

ARTICLE

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**GOOGLE EARTH AUGMENTS VIEWING THE SPECTACLE
OF RUIN IN SELECTED 'IN-BETWEEN PLACES' OF
OLD INDUSTRIAL JOHANNESBURG**

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INTRODUCTION

South Africa is said to have the worst social inequality in the world, and examples of this inequality can be seen in the shack settlements, backyard shacks and hijacked properties in many parts of the city of Johannesburg. These unsafe and neglected 'interstitial places' are where the poor live in inadequate housing, squeezed between factory buildings, railway lines and motorways in the city. One of the challenges of capturing visual information about these settlements in these difficult settings is getting access to the areas where photographs can be taken. In Johannesburg, many areas are no longer safe for outsiders to visit. These unsafe, informal and often well-hidden areas can be considered 'interstitial' in relation to other areas where middle-income earners live in decent houses in pleasant suburbs with amenities. It is these 'unsafe' areas that the author wished to explore as a source of images and impressions for creative works.

This study takes an autoethnographic approach to exploring three neglected suburbs of Johannesburg, South Africa (Cleveland, Denver and Jepestown), which all date from soon after the first discovery of gold in 1886. Through this work, the author hoped to make sense of observed changes within the city and the proliferation of informal, survivalist settlements seemingly arising without town planning interventions. Many open areas and dilapidated buildings are now occupied by low-income earners, perhaps because city governance has been overwhelmed by the thousands of work-seeking migrants arriving in the city on an ongoing basis.

To explore the many visual indicators of poverty in these selected areas of Johannesburg, the author used Google Earth remote sensing images and Google Earth Street View to augment site visits. Google Earth is a valuable research tool, as one can quickly explore marginal areas that are not safe for outsiders to visit. One can also view activities that are not visible from the street – for example, illegal motor repair operations occurring behind high walls. Ethical issues abound in these acts of anonymous looking at the poor and destitute and finding the picturesque in neglected buildings, dismal living conditions and slums, as well as the privacy and surveillance issues relating to those being observed. This essay will dwell on some of the benefits of the Google

Earth virtual globe software, as well as the ethical discomfort that can result when observing people, poverty and informal living places – whether using remote sensing methods and driving around these areas with a camera, or using the images and perceptions gained for personal use as a source of inspiration for art making and fiction writing.

EXPLORING INTERSTITIAL SPACES

The concept of urban ruin, derelict ‘non-places’ and places that once meant something, but no longer do, is compelling for the author, as is the concept of ‘interstitial’ spaces that appear to have no practical use, but on closer examination are seen to be serving diverse functions for diverse groups of people.

Cities are composed of built-up areas and unoccupied spaces. The unoccupied spaces are often regarded as mere gaps in the urban fabric, or as abandoned spaces that should eventually be built on, yet cities cannot be fully understood without reference to the ‘interstitial’ areas that lie between developments.¹ Interstitial spaces can be undeveloped tracts, pieces of countryside, protected areas, brownfields, green corridors and other ‘urban gaps’ triggered by different factors and with diverse impacts, and can also be derelict former industrial areas.² Interstitial spaces, although often ignored, empty or inert, are never entirely abandoned, inactive or forgotten and, in Johannesburg, these underdeveloped or abandoned areas and buildings are occupied by the urban poor, making uncertain lives for themselves within the urban fabric. Black South Africans are particularly confined to unserviced or unsuitable areas in South Africa’s cities, and informal living and a poor quality of life have become a significant dimension of South African urban life, including in Johannesburg.

