provides the situation based on 'consociational arrangements' (Saravanamuttu, 2016). Malay Muslims have tried to make Islam even more of an identity to strengthen the unity among the Malays rather than

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A. Osman et al. (eds.), *The Urban Ecologies of Divided Cities*, Advances in Science, Technology & Innovation,
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just a religion to be practiced—feasibly paved the way for unity in politics.

Historical institutionalism (HI) framework in Muslim-majority Malaysia shows assertive and hegemonic governments in controlling power. Critical elements of a model of politics can be given to the function of characters involving economy and education beyond that of political practices.

2 Problem Statements

Over decades, Malaysian society would still remain based mainly on religious power rift and racial segregation. The authors attempt to answer two key questions: (1) How did the Malay *Bumiputera* Muslims build up the identity construction?; and (2) What was Malaysians' responses to related government policies?

3 Major Issue(s) Addressed

The mechanism of consociationalism in practicing democracy indicates that Malay *Bumiputera* Muslims explicitly articulate political insights to address the practice of consensus democracy. The importance of Malay context to consolidate the social relations among multi-racial population has required vigorous consideration for the development of the Malaysian Constitution since its independence. For effective governance, many diverse political parties emerged and still continue today. The parties were formed on the basis of race, religion and ideology, and centered on right wing organizations such as the United Malay National Organization (UMNO), the Malayan Chinese Association (MCA), and the Malayan Indian Congress (MIC), all espoused the ideals of the Constitution in its entirety.

After Malaya achieved its independence, and with UMNO as the main political party governing, within six years of the formation of Malaysia, the interracial disputes become worse, mainly due to special rights given to Malays. This racial dispute was particularly between Malays and Chinese in Malaya. On May, 13, 1969, the Malay and the Chinese fought a bloody battle, but the country has lived relatively harmoniously since then.

The formation of Malaysia in 1963 with the inclusion of Sabah and Sarawak, however, comes with specific conditions and autonomous governance (Fig. 1). Both Sabah and Sarawak laid down a 20 point and an 18 point agreement respectively in order to safeguard their welfare and geopolitical integrity (Osman, 1992). The process of nation-building between Sabah and Sarawak within the Federation of Malaysia revolves around the agreed point of agreements which is called the 'Malaysia Agreement 1963'

Fig. 1 Malaysia map (Google Earth Pro, n.d)

(MA1963). Amidst the contentious themes that arose in the relation between the Federal government and the Borneo states (Kalimuthu, 1986), nonetheless, through the formation of successful political alliance between the leaders of the Malay Peninsula and the Borneo states, an efficacious constructed political coalition and a commendable governance for the benefits of the whole population has been achieved (Idris & Mohamad, 2014; Abdullah, 2022).

4 Potential Significance of the Work

This paper provides the insight of Malaysia's brief historical and political development for Malaysian society, general public, and social and political scientists; recommendations on capacity development in the areas of sustainable development in policy decisions; and promotes learning and sharing of best practices on action or operation, peace-building in the Malaysian society.

5 Theoretical and Methodological Approaches

Qualitative method was employed. This comprehensive study addresses the documentary analysis and interviews with a qualitative approach through historical analysis based on facts and authentic sources available in libraries to support the analysis that achieved our objectives.

6 Major Findings

In its Federal Constitution, Malaysia has announced Islam in the constitution and Agong as head of Islam as the foundation of building the society. Malay *Bumiputera* is introduced to Islam as a way of life. The main issue regarding identity construction happened in 1969 when Chinese and Malays conflict heated up. Since then, Malay Muslims have been taught to be united through Islam. However, not only 'Official Islam' but also the Perikatan government could not bring unity between Malays and Chinese. The tragedy caused a new development in political parties via coalitions as the Malays believe that they have to be united at the federal level. PAS joined UMNO to form a coalition in 1971, called Barisan Nasional.

Mahathir's Islamization of the administration then began in 1980s, and the idea of Islamization of knowledge and economy took place with the establishment of IIUM and Bank Islam. Mahatahir's Islamization Policy reached its highest level in 1993 by bringing in Anwar Ibrahim as his Deputy PM. Prime minister Abdullah Badawi also initiated a new Islamic approach that is Islam Hadhari meaning Civilisational Islam, and when Najib Razak took the government, he manifested *Wasatiyyeh* (Islamic Moderation). Before the 14th general election, the 1MDB issue had escalated in the society (Loh & Netto, 2018).

In later years, Malaysia was shocked by the 1MDB fiasco. The main actors in the scandal involved former prime minister Najib who was also the Chairman of the 1MDB board, his spouse, Rosmah Mansur, and Jho Low who was purported to be the driving force behind the corruption scandal (Seth-Jones, 2020). The result of this fiasco resulted in the loss of confidence in foreign investment, and the need for cross-border transaction close monitoring. The success of restoring the confidence of both the Rakyat and the international community is dependent on Ismail's leadership.

Authors perceive that the only strategy that could calm Chinese and Malays was MCA and MIC in their coalitions with BN from 1971 until now. In fact, BN is pragmatic and focused on the development and progress of Malaysia regardless of religion, resulting in a society of harmony, peace and stability. Under one objective, the party's target is to maintain their power. Identity politics constructs "new social movements" (Cerulo, 1997). The question remaining is how 'Official Islam' can bring identity to non-Muslims to enhance unity in diversity in society (Ebrahimi & Yusoff, 2020). In fact, Malaysia's identity is not merely based on religion but it is one of the fundamental elements in 5 Rukun Negara (National Principles) including Believe in God; Loyalty to Rulers/King & country; Supremacy of Constitution; Rule of Law; and Courtesy & Morality. These 5 elements form/bind all races in Malaysia for unity in diversity.

7 Conclusion

A major challenge for Malaysian people is to build unity in the face of diversity, for community development. Due to its heterogeneous society, Malaysia has yet to gain unity in diversity (the 2018 National Unity). Integration must be embedded in culture, through understanding and respect and a desire for harmony. Governance covers many facets of systems and processes to ensure they are operating in a well-controlled manner. The role of the current administration is to ensure a steady government and strong political leadership and to exemplify proper governance including corporate governance for 1MDB issues) in the key areas mentioned above such as the *bumiputera* agenda, 1MDB fiasco, sustainable development, and approaches to political turmoil after the merger and responses of the Borneo states. These key areas need to be addressed otherwise they will contribute to economic and socio-political fallout for the country. The country should focus on a government succession plan to ensure continuity of political leadership. Establishing a mutual understanding between the

government and business sector will help to rejuvenate the unity in diversity among Malaysians. Investing in healthcare and education are important in the long term not only for job prospects but also as an opportunity for the people to escape from poverty and a lifeline to sustain future generations.

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The Minimum Logic: The Influence of 1950s Model Native Housing Design on Contemporary Affordable Housing Design in South Africa

Nomonde Gwebu

Abstract

The Council for Scientific Industrial Research (CSIR) and the National Building Research Institute (NBRI) in 1952 commissioned the architectural profession to propose design solutions for the 'problem' of the rising population of Urban Natives. Design practices that keep housing development costs low are captioned in this study as the 'Minimum Logic'. The research argues that the design of the Model Native House (between 1952 and 1994), the Reconstruction and Development Programme house (RDP) (1994–2004), and the Breaking New Ground house (BNG) (2004 to present), adhere, in their spatial delineation, limits to design, and finishes to the Minimum Logic. The paper aims to theorize this proposition, focusing on the embedded social meanings that the Minimum Logic instantiated. A review of Request for Proposals (RfPs) data of the Housing Development Agency (HDA) from 2017 to 2021 shows a reduced role of architects in low-cost housing projects. It is proposed that the stagnation in the design of low-cost housing is not due to the low-cost imperative, but rather due to the absence of the architect to re-order social meanings in a post-Apartheid South Africa, compared to their leadership in embedding social meaning into Apartheid housing schemes.

Keywords

Native housing • Low-cost housing • Sustainable housing

1 Introduction

It is argued that from 1952 to the present low-cost house design has prioritized minimum expenditure above material and social sustainability (Poulsen, 2010) (Mabuya & Scholes, 2020) (Ndinga-Kanga et al., 2020). The study captions this logic of valuing minimum expenditure above all else as the 'Minimum Logic'.

2 Native Housing (Pre-1952)

Figure 1a shows a 4 room, 2 bedroomed house. The double and single beds indicate a hierarchy in spatial usage. At 49 m^2, the unit is compact yet includes a room with a private entrance, potentially providing a tenant rental income.

Figure 1b presents a 70 m^2 plan comprising 3 bedrooms, a stoep and a generous kitchen/living/multi-purpose area. The bedrooms all have double beds; the reduced spatial hierarchy potentially indicating an atypical family structure.

Figure 1c is 75 m^2 and shows the layout preference of ablutions in an outhouse. The result is a private laundry courtyard linking the main house to the ablution facilities.

The nationally implemented designs of the Model Native House were published in Architect Douglas McGavin Calderwood's doctoral thesis: *Native Housing in South Africa.* In the above excerpt of his precedent study (Fig. 1), Calderwood (1952, p. 22) affirmed the home with the smallest 49 m^2 footprint (Fig. 1a) as "admirable"; dismissed the larger 70 m^2 home (Fig. 1b) as "having a complex arrangement"; and the home with the largest floor area of 75m^2 (Fig. 1c) was criticized for being "extremely wasteful". These insouciant comments underpinned the Minimum Logic, and established the Model Native Housing proposals.

N. Gwebu (✉)
University of the Witwatersrand, Johannesburg, South Africa
e-mail: nomonde.gwebu@wits.ac.za

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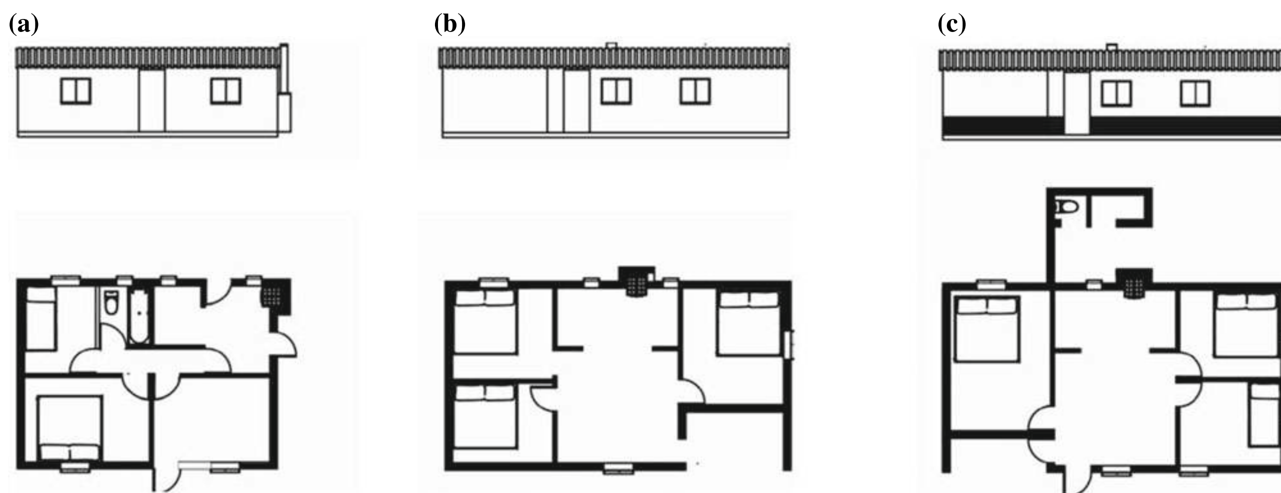

Fig. 1 Precedent Study of Native Housing Prior to 1952 (from left to right). **a** 49 m^2 type plan built in sharpe township vereeniging. **b** 70 m^2 semi-detached type house, Pietermaritzburg, Natal. **c** Precedent study of native housing prior to 1952: 75 m^2 House type, Stirtville, Boksburg. *Source* Calderwood (1952, pp. 20–21), redrawn by Author, 2022

3 Native Housing (1952–1994)

The two-bedroom house proposed by the "Standard type plan NE51/12A" (Table 1) appears to offer an improved square meterage compared to the average prior to 1952. The above however needs to be reviewed alongside the following outline of the number of persons envisioned to be accommodated by each dwelling.

When a Pre-1952 house was called "two-bedroom" (Table 1; Fig. 1) it meant that there were two bedrooms with additional separate rooms such as the kitchen and living room. A two-bedroom house would thus be made up of 4/5 rooms in total when including the living room, kitchen, and bathroom (Table 2). However shows a labelling adjustment from "two-bedroom" to "two-room". An illustration of a two-room is shown below in (Fig. 2a). One of the two rooms is a bedroom, and the other room is an interconnected

Table 1 An average size comparison of a "two bedroom house" type pre and post 1952

Two bedroom house—areas in square feet (m^2)								
	Living room	Kitchen	Bed-room 1	Bed-room 2	Store	Stoep	Bath-room	Total
Average prior to 1952	140 (13)	55 (5.1)	110 (10,2)	108 (10)	22 (2)	46 (4.3)	25 (2,3)	580 (53.9)
Standard type plan NE51/12A	121 (11.2)	90 (8.4)	125 (11.6)	94 (8.7)	15 (1.4)	–	34 (3,6)	596 (55.4)

Source Calderwood (1952, p. 28)

Table 2 An average size comparison of 1–5 room units post 1952

Number of persons accommodated	Type of dwelling	Room areas in Square Feet (m^2)			
		Main bedroom	Other bedrooms	Dining kitchen	Living room
2–3 Persons	1 Room unit	–	–	70 (6.5)	118 (11)
4–5 Persons	2 Room unit	118 (11)	–	80 (7.4)	115 (10.7)
6–7 Persons	3 Room unit	118 (11)	94 (8.7)	90 (8.4)	120 (11.1)
8–9 Persons	4 Room unit	118 (11)	94 (8.7)	100 (9.3)	125 (11.6)
10–11 Persons	5 Room unit	118 (11)	94 (8.7)	110 (10.2)	130 (12)
2(aged) Persons	1 Room unit	–	–	70 (6.5)	110 (10.2)

Source Calderwood (1952, p. 26)

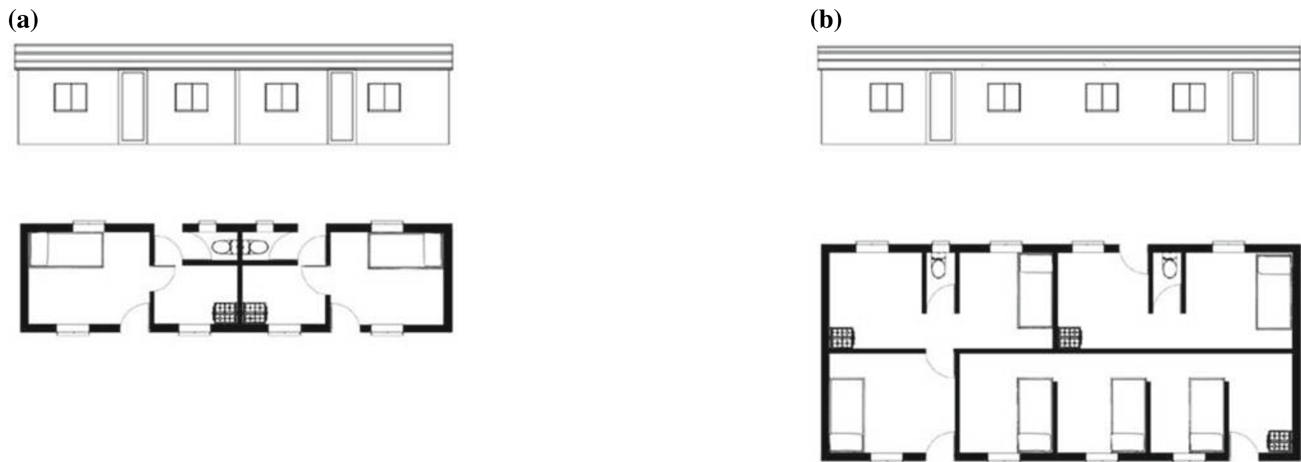

Fig. 2 **a** 2 Room (row house). **b** 3, 2, 4 Room houses (row houses). *Source* Calderwood (1952, pp. 28–31)

kitchen/bathroom. According to (Table 2), a 2-room unit, with 1 bedroom, was envisioned for 4–5 persons.

The "two-bedroom" Prior to 1952 was intended for 4 people, in 2 separate bedrooms; while the "two-room" of the Model Native house had one bedroom intended for 4–5 people. Social meanings established by these designs include that the Native should not have excess or varied spatial arrangements, and that 4–5 persons may share a single bedroom.

4 Reconstruction Development Programme (RDP, 1994–2004)

The most widely implemented RDP house design (Moolla et al., 2011) is shown in Fig. 3 (Mabuya & Scholes, 2020, redrawn by Author). The plan is square with 3 windows including a naturally ventilated toilet. The layout is open plan. From an urban perspective, there is no improvement in the Model Native House. The research argues that the removal of internal walls as a design intervention does not substantively reimagine the Minimum Logic.

5 Breaking New Ground (BNG, 2004–Present)

The below house design was provided in a RfP for the large-scale development of low-cost housing issued by the HDA in November 2021.

The BNG dwelling in Fig. 4 (Housing Development Agency 2021) is 30 m^2, has 1 bedroom, 1 living room and 2 windows. This "two-room" house would accommodate the average South African family size of 4–5 (StatsSA, 2018) as in the case of the Model Native House.

The data in Fig. 5 (Author, 2022) was sourced from the HDA, an arm of the state that implements large-scale low-cost housing projects. The graph presents an overview of the instances where various professionals are compulsory members of the low-cost housing development project team. The data reviews all 20 of the HDA low-cost housing RfPs, issued over the 5-year period 2017–2021. Architects are listed as required professionals in only 5% of the national RfPs made by the HDA during the period.

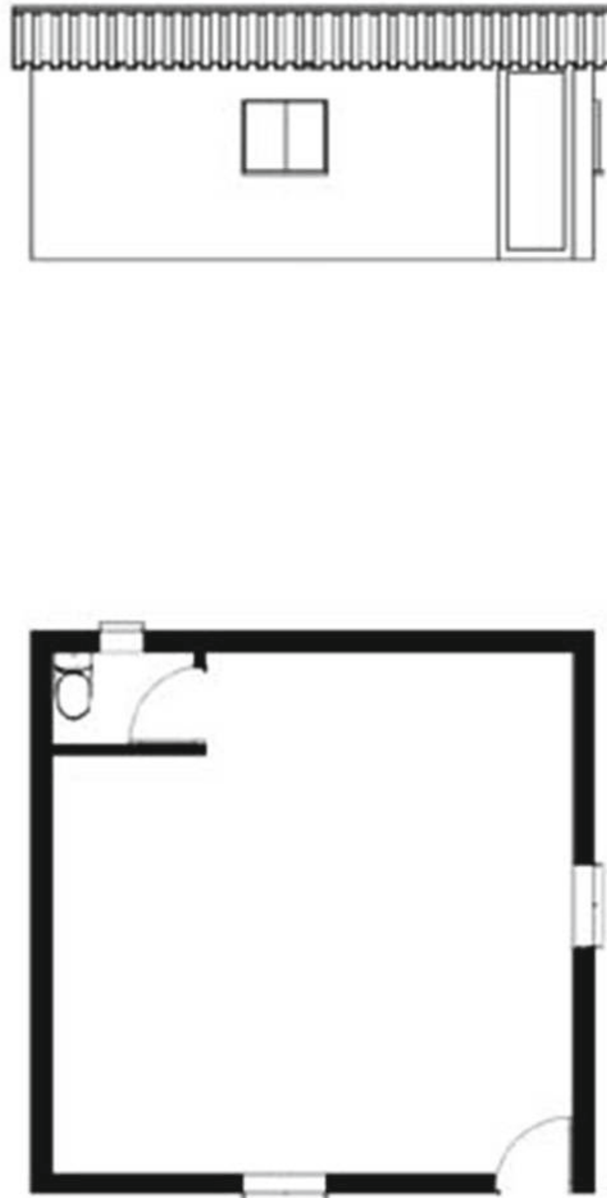

Fig. 3 RDP, typical housing plan (36 m^2). *Source* Mabuya and Scholes (2020) redrawn by Author, 2022

6 Conclusion

The Minimum Logic established in the 1952 Model Native House design was maintained throughout the RDP and the BNG housing designs, while the design contribution of architects was simultaneously shrinking. This suggests that in the absence of the contribution of the architect to embed the renewed social meaning of the post-1994 dispensation into low-cost housing design, this aspect remains largely unfulfilled, and the Minimum Logic prevails.

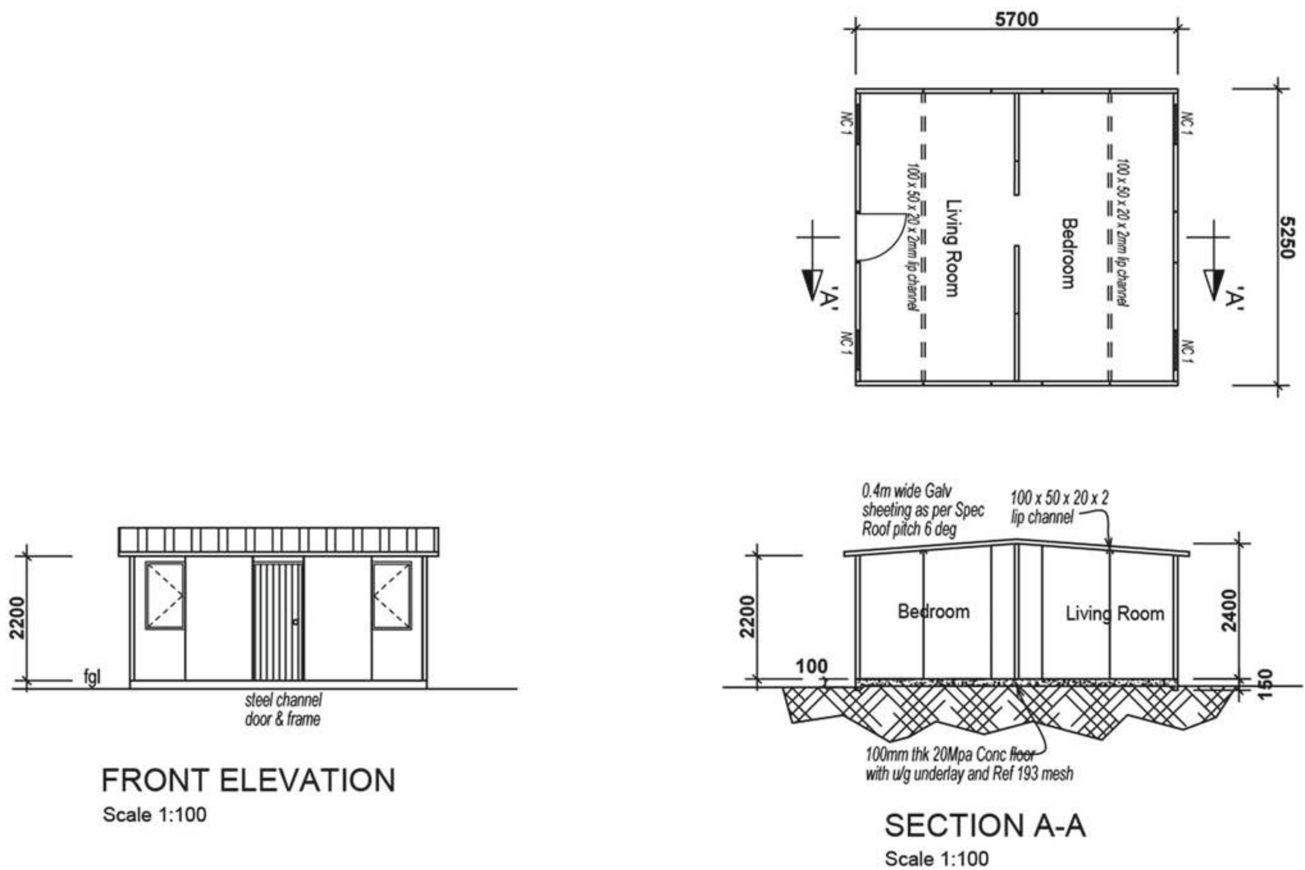

Fig. 4 Accommodation construction bid: HDA/KZN/2021/010. *Source* Housing Development Agency (2021)