The recent Marshalltown fire – where 77 people died in the Johannesburg inner city in an overcrowded derelict building – has highlighted the harsh and unsafe living conditions of those living ‘in-between lives’ in unsafe and unsuitable places. The fire has prompted a belated call for urgent interventions to overhaul the city’s many informally occupied and highly problematic buildings to create decent, low-cost, rental residential living.³

The ultimate aim of this project, using site visits and Google Earth, was to equip the author to write both academic and popular articles, as well as fiction, using these areas and buildings as a locality. The present essay reflects on personal observations made of informal living arrangements during ten years of exploring three of Johannesburg’s inner city suburbs east of the Central Business District (CBD). These include the industrial areas of Jeppestown (including Wolhuter), south of the east–west railway line, and industrial Denver and Cleveland, all established soon after gold was discovered in 1886. Now more than 137 years old, these suburbs constitute a social and architectural palimpsest at a time of new use, informality, poverty and extraordinary need.

This essay considers how a free, online, virtual globe remote sensing tool, Google Earth, can be used to investigate selected ‘bad’ areas of Johannesburg, or indeed of any city. Through the use of Google Earth and the associated Google Earth Street View, it was possible to explore the urban neglect and degradation of Johannesburg without visiting these areas and to speculate on what these ruined places might mean for people leading ‘interstitial’ inner-city lives under appalling conditions. The author is writing from a position of white privilege and as an outsider to these suburbs, but also as a long-term resident of Johannesburg.

OCCUPYING INTERSTITIAL SPACES IN JOHANNESBURG

The poor in Johannesburg, who are largely Black South Africans, seem stranded: stranded in the transition to modernity, stranded between cultures, between belief systems and physically stranded in the periphery, between the rural and urban, between marshy mine land and rusting railway lines. The key factor promoting 'interstitiality' in South Africa is the very large gap between income levels, which is racially biased and of long standing⁴ and in Johannesburg is embedded in the spatial legacy of the city.

Owen Crankshaw explains that the post-apartheid period and its spatial form is characterised by a completely new division of labour that has caused new forms of racial inequality linked to skills and employment, and that the current racial inequality in Johannesburg is not the result of the persistence of apartheid-era causal factors. Rather, new factors have interacted with the historical effects of apartheid to produce new patterns of racial inequality and exclusion, visible largely as residential segregation along racial lines. The southern neighbourhoods of Johannesburg have become ghettos of exclusion for working-class Blacks and are typified by chronic unemployment. The northern suburbs of Johannesburg are white and middle class.⁵

Black persons, who make up most of the 'poor' in Johannesburg, have always had to endure 'in-between' lives as workers grudgingly needed for the gold mines, but not actually wanted as city residents. Historically, efforts to manage 'non-white' labour in Johannesburg focused on restricting where Black Africans could live or settle and preventing them from bringing their families to the goldfields.⁶ An outbreak of the plague in 1904 enabled a ploy that resulted in the 'clearing' of Newtown's slums and resettling people of colour much further west. Building hostels for single male mine workers was also symptomatic of the growing city not wanting Black people to settle permanently in Johannesburg with their families. Many of the gold mines along the Witwatersrand (the ridge where the gold reef is located) were already worked out and closed in the 1950s, with only a few struggling mines remaining, but workers' hostels and other slum and mixed-race areas remain as a legacy from these early times.

An historic feature of city planning in Johannesburg under apartheid was the use of degraded mining landscapes as a buffer zone to separate races and classes. These vast former mining lands are now filling up with both formal and informal housing, but still form poorly serviced peripheral areas and remain Black neighbourhoods. Also, while many foreign migrants seeking a better life make it past South Africa's borders, as undocumented immigrants they are forced to live on the 'fringes of society' in unsafe conditions.

STUDY METHODOLOGY

This study is an autoethnographic narrative that draws on the informal observations and perceptions that the author made over almost ten years (2013-23, except for 2020 and 2021 during the pandemic) while she was exploring three of Johannesburg's oldest inner-city suburbs east of the Johannesburg CBD. Trips were made randomly, about every three months.