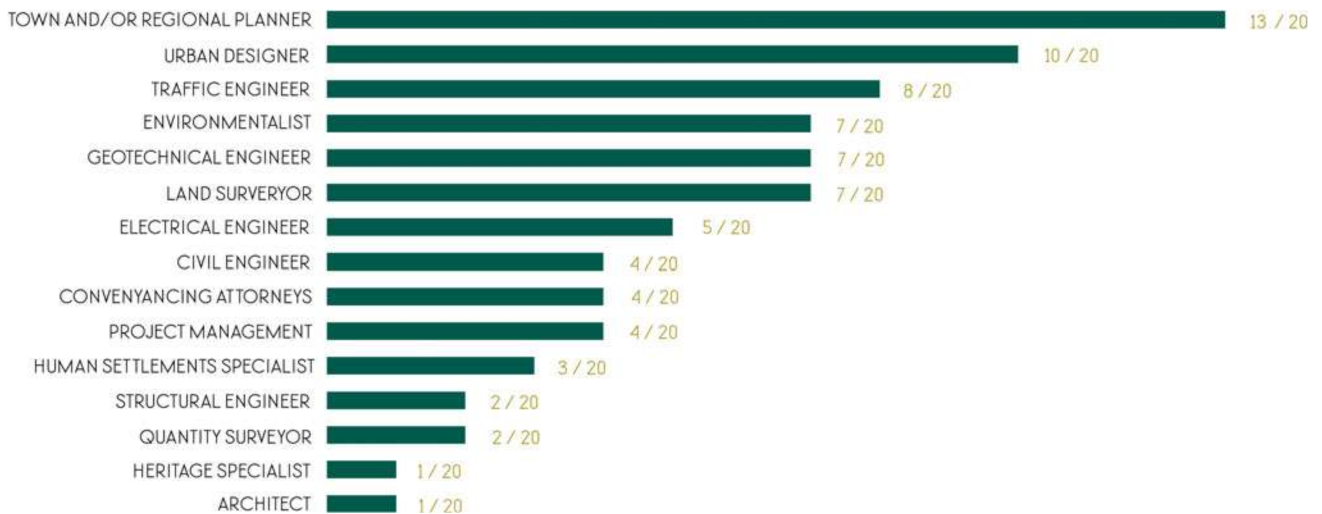

Fig. 5 The number of instances each professional is requested by the HDA to participate in the development of 20 large-scale low-cost housing projects during the 2017–2021 period. *Source* Author, 2022

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Learning from the Falls Belfast: Urban Reflections on Defensive Space in Belfast

Alona Martinez Perez

Abstract

This is a typological study of the Falls in Belfast as Divided Street and its relationship with the Troubles and its landscape today as well as the Irish Language Movement as a rebirth of the Old Street into an Irish Language Street Strip. This paper examines the Falls Road (located in West Belfast) which is a largely Catholic/Irish Republican neighbourhood particularly relevant during the conflict known as The Troubles, the conflict cost 3,500 lives. The paper starts from looking at two parallel events that happened alongside the street. Firstly, it analyses the events that emerged during the conflict, and secondly the construction of the architecture that emerged from this conflict. Using an immersive approach, the authors will enter the street from the bottom of The Lower Falls to the top of The Milltown Cemetery. By entering the landscape and walking and taking photographs and analysing this we will be able to determine what is the typology of both that fragmentation and defensive space left from the conflict and discuss the effects on the residents that live on those areas and the mental health problems associated with this kind of urban landscape. The typology of the defensive space will then be counterbalanced by the positive additions in architecture of key Irish Language projects that have been built since 1998 the date when the Good Friday Agreement was established.

Keywords

Divided cities • Conflict cities • Irish cities • Belfast regeneration • Culturlann • Irish Language

A. M. Perez (✉)
Leicester School of Architecture, De Montfort University, Leicester, UK
e-mail: alona.martinezperez@dmu.ac.uk

Using the concept of *Strip*, I can analyse and break down the street into different sections to understand how this post-conflict entity is in the positive elements that now fill this context. As I walked through the Strip of the Falls I could see the impact the automobile had in this corridor and on the city, where the environment is designed towards this new spatial order which Venturi and Scott-Brown referred to in their seminal book as a tool to analyse urban space that is easily transferable to The Falls Road as it is a Strip that connects the West of the City with the city centre and an arterial route. Because of the conflict, the car connection and the West link Highway offer a landscape where the urban has been changed for a new kind of American landscape in Belfast. As Venturi and Scott-Brown write in their Studio Notes (Venturi et al., 1977, p. 73): "We are evolving new tools: analytical tools for understanding new space and form, and graphic tools for representing them". In order to understand this strip it is also important to see how the environment has been shaped through the symbols that this new space develops such as signs of the conflict emphasizing the importance of communication of architecture of symbols in space alongside the Strip in the Falls Road.

While the strip offers a new spatial order related to the automobile and highway communication it also looks at another way of understanding the city to evolve new thinking and concepts of forms more suited to 21st century realities than the traditional city cartography and using photography and navigating through the space to understand this kind of new city and reflecting on it by walking through it and mapping it in sections like the Strip of Las Vegas as a proposition into a new urban setting. The idea of the Strip as a tool is relevant to the context of the Falls road in Belfast as the Westlink Highway was created to promote segregation between Catholic and Protestant areas, and also to separate those areas in the West of the City from the city Centre, making Belfast the city with more car ownership in Western Europe, hence why the idea of the Strip is key to understand

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this new city that we have today that is both fractured and broken by the past Conflict. I have used this method successfully to map Madrid's periphery in the context of the New European motorcar city as a proven method of urban mapping in my PhD thesis.

In this context of West Belfast and returning to Solà-Morales i Rubió (2008, p. 26) "If in order to interpret the form of the city we try to reinvent a catalogue of spaces, the prototypes that we thought we have discovered have disappeared by the next day […] A pavement, a glass façade, a wall, a ramp or a distant perspective interrupted by obstacles, a silhouette against the sky and a closed patio, bare, unfinished roads half-occupied by provisional pieces of furniture, a whole range of banal situations, of insignificant postcards, of series of 'peripheral' or 'unconnected' or informal' spaces are urban still-lifes if we look at them through the eyes of a painter […]They are the syntagmata of the language of urban spaces". The conflict called The Troubles started in Northern Ireland in the late 1960's until 1998, and it was a conflict that saw two parts of the communities, Catholics and Protestants for more than three decades. The Falls Road is a street that runs from the West of the City of Belfast to the city centre. It is next to the Shankill Road (both streets run in parallel to each other). The Shankill Road is Protestant. The street was the heart of the Republican/Catholic community during the conflict. I will analyse the Strip from the bottom of the Falls 1—looking at the construction of the Divis Flats and the Westlink Highway (both points of control by the British Army but also to separate the working class areas from the West of the city with the city centre, 2—the peace lines (walls separating areas Catholic and Protestant), the buffer zones (areas left over after the conflict) and no go areas (areas where British Army and Police were not allowed to enter during the conflict), 3—Irish culture sites of importance along the Falls (Gardens, Mural dedicated to Republican/Catholic community related themes) and ultimately the Milltown Cemetery (where the hunger strikers are buried including Bobby Sands).

The political/social events associated with the sites during the conflict for the three areas are the following 1—Creation of functionalist housing in areas of Belfast (Divis Flats) to provide better quality housing and removal of terrace housing started in most British Cities in the 1960's. Political events that led to the conflict associated with this part of the Street are 1—Civil Rights Marches and movements between Belfast and Derry, in particular, to do with better right for Catholics and need for housing and access to education. 2—The Falls Curfew, that was the Battle of the Falls (or Lower Falls), was a British Army operation during 3–5 July 1970 and Internment who increased the conflict in the area and affected that part of the street and also the campaign to demolish the Divis Flats by the Catholic community. The construction of the Highway the Westlink was an attempt to separate both communities from the city centre and keep control of the conflict areas and is now breaking the West of the city from the city centre. Political events associated with the middle of the street are: 1—Bombay Street destruction and no go areas which were areas and spaces that resulted from the conflict. No go areas were areas that were barricaded off during the conflict, usually by a paramilitary organisation, within which the police, army, etc., can only enter the area by force. And 2—the peacelines were created in Bombay Street and in all the interface areas between the Catholic and Protestant communities as a form of protection during the conflict and remain today. And the top of the Falls, the political events that were key to this part of the street 1—Hunger Strikes. The main political events mentioned are those that affected the Catholic community as the area studied and the street is mainly a Republican/Catholic Street. This paper will look at the change in these spaces since 1998, and how they have positively been turned around by new projects and architectural buildings to revive an inclusive Irish culture on both sides of the community and heal the broken urban fractures left by the conflict as a stitching ground. Projects like the Culturlann, the Irish speaking school at the top of the Falls, and the new Irish radio station Radio Failte by Irish Architect Ciaran Mackel at the bottom of the Falls. The street will be analysed using photography as a tool, as exposed in the seminal essay by the Catalan Architect Ignasi de Solà-Morales and the concept of *'terrain vague'* as an architectural tool.

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Questions of Agency

Repositioning Architectural Education Through Tactics of Transgression

Absalom Jabu Makhubu

Abstract

The act of drawing a line on paper can be viewed as an act of division. In spatial disciplines such as architecture, urban design, and planning lines tell us many things. They define borders from boundaries and describe what is in from what is out, what is above from what is below, and what is important from what is not. They have the power to divide and connect. Apartheid has had a profound impact on the shape and form of cities in South Africa, which are in many ways challenged by its legacies. Pedagogically, the need for transformation in institutions of higher learning in the country has been a growing one, especially after the 2015/2016 national student protest for free and decolonized education. Based on the student outputs and discussions in the studio, students of architecture in Johannesburg have very particular experiences/questions about the city that they would like to explore in their training, however, architectural education does not yet have the tools, principles, pattern, ethics, and vocabulary sufficient to engage those inquiries. More work is needed to transform and reposition architectural education to address contemporary urbanity. In 2017, the department of architecture (DoA) at UJ transformed its pedagogy through the introduction of semester-long, cross-stream vertical studio electives, covering themes such as public space in the city, landscapes of worship, tectonics of refuge, and protest city. This paper maps the shifts in architectural education at UJ since 2011, with emphasis on the Protest City elective. It uses the elective course documentation, and the student's outputs to make an argument to reposition architectural education.

Keywords

Agency • Architectural education • Alternative imaginaries • Radical

1 Introduction

> To write is the same thing as to form…, to write is to bring to the surface something that is not yet there or that is there only as latent, as potential.—(Mbembé & Nuttall, 2004 quoting Maurice Blanchot)

Lines, like words, possess the power to create worlds. Through the lines, we demarcate and divide what is in from out, what is the center from the periphery, legal from lawless, and private from the public. Lines can also make connections. As cartographers and spatial practitioners, we have agency.

The methodology of the study follows a qualitative approach. It uses the DoA as a case study. Data is collected through desktop study, archives, and analysis of design outputs. The paper is organized in a scalar framework, from the macro (national) to the micro (design studio).

Richard Sennet challenges us to become probing craftspeople (sic) (Sennett, 2009). To create conditions that will help us confront our divides, so we can understand them better. This paper briefly discusses changes in teaching and learning at the DoA on the backdrop of the 2015/2016 nationwide student protest actions calling amongst other things for free and decolonized education.

A. J. Makhubu (✉)
University of Johannesburg, Johannesburg, South Africa
e-mail: jabum@uj.ac.za

A. J. Makhubu
Tshwane University of Technology, Pretoria, South Africa

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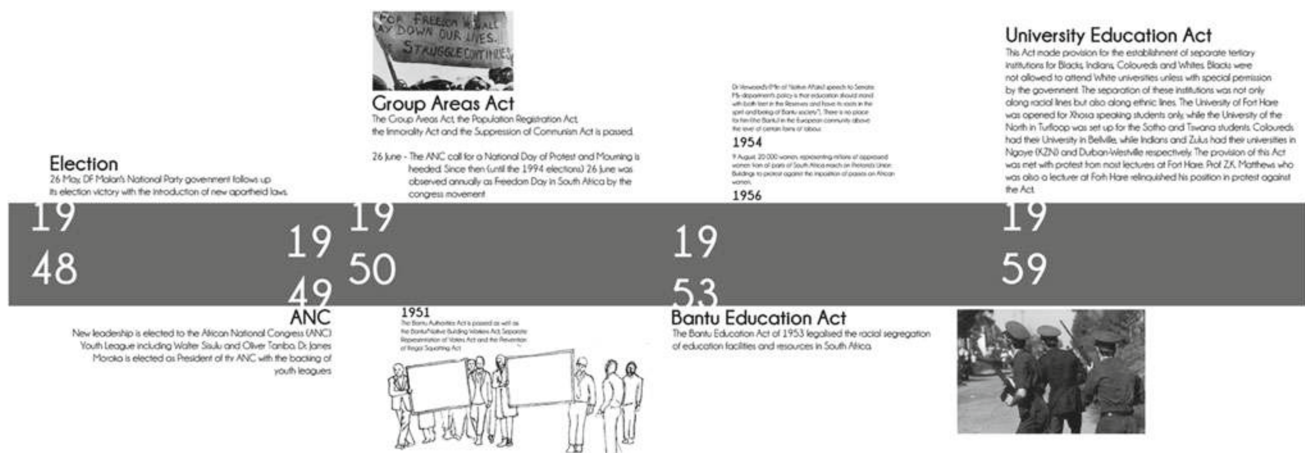

Fig. 1 Timeline illustration of key historical events related to education in South Africa. *Source* Makhubu and Toffa (2017)

2 A Divided Nation

South Africa is a divided nation. This fact is due to many years of systemic oppression and discrimination sustained by laws, acts, and regulations such as the Group Areas Act of 1950 (GAA), the Bantu Education Act of 1953 (BEA), and the University Education Act of 1959 (UEA). All these acts were legislated during the apartheid regime and restricted access to quality education on racial grounds as illustrated in Fig. 1. GAA for instance regulated the existence of black people in major cities like Johannesburg. BEA regulated the pedagogy in "black" schools through the removal of non-labor-related content. As the Minister of Native Affairs, Dr. Hendrik F. Verwoerd, graphically explained: "There is no space for him [the "Native"] in the European Community above certain forms of labor. For this reason, it is of no avail for him to receive training which has its aim in the absorption of the European Community, where he cannot be absorbed" (Maree, 1984). The UEA made provision for the establishment of separate tertiary institutions for those classified as black, Indian and, colored, which were often in townships and outside the city center. Moreover, these were vocational training institutions.