Autoethnography is a qualitative research method that allows for personal, spontaneous and non-quantitative research findings that can include opinions and perceptions.⁷ Challenges in utilising this methodology include questions relating to data quality, legitimacy and ethics.⁸ In the present

study, the author sought to engage with her emotions in order to capture the drama of the city's 'ruined' landscape and, ultimately, to communicate scenarios that she witnessed or imagined are at play in the three study suburbs. It can also be important to introduce a psychological perspective to such scenario development, putting the human dimension at the forefront and recognising the principles of human cognition, emotion and methods of storytelling and communication and how they can drive changes in attitudes and behaviour in individuals and communities.⁹ All these elements feed into an autoethnographic research approach.

The study took as its key assumption that the lives of many low-income people newly arrived in the city of Johannesburg can be described as 'interstitial,' taking place in-between other lives, between other ways of living, between traditional and modern, between safe and unsafe, legal and illegal. The basic study method involved driving through the selected suburbs, observing the built environment, activities and people and taking photographs with a small camera (Canon Powershot SX610 HS).

The virtual globe software download, Google Earth and Google Earth Street View, were used to supplement the site visits, but also to plan new areas to visit. A basic literature scan was also performed to add context to what was seen. The Street View imagery was updated frequently, with 2023 images available for some localities.

SOFTWARE FOR LANDSCAPE VIEWING

Google Earth, a 3D virtual globe constituting an interface with the planet, was publicly released in June 2005. The software has attracted widespread public use and attention due to its ability to provide views of landscapes in fairly realistic three dimensions, using a combination of digital elevation models and satellite imagery. One particular advantage is that it is directly accessible to a wide range of users. There are broadly two groups of users – one comprising scientists and experts from various disciplines, utilising the software to contextualise their work, and the other comprising lay users who can freely access these tools over the Internet and potentially interact in new ways with spatial images.¹⁰

Google Earth is free, easy to use, requires no special remote sensing skills and 'democratises' landscape visualisation for millions of viewers. There are, however, concerns about Google's monopoly of the digital map industry and the fact that Google can use search results for their own corporate interests. However, mapping systems like Google Maps and Google Earth can be beneficial by providing accurate spatial data quickly to large numbers of people. There are many philosophical and practical issues arising from the development of this new, easily accessible map technology which are beyond the scope of this essay.

While Google Earth itself is based on satellite images, the Street View option provides high-quality photographic images taken at street level. Google Earth Street View requires that the Google Earth vehicle and its camera can physically get to places, and there are some places that cannot be viewed. As well as virtual globe software like Google Earth and Google Earth Street View, there are many other types of software available for viewing and analysing complex natural or urban

landscapes, including aerial photography; Geographical Information Systems (GIS), which deploys remote sensing and physical data; software programmes like World Wind, ESRI's ARCGIS Explorer, UTOOLS and LANDIS and map-making software like Lidar, but most are subscription-based and suitable for large projects.

The use of virtual globe software like Google Earth has extended the scope for the impersonal viewing and easy recording of landscapes, people and settlements, with resulting ethical challenges. Google Earth has been seen as a panoptic viewing technology that leaves no voice to those being viewed.¹¹ Google blurs out vehicle number plates and the faces of persons in Street View images to ensure privacy.

This study also made use of the City of Johannesburg's property zoning platform, available at <https://ags.joburg.org.za/cgis/index.aspx>, in order to identify the zoning of the derelict properties viewed during trips to the study suburbs.

THE THREE STUDY SUBURBS IN JOHANNESBURG

The City of Johannesburg Metropolitan Municipality, in Gauteng Province, is South Africa's most populous city and 21.7% of its 5.7 million residents live in informal settlements.

The study investigated three of Johannesburg's oldest inner-city suburbs – Jeppestown (Sub Place 798015115, Census 2011, but including Wolhuter which is a separate census sub-place), Cleveland (Sub Place 798015117, Census 2011) and Denver (Sub Place 798015118, Census 2011) (Figure 1) – and examined buildings, streets, signage, open places and the visible signs of neglect and poverty. These industrial suburbs are on the eastern side of the Johannesburg Central Business District (CBD) and were established soon after a gold-bearing geological reef was discovered in 1886. Mining gold led to the establishment of the city of Johannesburg.