3 Divided Architectural Education System

In 1932, a period during the Union of South Africa before apartheid was a policy/law in the country, then professor of architecture at the University of Witwatersrand Geoffrey Eastcott Pearse received a grant from the Carnegie Corporation of New York to visit America, Canada, and Europe to conduct a survey of their schools of architecture. On his return to South Africa, Pearse published a report on his visits titled *Architectural Education: A Survey of the Problems in South Africa, the United States of America, Canada, and Europe* (Pearse, 1934), in which Pearse gives his reflections on the structure/curriculum/education and the practice of architects in these nations. Pearse credits Cecil Rhodes and Herbert Barker for "…improving the standard of taste in architecture in South Africa" (Pearse, 1934).

Globally, architectural education has been under scrutiny for the better half of the twentieth century. Locally, it has been the subject of study before the eruption of the 2015/2016 student protests actions for fees to fall and decolonised education. These doctoral studies provide strong arguments for alternative modes of practice from policy and institutional levels (Luckan, 2016; Saidi, 2006) to programme and module levels (Janse Van Rensburg, 2016). Beyond doctoral studies, many other practitioners and educators have contributed to the discourse on South Africa's architectural education, see Bruyns and Graafland (2012) Lokko (2015), Mills and Lipman (1994), Osman (2009), Young-Pugh (2005).

4 Divided Architectural Department

The DoA offered its first master's programme in 2012, built on the strength of its technical-orientated undergraduate programmes. During this time, the department was exploring alternative pedagogic approaches through vertical studios such as *creativity week* and the widely published *Marlborough South Studio*. In 2014, a new pedagogic approach was introduced to the master's programme. In 2015 the master's

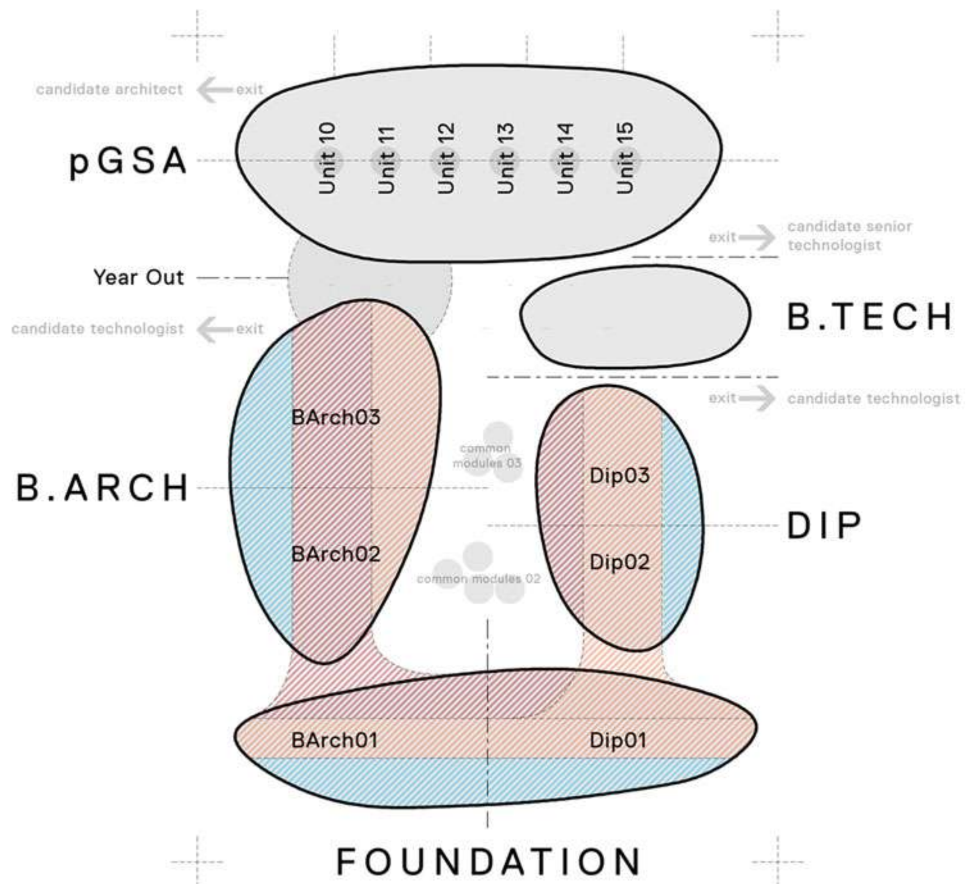

Fig. 2 Illustration of Architectural Programme structure at UJ. *Source* Department of Architecture 2020 Vision Document (2017)

programme separated from the DoA, and the (post)Graduate School of Architecture (GSA) was formed, resulting in a divide in the DoA. This signalled a shift and repositioning of architectural education at UJ (Fig. 2).

5 Divided Architectural Pedagogies

The GSA introduced the unit system of teaching with the mandate to "transform contemporary African architectural education". The DoA introduced electives in 2017, as part of its repositioning. The electives are a type of vertical studio themed around the research interests of the lecturers. This experiment took place in the first semester of both the second and third years of the degree and diploma streams. Six electives (see Fig. 3) were offered in 2017.

5.1 Protest City Elective

Returning to Sennet's (2009) provocation made earlier. For the academy, its educators and students, the national student protests in 2015 presented a challenge. It brought into focus a range of fundamental questions about education and the university (Fig. 4).

Protest City elective (Fig. 5) saw this as an opportunity to probe the discourse through various transgressive tactics. In the first term, we focused on *Theorizing Protest* in which we asked students to bring their concerns and ethics in conversation with those of the academy and those on the streets. We researched key historic protest events (See Fig. 4) to theorize the socio-spatial significance that they articulated.

The topicality introduced into the first term of the studio emerging from the lived experience was extensive and

Fig. 3 Compilation of posters advertising to DoA students the 2017 electives offered by DoA

varied; issues ranged from national politics, and, societal ills to environmental concerns (Makhubu & Toffa, 2017). Students worked in groups to identify issues and spaces they wanted to explore. They led the process, breaking down the passive "banking system" (Freire & Ramos, 1993) approach.

In the second term, with a different group of students, the tactic introduced was to explore the site not only as a place for analysis and design informants, but as a place to surface questions. Rather than the site introduced at the beginning of a project and thus occupying discursive primacy, we reversed this norm.

Since protests are neither sustainable nor desirable as a consistent mode of operation, the challenge is to build a 'new normal', a new culture. To transform the architectural praxis into an ethically responsive one (see Fig. 6). As one student elucidates:

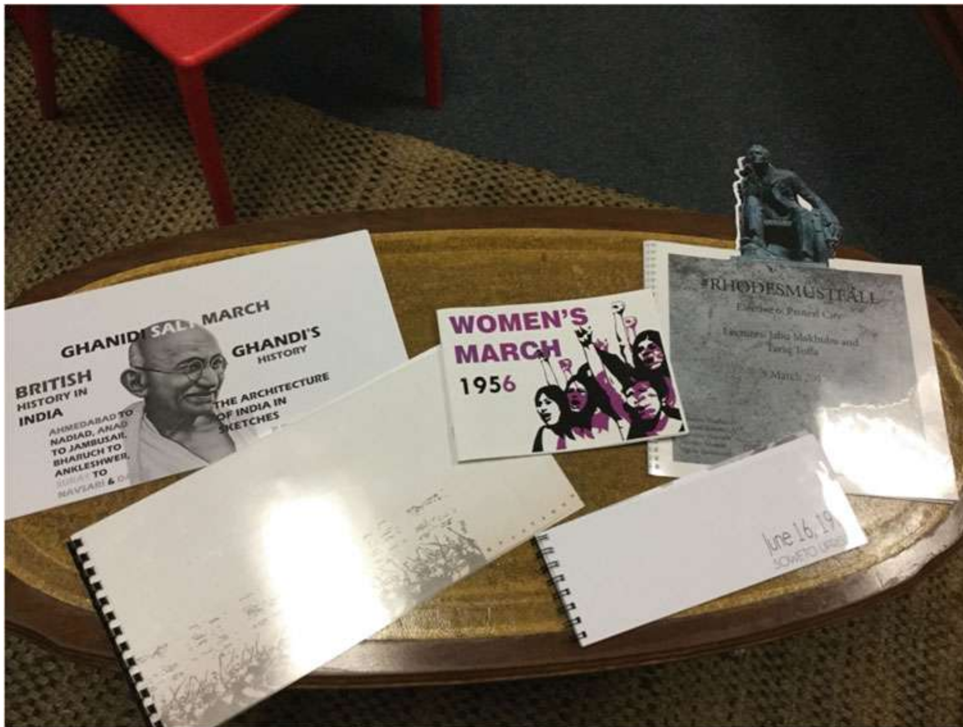

Fig. 4 Photograph of research documents produced by students exploring key protest events. *Source* Author

> ... this presented the opportunity for me to learn and understand xenophobia a little deeper. I now understand that xenophobic attacks happen due to social, economic, and sometimes political reasons.

6 Conclusion

South Africa faces the challenge of wrestling with systemic legacies of apartheid, with its multiple and multifaceted divides. Moreover, architectural education, being concerned with giving form to our ideologies and serving as a physical manifestation of our individual and collective values, requires a repositioning to make the discipline relevant to the spirit of this time.

Since the Protest City studio experiment, we have deepened and widened our architectural praxis to reach other sectors that are not often prioritised in the discourse. From studios exploring migration, sustainability, access, public participation and recently intersectionality, each attempting to reduce the line that divides and probing us to ask deeper questions about the role our spatial discipline plays.

STOP XENOPHOBIA

XENOPHOBIA IS ON THE RISE IN SOUTH AFRICA AND MORE ESPECIALLY IN THE TOWNSHIP AREAS. WITH A CLOSER LOOKS AT ALEXNDRA TOWNSHIP THE CONCEPT OF "WALKING IN SOMEONE ELSE'S SHOES" WAS DEVELOPED AS AFRICANS ARE ALL THE SAME AND NEED TO CELEBRATE THE THINGS WE HAVE IN COMMON AS WELL AS OUR DIFFERENT BACKGROUNDS AN CULTURES.

A SOCIAL COHESION SPCAE IN ALEXANDRA TOWNSHIP WILL HELP WITH CREATING A SPACE WHERE FOREIGNERS AND SOUTH AFICANS CAN COME TOGETHER AND EXCHANGE INFROMATION, SKILLS AS WELL AS TRADE. THIS WILL HELP WITH BREAKING THE BOARDERS BETWEEN THE TWO AND HELP STOP XENOPHOBIA.