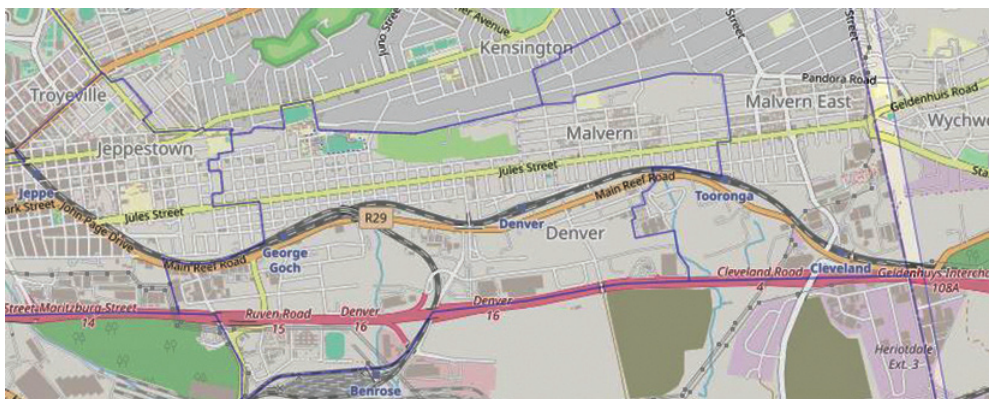


Figure 1. Map of the study areas, Jeppestown, Denver and Cleveland. Source: Wazimap.co.za.

In Wards 61 and 65, encompassing Jeppestown and Denver, 80% and 85% respectively of residents are South Africans; 44 % and 46% respectively were born in KwaZulu-Natal; and 55% and 60% respectively speak IsiZulu as their home language. Cleveland is part of Ward 118, where English is the major language spoken; 67% of residents were born in South Africa and 74.8% are South African citizens.¹² In two of the three study suburbs, the predominant language is Zulu, indicating inward migration from Black South Africans, rather than by foreigners.

The three study localities were selected because they are notorious for having suffered years of decay and also because, although they are industrial areas, they exhibit four 'crisis' characteristics of informal residential housing in Johannesburg: informal shack settlements, backyard dwellings, hijacked inner-city buildings and all-male worker hostels (Census 2011). These three areas are also accessible via a 15-minute drive from the author's home in one of Johannesburg's more affluent suburbs. While Jeppestown is moderately well covered by research writing,¹³ Denver¹⁴ and Cleveland have not attracted much inquiry.

Denver and Cleveland are industrial areas with both old and new factory buildings and warehouses, as well as very old shops, shabby residential areas and informal settlements.¹⁵ Cleveland was established in 1903 and named after Cleveland, Ohio (US), as the suburb was used for the storage of mining equipment by American firms.¹⁶ Denver was zoned as a residential township in 1898 and named after Denver, capital of Colorado, again because several American mining machinery firms built offices there. Denver and Cleveland are notable for the squatter camps (informal settlements) clustered between factory buildings and around the male workers' hostel. Denver and Cleveland are located in the industrial areas south of the east-west railway line. Jeppestown was originally a residential area for the white middle classes of early Johannesburg, but is now a mixed-race area and made up of mixed residential, commercial and industrial zoning, with most residential and commercial property to the north of the railway line and the industrial areas lying south of it. The southern industrial area of Jeppestown was investigated in this study, not the more residential north.