CONCEPT SKETCHES

Fig. 5 Graphic Poster of a Student project on Xenophobia presented in the Protest city elective. *Source* Makhubu and Toffa (2017)

Fig. 6 Collage of conceptual architectural explorations to reimagine Luthuli House based on social bonds and ethics. *Source* Makhubu and Toffa (2017, An excerpt from a student's project)

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The Role of Art in the Construction of Public Space: Istanbul Biennials from 1987 to 2019

Elif Eş and Guliz Ozorhon

Abstract

This study focuses on the interaction of public space and art, and uses the Istanbul Biennale (1987–2019) as an example to explore the role of art in public space. This study firstly examines public space, art in public space, and public-art issues, and discusses the relationship between public space and art from the past to the present. With its layered and dynamic structure, the Biennale provides a rich space for examining this relationship. The Istanbul Biennial, during its 32-year history, where this relationship can be observed in a certain continuum, was chosen as the field of study. In this study, the distribution of the Istanbul-Biennial in the city, the types of venues used and the relationship between these venues are investigated. For the analysis, firstly, the discourses, themes and curatorial expansions of the 16 biennials were searched through literature and printed media. Secondly, the exhibition venues and their locations/distributions in the city were mapped separately. Eventually, it has been determined that the biennials, which were initially located in the historical city center of Istanbul, have gradually expanded their area and even started to evolve into an open-air exhibition spreading to the peripheries and distant parts of the city in recent years.

Keywords

Art • Biennial • Interaction • Transformation • Public Space • Istanbul

E. Eş (✉)
MSc City and Architecture at Ozyegin University, Istanbul, Turkey
e-mail: elif.es@ozu.edu.tr

G. Ozorhon
Department of Architecture at the Ozyegin University, Istanbul, Turkey
e-mail: guliz.ozorhon@ozyegin.edu.tr

1 Introduction

Urban-public-areas; are parts of the city where coincidences, interactions and experiences are experienced. Every activity that takes place or takes part in a public space changes the space, or in other words, reproduces the space. Art events in public spaces are among the most transformative of the spaces they are in. It is important to examine this transformation at the urban/art intersection and to understand the contribution of this transformation to the city and social life. This research will try to understand public space/art communication through the pluralistic structure of the Istanbul Biennale and will make visible the diversity of public space/art associations. This information will both provide a new perspective in terms of understanding the dynamics of urban-public spaces and will guide the art activities that will take place in the public space in the future.

2 Scope and Significance of the Study

Urban-public spaces, as important parts of cities and individuals' lives, are in a strategic position in terms of physical, social, psychological, economic, symbolic, aesthetic and political aspects (Akkar Ercan, 2007). Public spaces are the parts of the city where daily and social life is maintained, they are dynamic places where sharing takes place. Art in a public space can sometimes be a piece of work describing a public space, an artwork or artistic activity displayed in a public space, or it can sometimes constitute a public space as a whole (Worth, 2003). McCarthy (2006) defines public art as an art specific to a certain field; Sharp et al. (2005) define it as art that aims to relate not only to the physical but also to society.

Art in the public space provides a multifaceted interaction with the social aspect, leaves the place of the white cube and creates a new atmosphere of interaction in the city. Biennales differ from other art events in public spaces in that they are

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organized globally, using both aural and visual arts, and play an educational role by organizing workshops and conferences for artists. Thus, with the biennial spread to the city, the impact of art on the city and its citizens increases, and art becomes gradually effective in the city through public spaces and even transforms. Since Istanbul as a metropolis is a multi-layered city compared to other cities in Turkey, the biennials that have been organized in Istanbul for many years offer a potential in exploring the possibilities of urban/art interaction.

3 Conceptual and Methodological Approach of the Study

This study examines the role of art in the construction of public spaces, using the example of the Istanbul Biennale held from 1987–2019. It begins with a conceptual study of the city, public space, the transformation of public space, and the role of art in the transformation of public space (Fig. 1).

After the conceptual framework was established, the fieldwork was conducted in two parts (Fig. 2). In the first part of the study, with the qualitative data collection method; The historical process of the Istanbul-Biennials, its themes, curatorial expansions, the social events affecting the biennial and the places where the biennials take place have been systematically brought together and compiled through discourse analysis by scanning the articles, books and graduate theses and other publications related to the subject. In the 2nd part, the development of the Istanbul-Biennial relation is made visible with the chronological traces and mappings made. In addition to other sources of information, this stage used the official website of İKSV, the institution that organizes the Istanbul Biennial. The exhibitions organized in the extent of the biennial and the spaces used are mapped. Thus, in the thirty-two-year adventure of the biennial in Istanbul, it has been shown in which regions the route created by the exhibition spaces interacts with the city. The contributions of the biennial to the city, the transformation of unused spaces into exhibition spaces, and the contribution of open spaces are discussed. Trying to understand the potential of the Biennial to organize/renovate the public realm in Istanbul.

This study will contribute to the literature in terms of understanding the impact of art on the transformation of the city and will show the potential of this interaction. Thus,

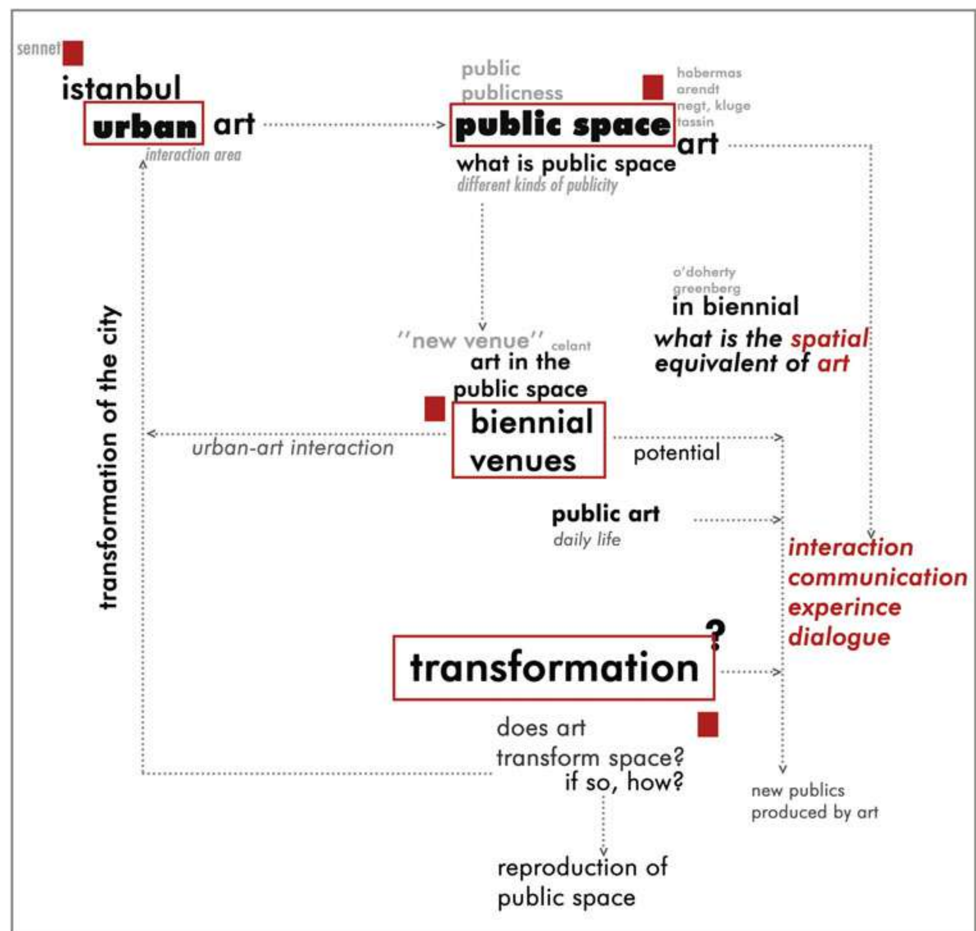

Fig. 1 Conceptual approach (*Source* Authors)

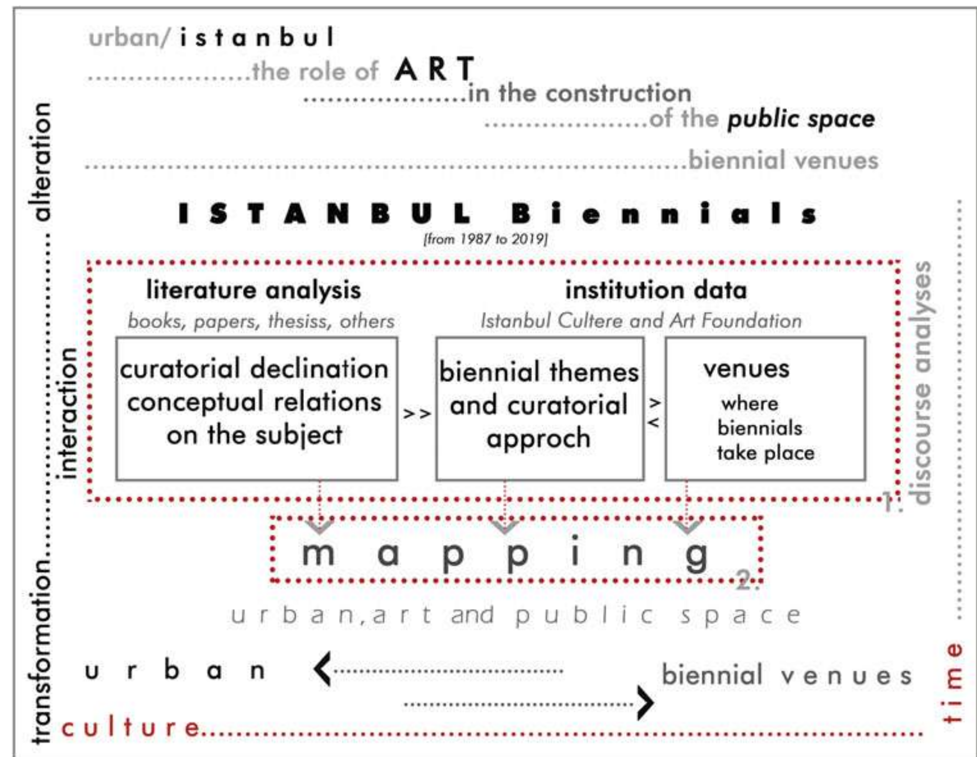

Fig. 2 Method of the study (*Source* Authors)

while producing the future scenarios of the city, it will be possible to evaluate these potentials.

4 Major Findings

The main findings of the research are:

Early period/to be in the historical center *(1–8)*

- The first two biennials; themes on contemporary art in old buildings are organized in the space of the historic peninsula. Although Istanbul started to be used as an art scene in the 5th-8th Biennials, it did not have a strong exist in the city. Therefore, it can be said that the relations of these activities with the city have been limited.

Second period/different trials *(9–12)*

- The 9th biennial gave up the use of historical places and moved its center to today's Istanbul. This event is a breaking point. The 10th Istanbul-Biennale began to see the city as a space of dialogue, and instead of forming a symbolic connection with the exhibition space, it followed a process by which the exhibition audience can also connect with the exhibition space. The 11th and 12th Biennials are organized as museum exhibitions, isolating themselves from the city.

Third period/sprawl *(13–16)*

- The 13th Biennial withdrew from the public space under the influence of the Gezi resistance movement to create an urban-space for itself. The 14th Biennale, with the most use of space, has spread to the city, turning the city into an open-air exhibition. Therefore, the 15th and 16th Biennials focus on the use of public spaces.

The spread of the biennial venues to the city

- The Biennale has begun to turn into a city tour by integrating various fields. Thus, the Biennale offers citizens a new experience by rethinking the city, exploring the possibilities of the city and different perceptions through travel. Therefore, it can be said that with the holding of the Biennial, the boundaries of public space have expanded, the power has also increased, and even public space has been reconstructed by art.

5 Conclusion

The Istanbul Biennale began on the Historical Peninsula with the theme of contemporary art in traditional buildings, and over time expanded around the city, adding various venues to its structure. The use of venues in the historical

city center (in the Historical Peninsula and Beyoğlu regions) stands out in the biennials. Historic buildings are sometimes used in Istanbul Biennale (e.g., Hagia Irene, Yerebatan Cistern), and sometimes used through renovations (e.g., Antrepo, Feshane). Sometimes biennales are placed on streets and squares to be more visible in the city. Biennale, where inert spaces in cities are reproduced, recreated and added to life through art. Without a stable place, the Biennale began to exploit the potential of the city dynamically, forging a stronger relationship with Istanbul over the years and expanding the area of activity from the center to the periphery of the city.

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Question of Agency: What Drives Divisive Space (Re)production and Spatial Transformation in the City of Polokwane?

Frank Moffat, James Chakwizira, and Sijekula Mbanga

Abstract

Cities are tension-ridden urban ecologies comprised of divided collections of social structures and multiple agencies whose interaction influences spatial transformation. The current development trajectory and spatial transformation witnessed in South Africa are perpetuating and manifesting in multiple forms of divided urban ecologies. This mirrors the (re)production of apartheid socio-spatial injustices and contradictions, manifesting multiple dilemmas in analogy with the re-imagined city as inscribed in post-apartheid progressive legislative and policy frameworks. This study moved beyond the usual inquiry limited in focus on spatial planning approaches and characterizing the nature of common threads of socio-spatial divisions among cities. It unravels the complex systems and factors that (re)produce and shapes the divisive socio-spatial qualities of cities and territories ecologies with a special focus on the City of Polokwane. Data were collected using quantitative and qualitative tools underpinned by the pragmatic philosophical paradigm. 507 questionnaires were analysed and seven key experts were interviewed using a semi-structured interview guide. Quantitative data analysis included descriptive statistics (measurement of reliability, validity, and normality) and exploratory factor analysis. Qualitative data were analysed using content analysis. Critical urban theory, spatial dialectics, and didactics theory constituted the theoretical framework and analytical approach in this study. The findings reveal that complex systems and agencies driving divisive space (re)production and spatial transformation in the city of Polokwane are as follows; (i) governance and policy drivers (ii) spatial characteristics/biophysical drivers; (iii) social and cultural drivers and (iv) Economic drivers. In conclusion, these urban ecologies present that the dialectical socio-spatial processes associated with divisive space [re]production in Polokwane are complex, making it difficult to redress a century of historical spatial injustices and segregation or attain the re-imagined post-apartheid cities in a short space of time.

Keywords

Urban ecologies • Spatial transformation • Space (re) production • Complex systems • Socio-spatial injustices

1 Introduction

Cities are tension-ridden urban ecologies comprised of divided collections of social structures and multiple agencies whose interaction influences spatial transformation. The current development trajectory and spatial transformation witnessed in cities after 28 years of gaining independence in South Africa is perpetuating and manifesting in multiple forms of divided urban ecologies. This mirrors the (re)production of apartheid socio-spatial injustices and contradictions, manifesting multiple dilemmas in analogy with the re-imagined city as inscribed in post-apartheid progressive legislative and policy frameworks. The question of divided cities is complex, multi-stranded, and manifests in various forms at different city scales. The focus of this paper is on understanding the question and complex systems of agency that shape divisive space (re)production and spatial transformation. The usual inquiry in most studies is inadequate and limited in focus on characterizing the nature of universal commonalities, and threads of socio-spatial divisions among

F. Moffat (✉) · S. Mbanga
Nelson Mandela University, Port Elizabeth, South Africa
e-mail: s226224619@mandela.ac.za

S. Mbanga
e-mail: sijekula.mbanga@mandela.ac.za

J. Chakwizira
North West University, Potchefstroom, South Africa
e-mail: 26878208@nwu.ac.za

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cities. In stimulating debate and literature centered on bridging this gap, this paper seeks to understand the complex structural systems of agency that shape (re)production of divided societies with reference to the city of Polokwane. This is critical for policymakers, academics, and other stakeholders in their quest to find new approaches and possibilities for intervention (Coetzee et al., 2014; Lauf et al., 2011; Mubiwa & Annegarn, 2013; Sadiki & Ramutsindela, 2002; Wray et al., 2013). The findings of this study conscientize local authorities on the implications of current processes in perpetuating contradictions and unintended consequences that are widening city divisions in the form of social-spatial inequalities, inefficiencies, and segregation.

2 Theoretical Approach and Literature Review

The classical theories grounded in the 1920s school of thought centered on Chicago city and ideas on ecological growth through, are criticized for running short on explaining the complex factors driving divisive space (re)production and spatial transformation in 21st-century cities (Bruyns, 2018; Thorns, 2002). Thus, this paper adopts a structuralist approach as employed by Landman (2006), Thorns (2002), and Turok (2014) guided by critical urban theory and spatial dialectics and didactics theory, to understand the complex processes and factors driving the (re)production of divided cities. In the perspective of critical urban theory (Brenner et al., 2012; Marcuse, 2012), and spatial dialectics and didactics theory (Halvorsen, 2017) this provides a stimulus for questioning rather than accepting the urban ecologies of division as congealed in contemporary cities.

Spatial transformation forces and agencies are (re)producing divisions in societies worldwide. The pattern that emerged from the literature reveals that the driving forces of this nuanced phenomenon are varied across cities. These include; property values, personal preferences, rapid urbanization, planning policy directions; gentrification, intensification (Ibrahim, 2017), conflicted political systems, structural divisions, global drive, housing, wars, real estate developers, private sector, central government directions, cultural divisions (Arandelovic & Bogunovich, 2014; Gornig & Häussermann, 2002), urban sprawl, automobile dependency, resistance and tensions, concentration, cultural norms (Early et al., 2015; Salmon, 2015), radical changes; externalities, lack of capacity, resource constraints (Rosário, 2016); administrative changes, polycentric developments, spatial targeting, (Zhang et al., 2018), colonial racial segregation (Kamusoko et al., 2013; Muronda, 2008). The nature and extent these agencies (re)produce divided ecologies differ with the context and developmental narrative of each city. These complex agencies can be grouped as political, physical, social, and economic agencies (re)producing divided societies (Moffat, 2021; Wheeler, 2003).

3 Methodology

Exploratory factor analysis (EFA) was employed in this study, because of its ability to help determine the least constructs that can parsimoniously explain factors that drive divisive space (re)production and spatial transformation in the City of Polokwane from a set of measured multiple variables. The population of the strategically selected areas in Polokwane comprised 78 885 households (Moffat, 2021; Statistics South Africa, 2011). The derived sample size was 588 households using Raosoft calculator with parameters set as 5% margin error, 98.5% confidence level, and 50% response distribution (Moffat, 2021). A total of 507 household questionnaires were returned and subjected to exploratory factor analysis. This sample size was therefore adequate for undertaking EFA, it is above the recommended sample size of 300 (Yong & Pearce, 2013). Measurement instruments were assessed for reliability as highlighted in previous studies by Al-Shehri (2012), Cronbach (1951), Hair et al. (2014), and for normality as highlighted in studies by Field (2009), Lee (2008) (± 2 skewness and $\pm$ 3 kurtosis). The factorability of the output matrix for each factor was scrutinized using the statistical procedures, Kaiser–Meyer–Olkin (KMO > 0.5) and Bartlett's test of sphericity (χ^2), $p < 0.001$ as highlighted in a study by Bai et al. (2015). Factors from the problem solution were extracted using a combination of the following methods: suppressing factor loadings <0.40, eigenvalues over the criterion of 1, and scree plot.

4 Major Findings

This section unpacks major findings on structural systems and agencies (re)producing divided societies.

4.1 Governance, and Policy Drivers

EFA findings from 17 questionnaire items yielded six factors as best fit problem solutions accounting for 66.38% of the variance in combination with governance-policy agencies driving (re)production of a divided society in Polokwane (see Table 1). This presents a similar pattern depicted in literature by Arandelovic and Bogunovich (2014), Salmon (2015), Zhang et al. (2018). Cities must avoid carbon copy initiatives, and policy bias, promote political buy-in and experiment with alternative approaches.

Table 1 Governance-policy drivers

Factors	Factor loadings	Eigenvalues (λ)	% of variance	Cumulative %
Governance processes	0.438–0.729	4.220	24.82	24.82
Development directions	0.516–0.644	1.969	11.58	36.40
Political and community influence	0.554–0.924	1.650	9.70	46.10
Development control	0.506–0.790	1.363	8.02	54.12
Land tenure system	0.578–0.796	1.055	6.20	60.32
Land administration and markets	0.486–0.587	1.031	6.06	66.38

Factorability examination: varimax orthogonal rotation method, KMO = 0.755, $\chi^2 = 1868.527$, $p < 0.001$

4.2 Spatial Characteristics/Biophysical Drivers

EFA findings from 9 questionnaire items yielded three factors as best fit problem solutions accounting for 63.53% of the variance in combination with biophysical agencies driving (re)production of a divided society in Polokwane (see Table 2). This concurs with Wheeler (2003), implying that high-income people live in better-built environments. Governments must redress this division by negotiating and buying land in peripheral areas and investing in improving conditions in low-income areas.

4.3 Social and Cultural Norms

EFA findings from 13 questionnaire items yielded four factors as best fit problem solutions accounting for 65.88% of the variance in combination with social-cultural agencies driving (re)production of a divided society in Polokwane (see Table 3). This corroborates the findings by Arandelovic and Bogunovich (2014), Ibrahim (2017), cities must harness the opportunities of these agencies, and promote redistributive justice, public awareness, partnerships, and municipal housing delivery accreditation.

4.4 Economic Drivers

EFA findings from 13 questionnaire items yielded three factors as best fit problem solutions accounting for 57.78% of the variance in combination with economic agencies driving (re)production of a divided society in Polokwane (see Table 4). This echoes that spatial targeting and concentrated investment highlighted by Zhang, et al. (2018) give birth to divided societies.

5 Conclusion and Implications

Polokwane just like most cities around the globe has committed itself to redress divisive space (re)production and spatial transformation. Yet, the socio-spatial inequalities

Table 2 Spatial-biophysical drivers

Factors	Factor loadings	Eigenvalues	% of variance	Cumulative %
Availability of land conducive for development	0.445–0.683	3.217	35.75	35.75
Living environment	0.452–0.659	1.400	15.56	51.31
Good weather	0.554–0.767	1.100	12.22	63.53

Factorability examination: varimax orthogonal rotation, KMO = 0.751, and $\chi^2 = 1021.023$, $p < 0.001$

Table 3 Social-cultural drivers

Factors	Factor loadings	Eigenvalues	% of variance	Cumulative %
Rapid urbanization	0.463–0.776	4.468	34.37	34.37
Availability of opportunities, and social facilities	0.557–0.704	1.921	14.78	49.15
Personal/cultural preferences	0.467–0.795	1.172	9.02	58.17
Housing development and safety	0.657–0.681	1.003	7.71	65.88

Factorability examination: varimax orthogonal rotational method, KMO = 0.827, $\chi^2 = 1775.973$, $p < 0.001$

Table 4 Economic drivers

Factors	Factor loadings	Eigenvalues	% of variance	Cumulative %
Attractiveness and affordability	0.619–0.713	4.512	34.71	34.71
Infrastructure developments	0.435–0.659	1.617	12.44	47.15
Employment opportunities	0.657–0.822	1.385	10.65	57.78

Factorability examination: varimax orthogonal rotational method, KMO = 0.833, χ^2 = 1636.601, $p < 0.001$

from apartheid-engineered planning are still visible several decades after gaining independence. Key conclusions from this paper reveal that complex urban systems and agencies which include governance processes, policies, economic, spatial/biophysical characteristics, and social and cultural norms are driving (re)production of divided urban ecologies and their manifestation in various forms. This signals that we are not doing enough and there are gaps in planning practice, and existing legislative-policy frameworks; if not addressed this has far-reaching implications on the widening divisive urban ecologies. Planners and policymakers must leverage on these agencies and the complex urban systems to find new opportunities, approaches, and alternative interventions.

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Rural Open Building: The Design of a House in Bushbuckridge, South Africa

Wihan Hendrikz and Amira Osman

Abstract

This qualitative study documents the design of a house in Bushbuckridge, Mpumalanga, South Africa that uses Open Building (OB) principles so that the house adapts to the changing needs of the family and maintains its intergenerational value. This is especially important to bridge the wealth gap from centuries of dispossession policies under colonial and Apartheid rule. This project uses two OB principles. The first principle is to ensure that the building's functioning is flexible to give the family greater agency over how they use and adapt the house to their changing needs. The second principle facilitates this by separating the structure and systems of the house into primary and secondary structures that can function independently from one another. The approach of this project is to centre the occupant in the design and construction process. It considers the house to be flexible and conceived by many authors. Based on this world-view, the authors use the following tools: a literature review on OB; an analysis of the project site and its context; developing a brief of the family's current needs; an analysis of the design's potential future scenarios; and the design for disentanglement. This way of working allows the family to have more creative design input as they can inhabit the primary level and make design decisions in the space, rather than making all the decisions on paper before construction. This paper applies OB principles in a low-income, rural house project to illustrate that they also have value for the architecture at a small scale, and how a house can be designed to ensure that it adapts to the changing needs and creativity of the occupant.