A SITUATION OF CRISIS IN JOHANNESBURG

The new South African Constitution of 1996 cancelled all remaining legal instruments of apartheid and affirmed universal rights to human dignity and equal protection under the law. The ending of the apartheid system of racially based spatial segregation in South Africa brought about massive social changes in the country. Those changes have been particularly pronounced for Black South Africans because they were the most disadvantaged group under apartheid. Geographical mobility, previously restricted by apartheid migration control laws, is now legally open to everyone.¹⁷ However, the new democratic South Africa inherited the vast challenges of racially based inequality, poverty and unemployment, which have taken much longer to address, with Black South Africans still the most disadvantaged group in the new democracy.¹⁸

In 2023, the City of Johannesburg Metropolitan Municipality is South Africa's most populous city, with the population estimated at just over six million, and with 21.7% of its residents living in poverty in neglected and unsafe areas.¹⁹ Johannesburg is also the economic hub of South Africa and is the destination of job-seekers across the country, as well as economic migrants and asylum seekers from the rest of Africa.

There have been many recent research studies investigating the ways that the city of Johannesburg has changed in the post-apartheid era, with most reporting that informal settlements and poor quality of life has become a significant dimension of urban life.²⁰ Evidence of a widespread housing crisis can be seen in the mushrooming of informal settlements near industrial areas, or on vacant, under-supervised, dangerous or unsuitable pieces of land, as well as in the proliferation of backyard shacks.²¹ This situation is reminiscent of trends throughout the developing world, where rapid urbanisation and the urbanisation of poverty are marked features.²²

The consequences for safety and security, crime and mental health of living in inadequate housing are well known.²³ There is a close relationship between poverty, social stress and mental health problems and, in some cities like Glasgow, where the issue has been studied in depth, there are a host of indicators that link poverty and poor mental health, including lower mental well-being and reduced life satisfaction, and higher rates of common mental health problems, higher prescribing figures for anxiety, depression and psychosis and greater numbers of hospital admissions for psychiatric conditions.²⁴ In South Africa, the same health outcomes of poverty exist, but are less well recognised.²⁵ The mental health status of persons living in unsafe shack settlements and hijacked inner city buildings has hardly been explored.



Figure 2. Informal street eatery, corner of Janie and Wolhuter Streets, Jeppestown.
Source: Google Earth Street View, 2023, <https://earth.google.com/web/search/Jeppestown+Johannesburg> (accessed 15 August 2023).

SURVIVALIST ECONOMIC ACTIVITIES

Visible human poverty is on every corner and open space of the inner-city areas visited, revealed by both Google Earth Street View and site visits. The study areas are marked by a proliferation of everyday, potentially unlawful, activities, mostly driven by survivalist needs. In Jeppestown, Denver and Cleveland, examples of these activities, which are of questionable legality, include water theft, electricity and firewood (tree) theft and the sale of illegally cut trees as firewood, as well as more organised activities like the many 'Cash4Scrap' dealers who buy up scrap metal of dubious origins or the automobile 'chop shops' behind high walls processing wrecked vehicles for resale. There are

also many taverns and kiosks which may or may not comply with hawker or health regulations or urban zoning regulations, selling cooked food and alcohol. Persons involved in illegal or semi-legal activities do not want themselves or their activities to be photographed, yet their activities can be seen clearly in Google Earth Street View (although they may be unaware of this) (Figure 2).

TYPES OF INFORMAL AND CRISIS DWELLINGS

The most visible aspect of the study areas was the way that existing decrepit factory and warehouse buildings have been put to use for residential purposes, even though they remain zoned for industrial use. Also present are informal settlements composed of self-built shacks on public open spaces and road pavements, and the proliferation of backyard shacks of various quality in the yards of formal buildings. Informal shack settlements have also sprung up around the former all-male hostels associated with gold mining to provide accommodation for the men's families (Figure 3). The Junkers informal settlement in Cleveland (Figure 4) is notorious for violence, and church volunteers will not enter this area (informal comment from church volunteer).



Figure 3. Google Earth remote sensing view of the Denver Men's Hostel (top right) and associated informal settlement, as well as nearby industrial buildings. All this land is zoned Industrial 1, yet now has an informal residential component.

Source: Google Earth 2022, <https://earth.google.com/web/search/Denver+Johannesburg> (accessed 15 August 2023).