Keywords

Open building • Architecture • Rural house • Bushbuckridge • South Africa

1 Introduction

South Africans equate mass housing projects with the Reconstruction and Development Programme (RDP) houses. They are typically small single-room dwellings with a lavatory and sink to imply a kitchen. Although these projects house the homeless, they falter at addressing a fundamental divide in society: dignity and ownership. Their greatest failure is their design. The houses are too rigid to evolve with the occupant's needs and too poorly constructed to ensure intergenerational value. Architects and urbanists globally developed Open Building (OB) principles to focus on the occupant's agency to build. This paper illustrates the use of OB principles in a single-house project for a family in rural Bushbuckridge, Mpumalanga, South Africa and draws relevant implications for the design process in the broader architectural context.

2 Methodology

This qualitative study documents a house design (to be constructed in the near future) that uses OB principles to centre the occupant in its design and construction. It considers the house to be malleable and conceived by many makers. The authors use a literature review on OB; an analysis of the project site and its socio-economic context;

W. Hendrikz (✉)
Tshwane University of Technology, Building 11, Pretoria Campus, Staatsartillerie Road, Pretoria, South Africa
e-mail: wihanhendrikz@gmail.com

A. Osman
Architecture and Industrial Design, Tshwane University of Technology, Pretoria, South Africa
e-mail: osmanaos@tut.ac.za

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developing a brief of the current and potential future needs of the family as scenarios; and, a breakdown of the building elements based on OB.

3 RDP and OB

Housing projects in South Africa, most often RDP housing, whether large or small scale, are characterised by monotonous, inflexible housing. RDP housing is meant to help bridge the property ownership gap left behind by the dispossession policies of colonialism and Apartheid. Yet, in studies evaluating the residents' satisfaction with their homes, 43.5% were dissatisfied, which was "attributed to poor design" and attempts to minimise the construction cost (Moolla et al., 2011). Another study conducted in 2012 also reveals that approximately 95% of responding residents use their "personal income to enhance the quality of their houses" (Zunguzane et al., 2012). Occupants want to build, but they struggle to change these rigid houses to their needs.

This problem also occurred in post-war Europe and gave rise to what we now call Open Building (OB) principles. In 1961, John Habraken articulated a set of building principles for mass housing in Dutch in *de Dragers en de Mensen* (1961), which was officially published in English in 1972 under the title *Supports* (1972). He advocated for occupants can take ownership of the houses and change them to reflect their individuality and needs. Many architects and theorists adopted and further developed these principles. OB's aims are in response to poorly-conceived mass housing projects, where occupants cannot build a meaningful relationship with the housing environment. OB affords the building flexibility and affirms the occupant's agency to build by coordinating (a strategy better known as *disentangling*) (Kendall, 2016) the building elements into defined lifespans and competencies (*levels*) (Habraken, 1998, p. 22). It allows for a building to have various levels of change throughout its lifespan from different authors with different economic situations. In the Bushbuckridge project, these levels are the primary structure and the secondary structure. The primary structure supports the house and supplies the basic infrastructure. An institution funds the primary structure while professionals design and construct it. The secondary structure is easier for the occupant to construct and manipulate as their needs and economic circumstances change.

4 Bushbuckridge and Family

Bushbuckridge is situated in rural Mpumalanga, South Africa. It is a low-income community with 46% unemployed and nearly half of its population dependent on the government (Bushbuckridge Local Municipality, 2021, pp. 33–34). Bushbuckridge has distinct developments along its ridges, each with a different socio-economic architecture, ranging from middle-income brick houses, lower-income cement block houses, corrugated metal houses, and traditional houses. The project is situated in a lower-income section of the community. The family requires a house that accommodates all its current members, but it will soon change as some younger members move out. The house must be flexible to allow future options for the family.

5 Design and Theoretical Premise

Although the project is for a low-cost house, it must steer away from conventional low-cost designs such as RDPs. The project uses two design strategies that relate to OB principles. The first relates to how the house adapts for several foreseeable scenarios to give the family flexibility in how they use the house. The second strategy deals with its disentanglement to allow for different authors to work on separate elements of the house. This strategy also ensures the house's durability by spending enough resources on important structural elements and services.

6 Adaptability for Future Scenarios

The house is detached into three buildings that are connected by an inner courtyard. This configuration allows for multiple iterations: a single-family home with four bedrooms (Fig. 1); a family home with two bedrooms and a separate structure with one bedroom for a tenant (Fig. 2); and three separate dwellings which may function independently (Fig. 3). The family can reconfigure the house to suit their needs as the family evolves over generations.

7 Disentanglement

The load-bearing structure of the house has the greatest lifespan and requires the greatest technical competency, whereas the envelope and other space-defining elements need shorter lifespans as we can foresee them changing with time (Kendall, 1996). They need less technical competency from the occupant and allow for greater creativity in definition, materiality, and construction.

The design employs two levels of competency, the primary and secondary levels, whose design and construction will be dealt with independently. The primary level (Figs. 4 and 5) deals with the fundamental infrastructure that a professional contractor will construct. It is the level where most of, if not all, the institutional funding will be used to ensure quality workmanship. The building elements built in the

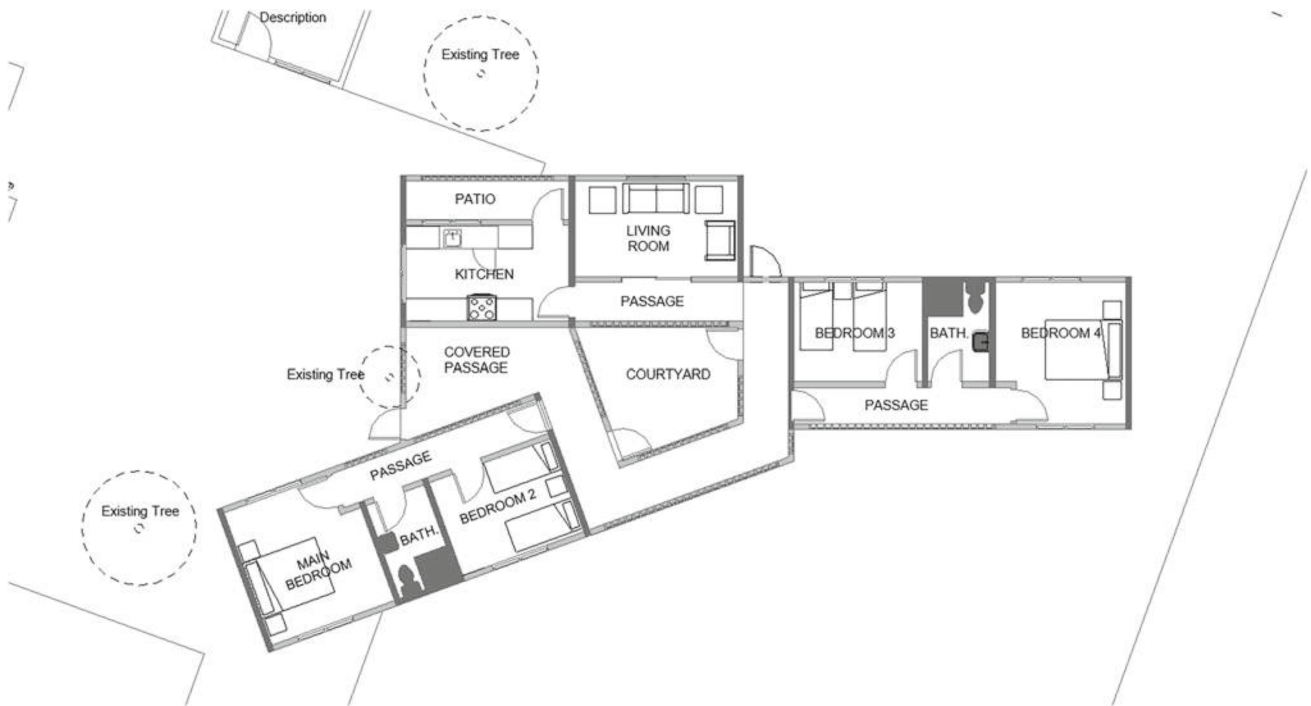

Fig. 1 Scenario 1: One house with four bedrooms. *Diagram by author*

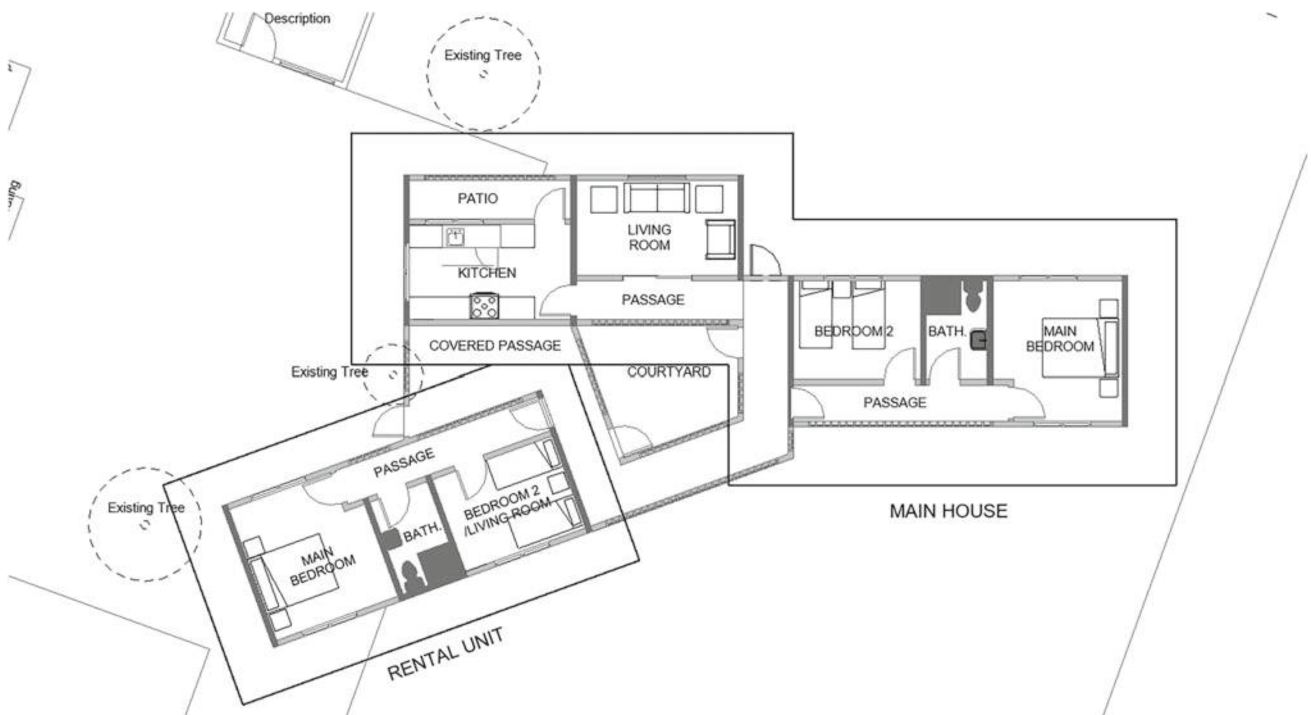

Fig. 2 Scenario 2: One main house with two bedrooms and one rental unit. *Diagram by author*