Figure 4. The Jumpers informal settlement, Cleveland, located 'in-between' industrial buildings on the site of the Jumpers Deep Gold Mine Ltd, East Incline shaft, now defunct.

Source: Google Earth 2022.

BACKYARD SHACKS

In Cleveland, Denver and Jeppestown, many backyard dwellings are deliberately hidden at the back of formal houses or behind high factory walls; although it is often almost impossible to see some of the older backyard dwellings, Google Earth reveals these hidden urban settlements. While more recently built dwellings in Cleveland, Denver and Jeppestown are no longer hidden in backyards, they are likely to be illegal and lacking planning permission (Figure 5). Backyard shacks are a major feature of informal living in Gauteng province.²⁶



Figure 5. Here to stay: permanent, upper-storey addition in Karl Street near the Wolhuter Men's Hostel. The addition is likely to have no building approval but is not hidden, indicating a lack of municipal oversight.

Source: Google Earth Street View, 2023, <https://earth.google.com/web/search/Jeppeshtown+Johannesburg> (accessed 15 August 2023).

URBAN BLIGHT AND HOSTELS

During the late colonial and apartheid periods, mining compounds and migrant labour hostels formed a key element of the migrant labour system serving the goldfields. The all-male hostels in Johannesburg were originally designed as tools of control and repression of Black workers and have become synonymous with violence, overcrowding and squalor.²⁷ The now-ancient hostels continue to provide low-cost accommodation for male work-seekers, but not for their families, who contrive to live in informal settlements in the area around the hostels (Figure 3). The Wolhuter Men's Hostel (Figure 6) is different in that the men's families and other persons live in semi-derelict factory buildings nearby. The impact of the hostels has driven away investment and potential improvements in the area, and while most of the buildings are severely neglected, they are still lived in. Some appear to be hijacked buildings. The streets around the Wolhuter hostel are also severely blighted by neglect and informal activities (Figure 7).

INDUSTRIAL BUILDINGS AS RESIDENTIAL ACCOMMODATION

Many of the original 1950s factory and warehouse buildings near the Wolhuter Hostel appear hijacked, showing signs of extreme neglect, and are likely to be illegally run as residential buildings by criminal elements (Figure 8). The hijacking of buildings has become an intractable problem for the city in terms of the way that they 'blight' the inner city landscape, the loss of municipal revenue, as well as the negative social consequences of overcrowding and a lack of safety in these buildings.²⁸



Figure 6. View of the prison-like Wolhuter Men's Hostel, looking east along Wolhuter Street. Several thousand men live in this hostel.

Source: Google Earth Street View, 2023, <https://earth.google.com/web/search/Jeppeshtown+Johannesburg> (accessed 15 August 2023).



Figure 7. Taxi washing in Ford Street, opposite Wolhuter Men's Hostel. The water main has been illegally connected to a tap, resulting in 'water theft.' Source: Google Earth Street View, 2022.



Figure 8. A 1950s factory building on the corner of Hanau and Janie Streets, Jeppestown. The structure shows many signs of being a hijacked building, notably spectacular neglect. Shacks have been built on the roof. Source: Author's image, 2022.



Figure 9. An illegal shack settlement on a suburban road, Concession Street in Jeppestown, north of the railway line. Source: Google Earth Street View, 2022. <https://earth.google.com/web/search/Jeppestown+Johannesburg> (accessed 15 August 2023).

HIJACKED PUBLIC SPACES

Interstitial urban spaces newly invaded by informal settlers are evident in the cul-de-sac streets abutting the railway line that runs through Jeppestown, as well as in areas where buildings have been demolished. There is washing hung up between the pavement trees, fresh produce is sold from informal kiosks and small children are playing in the street. There is no municipal water provided or waste collection. These streets are public assets that appear to have been informally 'privatised' by new 'street lords' with impressive cars (author observation) (Figure 9).

A SENSE OF DANGER IN EXPLORING DILAPIDATED INNER CITY AREAS

Some parts of Johannesburg and the greater Witwatersrand are dangerous places for local residents and outsiders alike, with the Gauteng City-Region Observatory (GCRO) finding in a 2017/18 Quality of Life Survey that one of the biggest community problems identified by residents of Johannesburg is crime. Most crime hotspots are in the inner city.²⁹ Other risks for residents and outsiders alike include the poor state of the roads, rampant vegetation at the side of the road where criminals can hide, non-existent lighting at night and non-functioning traffic lights. In the context of the present study, hostility can result from persons unwilling to be observed or photographed by a stranger – for example, undocumented migrants who fear being discovered and deported. The free 3D Virtual Globe software download, Google Earth and Google Earth Street View became important tools for the author to gain an understanding of the spatial layout of particular areas before visiting in person. For more formal research projects, negotiations with ward councillors and local leaders would enable access to buildings in these areas. Buildings like the men's hostels cannot be accessed without a police escort.

OUTRIGHT CREEPY RUINS

The author often felt unsettled by poverty and the ruined and apparently hostile inner-city urban landscape, as well as by imagining the precarious lives of those living in deprived areas, the impacts of criminality and undiagnosed mental health conditions. Francis McAndrew and Sara Koehnke argue that a defensive "creepiness detector" is engaged in response to the strangeness of unsafe places.³⁰ For them, a sense of the creepy is a type of anxiety aroused by the ambiguity of whether or not there is something real to fear in a given situation, and the nature of that threat. The author found this unease and anxiety to be a valuable factor in the creative process, possibly through invoking additional observational as well as instinctive alertness. The author also experienced 'creepiness' because of the perceived threat of illness or danger emanating from the unsafe and unhealthy buildings surveyed. Some of the massive factory buildings in the study areas are spectacularly neglected, gloomy and rather frightening, invoking 'zombie apocalypse' imaginings as one speculates on what type of creatures would tolerate such damp, rotting and potentially spore-contaminated conditions (Figure 10). Creepiness, along with horror and the macabre, can be an aesthetic in art and literature. Tim Haynes' book, *Hollow City: Stories of Hope and Horror from Joburg's Inner City*, is one example of the fascination elicited by Johannesburg's extreme urban ruins.



Figure 10. Gloomy ‘monster’ building. This factory building on the corner of Browning and Wolhuter Streets, Jeppetown, is visibly damp, with vegetation growing out of the brickwork. An open side door hints that people may be living in this horrible place.

Source: Google Earth Street View, 2022 (accessed 15 August 2023).

THE DEFERRED EMERGENCY

Wilhelm-Solomon warns of the “deferred emergency of occupation in inner-city Johannesburg” and asserts that there is indeed a humanitarian crisis in the Johannesburg CBD. However, it could be said that this crisis extends more widely than the CBD, as the author viewed during her explorations. The recent fire at a building in the Johannesburg CBD, 80 Albert Street, where 77 people were burned to death, may accelerate changes in the way that old buildings are used for low-income earners and undocumented foreign residents, hopefully leading to improvements in living conditions in abandoned or neglected buildings in Johannesburg.

Industrial Jeppetown, south of Jules Street and the railway line, as well as the contiguous suburbs of Denver and Cleveland, constitute a bizarre and extreme urban environment, perhaps a setting that one would expect to find in a dystopian city affected by war or some other disaster. Throughout this informal study, the author took personal risks to view derelict, ruined and neglected buildings in the inner-city study areas, yet she was only able to see the outsides of these buildings and the general urban landscape, as it was not possible to enter any of the buildings. The depth and character of urban ruin in these areas is tragic, almost unbelievable, and ominous in terms of the potential for discontent and unrest. It was unsettling to confront the reality of Black poverty in the study suburbs, especially considering that affluent white areas are not far away.