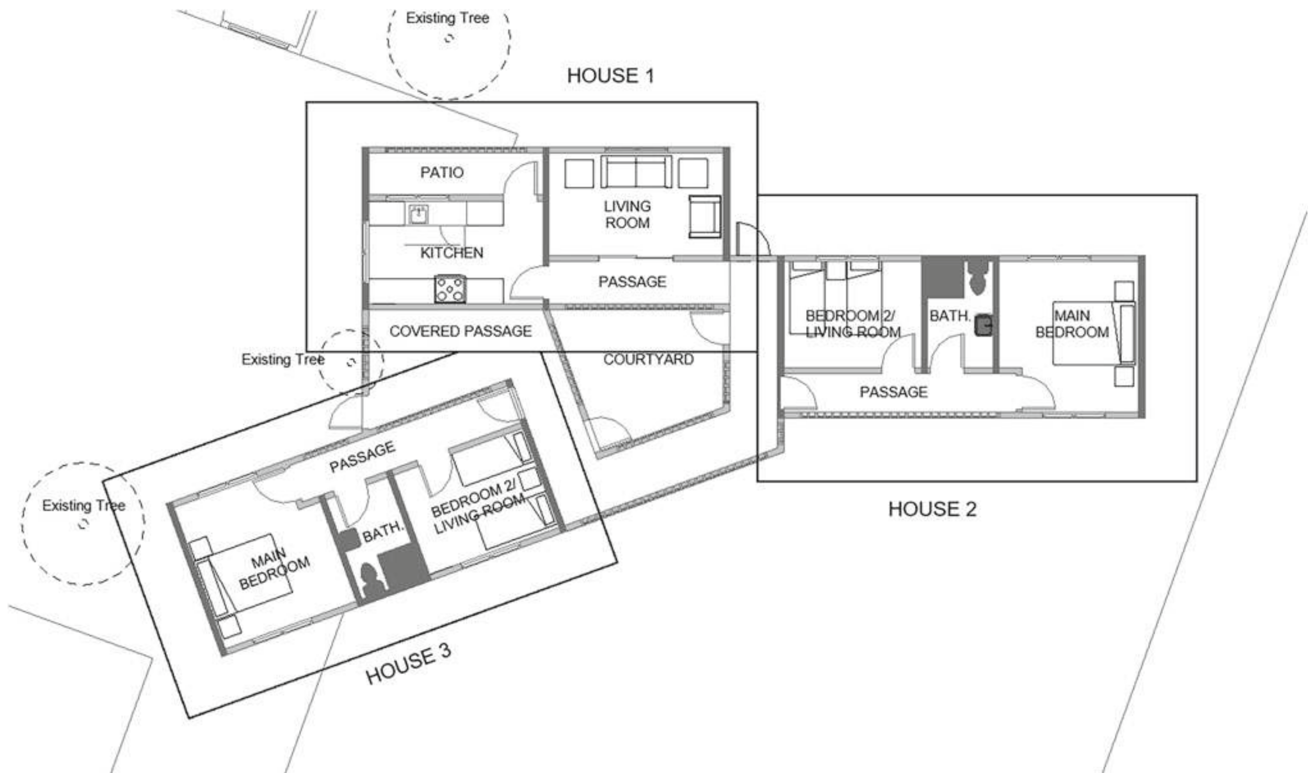

Fig. 3 Scenario 3: Three independent houses. *Diagram by author*

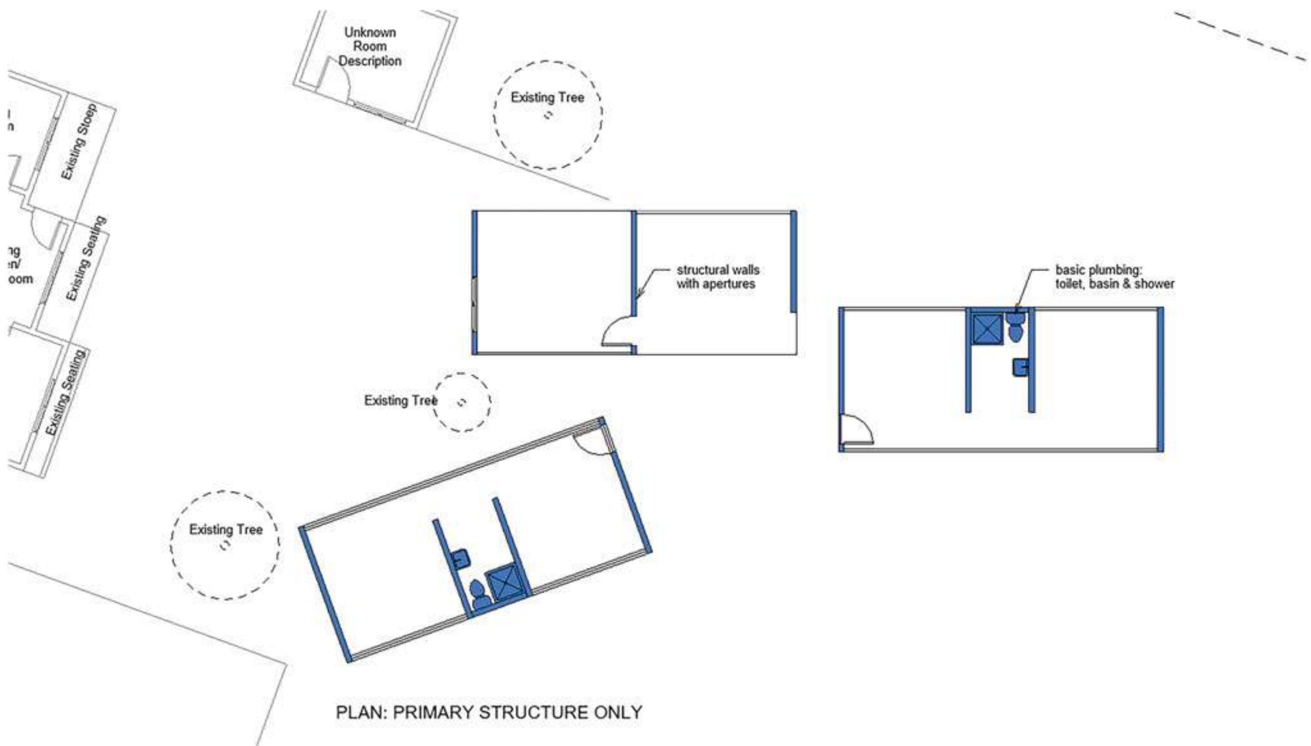

Fig. 4 Primary level (blue) completed. *Diagram by author*

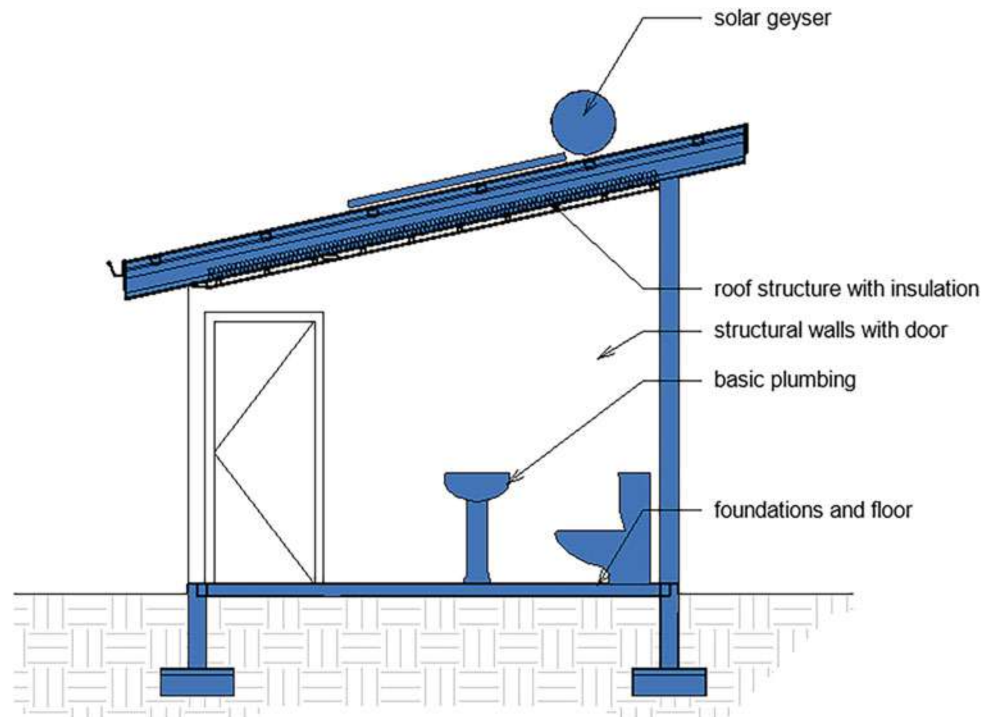

Fig. 5 Primary level: section through the *bathroom. Diagram by author*

primary level include the foundations; floors; structural walls—including their doors and windows; the roof; and basic plumbing—such as toilets, basins, and showers; as well as the infrastructure needed to run these facilities, such the solar geysers. The plumbing forms part of the primary level for this project as having it completed to high technical standard benefits the longevity of the house.

The materials in the primary level include concrete for the foundations and floors; cement blocks, plaster, and paint for the walls; timber, sheet metal, and insulation for the roof; as well as building elements like doors and windows. Along with these, services such as plumbing and water reticulation, electricity reticulation, and water heating are also worked into the primary structure. These services must be easily accessible yet positioned to not prohibit foreseeable changes in the house.

The secondary level (Fig. 6) deals with the rest of the space-defining elements of the architecture that the family and local builders will design and construct with assistance from the architect. These are the room-defining elements of the building that were not part of the primary phase including the non-structural walls and their doors and windows; the connecting passages—that unify the three buildings into what can function as one house; the privacy screens; and the necessary landscape infrastructure. The materiality of the secondary level can be more diverse as they do not serve structural purposes. It can more closely reflect the local materiality and include creative uses of natural and inexpensive materials.

8 Design Process Implications

The design process occurs on each level. The architect adopts OB principles along with the family's input to design the primary level. Once this level is constructed, the architect and the family embark on another, more detailed design process for the secondary level. Not only does this process allow the family to have more creative design input, but they can also inhabit the primary level to make more meaningful design decisions in the space, as opposed to making all the decisions on paper, before construction.

9 Conclusions

This paper documented the use of OB principles in a low-income, rural house project to illustrate that they are not only applicable to large-scale developments. It showed how a house can be disentangled to ensure that it can adapt to the changing needs of the occupant and that the primary structure of the house gets the necessary investment to ensure a

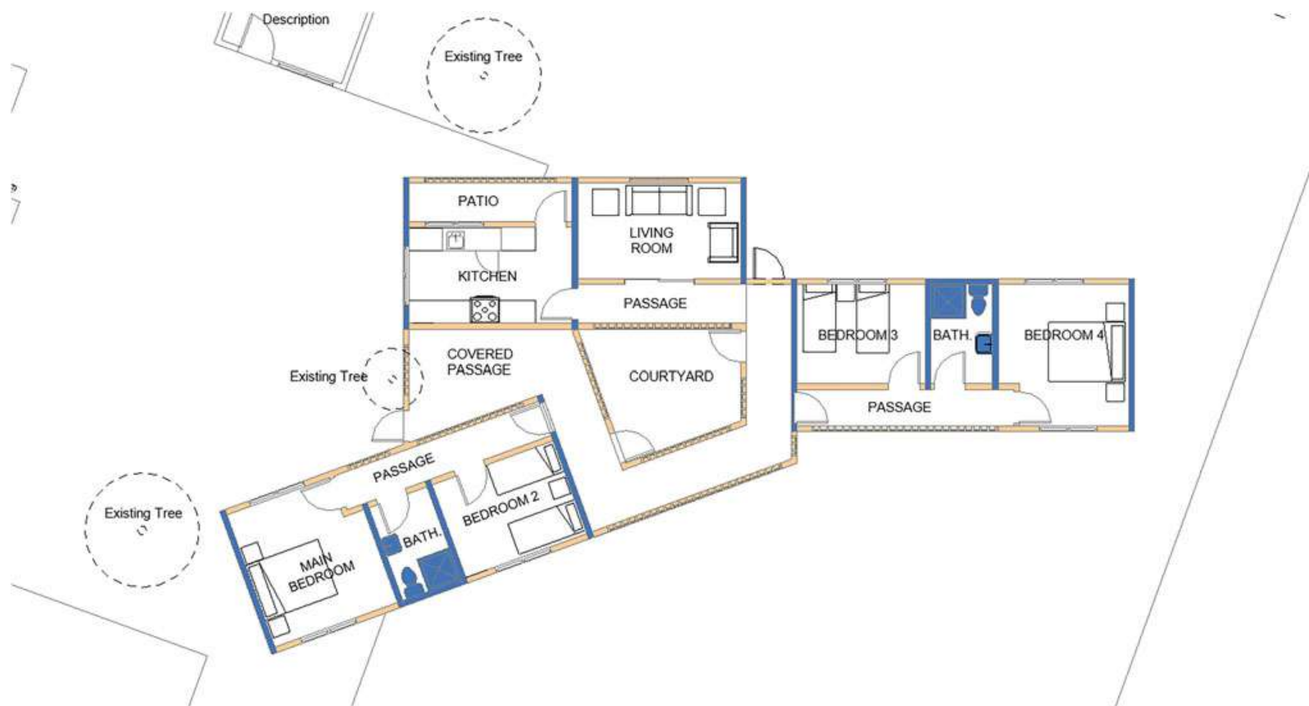

Fig. 6 Secondary level (orange) completed. *Diagram by author*

long-lasting structure and well-functioning services. By designing housing projects for the occupant to change to their will, we go some way to investing in dignified property ownership for people dispossessed under the colonial and Apartheid regimes, and who remain currently dispossessed under ill-conceived housing projects.

An extended version of this paper (Hendrikz & Osman, 2022) contextualises the Bushbuckridge project, and Open Building in general, as a sustainable building methodology where the occupant has a leading agency.

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