Visiting these areas in person, or using Google Earth, but taking a ‘crisis and emotive’ perspective, there are many sights that astonish and appal, and one quickly understands that these sights are signs of economic stress and municipal neglect and are not part of a ‘normal’ urban residential

environment. In fact, these are not even residential areas, being zoned industrial. There are no local churches, clinics, libraries, very few crèches or schools and no banks, ATMs or modern shops. It cannot be a good thing that so many people are living in this disintegrating environment, not to mention the circumstances creating unemployment that force Black people to live in these areas.

Many of the buildings in the three industrial suburbs are filthy, broken, dilapidated, looted, vandalised, ruined or just plain neglected – they are not suitable for human habitation, yet people who are unable to improve their circumstances live there. Women and small children are among the residents of these buildings. Living in these buildings must impact human physical and mental health. I can only imagine the internal environment of these buildings – cold, dark, damp, infested with vermin, with nowhere to lock up valuable possessions, with ‘creepy’ and violent people on the loose, with persons coming and going day and night, drug-taking and prostitution. This must be a very unpleasant and stressful living environment.

However, despite this extreme poverty, the existence of built infrastructure like roads, water mains, drains, street lighting and solid buildings, as well as proximity to a passenger rail system and motorways, is an advantage for people living here, compared to informal settlements on the periphery of the city which have no services or built infrastructure assets (personal observations). In the study area, all properties are owned, with none listed as abandoned, meaning that property investors may be speculating on the long-term improvement of these areas and will eventually demolish the buildings they own.³¹

CONCLUSION

The free virtual globe Google Earth software allowed the author to gain insights about derelict, impoverished and unsafe areas in Johannesburg before going there, or even instead of visiting in person. However, with the use of Google Earth and Google Earth Street View, the time lapse involved meant that the virtual representations often differed from what was seen during a site visit due to changes in the landscape including demolitions, new buildings and roads and seasonal differences. There were also differences in time between the Google Earth satellite images and the corresponding Street View images, notably seasonal differences. If no site visits are to be made, care must be taken to recognise these temporal and seasonal limitations before the remote images are used in landscape planning and other decisions or to form assumptions based on the Google imagery alone. Even for creative purposes, site visits would be essential to augment assumptions, emotions and perceptions garnered from Google Earth images.

The strong visual spectacle of the blighted, crisis landscape in the three Johannesburg suburbs studied has the potential to provide ‘dark’ inspiration for artists, as well as for writers working in crime fiction, Gothic fiction or dystopian and apocalyptic fiction, or the speculative fiction genre more broadly, that requires a spoiled urban backdrop with complex historical, racial, political and socio-economic overtones. Finding the picturesque or tragic in neglected buildings and trying to make visual sense of the human tragedy underway in old industrial inner-city Johannesburg evokes a range of emotions, some of which can be harnessed for art-making and writing, or utilised in urban activism to campaign for a more sustainable and liveable city through different creative forms including film.

Sue Taylor (ORCID ID: <https://orcid.org/0000-0002-0451-2674>) holds a PhD in Plant Biotechnology from the University of KwaZulu-Natal, South Africa. She is a development consultant with experience in researching, writing and lecturing about sustainable development, climate change and social development issues in South Africa and Africa. She has worked in the biotechnology research sector, in nature conservation and in the NGO sector as a climate change activist, and more recently as a science writer. Her current interest is cities, slums and urban climate change adaptation.

Dr Taylor is one of the editors of a book on Phuthaditjhaba, an informal city in the former homeland of QwaQwa, South Africa, published in January 2023, and has also written one of the chapters discussing greening as a way of climate preparedness for towns and cities. The book is called *Sustainable Futures in Southern Africa's Mountains: Multiple Perspectives on an Emerging City*, Editors: Andrea Membretti, Sue Jean Taylor, Jess L. Delves. Springer 2023. The book is available with open access at <https://link.springer.com/book/10.1007/978-3-031-15773-8>.

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