RELINKING KLIPTOWN

prepared by Subaltern Planning

C40 Reimagining Cities

Soweto, Johannesburg

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Manifesto

Subaltern Planning echoes our commitment to design a project that meets the development objectives of Kliptown while reflecting on the social history of the area. Acknowledging *the value of existing lifestyles and infrastructures*, including informal and "non-formal" practices, our proposal aims at revitalising Kliptown as a transit-oriented development while empowering local communities.

This plan sees Kliptown as not just a redevelopment project, but the foundation of a *resilient, inclusive community that thrives for generations to come*. This is why we prioritise long-term sustainability in every aspect of our plan.

We focus on *durable infrastructure, regular and inclusive maintenance*, and the *creation of mixed-use spaces* that foster *vibrant economic and social life. Security, accessibility, and public safety* are embedded in the design to ensure that public spaces remain welcoming and functional. We understand that interventions should be designed to support social, economic and ecological viability at once.

Above all, we recognise that the success of this project depends on the active involvement with and ownership by Kliptown's residents. By engaging with the community, we aim to ensure that the redevelopment reflects *local needs, strengthens social ties, and builds lasting pride in place.*

Context

Kliptown faces a set of improvement opportunities in providing dignified and sustainable housing for its residents. Originally established on former large agricultural farms, Kliptown is the oldest urban settlement in Johannesburg that accommodates various ethnic groups, making it a unique example of social integration under segregationist policies. This legacy remains symbolically important today, yet the area continues to suffer from deep-rooted spatial and infrastructural inequalities.

The site comprises various suburbs including Kliptown, Winnie Camp, Freedom Charter Square, and Pimville Zones 4 and 8. These areas present significant variation in population density, types of housing and exposure to environmental risks (mainly flooding), and connectivity, requiring tailored policy responses.

Structure of the strategy

The project was designed in response to the municipal objective to transform the site into a green transit-oriented development, integrating a Clean Air Zone. The strategy revolves around three main aims:

1. **Nodal improvement of the public realm** aiming at improving public spaces, with a specific focus on climate risks
2. **Enhancement of sustainable transport and connectivity** to support communities, fostering local economic development as well as community well-being
3. **Upgrade of informal housing** while improving air quality and provision of housing opportunities

The Clean Air Zone
Air quality is a major concern in Kliptown. The main sources of air pollution include :

- Vehicle emissions
- Domestic fuel burning
- Waste burning

Although generally focusing on traffic emission, the implementation of a Clean Air Zone in Kliptown needs to consider the broader causes of air pollution. Therefore the Clean Air strategy aims at tackling traffic emission as well as energy and waste management issues that highly influence levels of air pollution.







Screengrabs from Kish My World YouTube tour of Kliptown (2024)

Nodal improvement of public realm and biodiversity enhancement

A nodal approach to small-scale public realm development will *create vital pockets of green and social infrastructure* within the informal settlements. This will take an *incremental approach*, prioritising the most pressing matters and enabling residents to take ownership of each stage of the process.

1. Safety and Accessibility

Debris will be cleared from key pedestrian routes, with *solar-powered streetlights* installed to improve visibility and safety. These lights will also provide Wi-Fi connectivity to nearby homes. *Modular, locally-made adobe street furniture* will be placed at key junctions, offering resting spots, encouraging social interaction, and supporting those with limited mobility. Vernacular material use will *reduce embodied carbon*, reinforce *circular economy principles* and *community agency.*

2. Connectivity

Permeable paving will be used to connect nodes and improve walkability and stormwater absorption whilst retaining biodiversity. Along these upgraded routes, we will install essential infrastructure: *drainage channels to manage flood risk*, and sanitation networks connecting to *nodal biocentres*. These centres will serve as *community hubs*, providing access to clean energy, hot water, and shared kitchens through the processing of organic waste. Over time, this infrastructure will extend to individual homes, ensuring long-term service delivery and resilience.



Improvement of safety and roads before addition of street furniture, biodiversity and decorative elements.

3. Identity

In order to create a stronger *sense of identity* for the individual informal neighbourhoods, events will be held for residents to *name their streets* and take ownership of the movement network. This will be formalised through *new signage* to help with wayfinding through the settlements. Additionally, schools and community groups will be engaged in an art programme to *create tile moulds for decorative adobe tiles* (See Appendix) which will clad new street furniture and create a cohesive visual identity for the community.

4. Further Extension and Adaptability

Once sanitation infrastructure is extended to individual units, the *biocentre buildings can be adapted into public infrastructure* such as community halls, libraries and expansions for the Kliptown Youth Programme or they could be used by local businesses to create cafes or restaurants. The creation of a new *raised pedestrian broadwalk* along the Western edge of the settlement will connect Southern areas with key infrastructure like the Kliptown Youth Programme and railway station. This will also *clearly delineate biodiverse floodable areas* from the settlement to help naturally reduce deforestation and informal expansion into high flood risk areas.

Clean Air Zone - Waste Management

Waste burning, driven by poor waste services, harms Kliptown residents, especially in informal areas.

- **Bin Provision & Waste Separation**: Public bins are lacking and municipal collection is inadequate. Installing more colour-coded bins (recyclable, non-recyclable, organic) will support separation and reduce waste.
- **Support Local Initiatives:** Equip residents involved in clean-ups with bags, gloves, and boots. Promote recycling and composting through training, creating economic opportunities and resources for community gardens.
- **Community Cooker:** This waste-to-energy unit burns up to 30kg of dry waste daily to provide clean, affordable heat for cooking. It also creates jobs and offers shared space for the community.

Green Belt: Flood Risk and Resilience

The Klipspruit Wetland was historically significant for water retention (Marara, 2019). Today, it is severely degraded, causing increased flooding and annual loss of life and property in nearby informal settlements (University of Johannesburg). Water quality is declining due to urban runoff and industrial effluents, while invasive species contribute to bank erosion and diminished biodiversity (McCarthy, 2007). Despite significant degradation, the wetland still hold great ecological and socio-economic value.

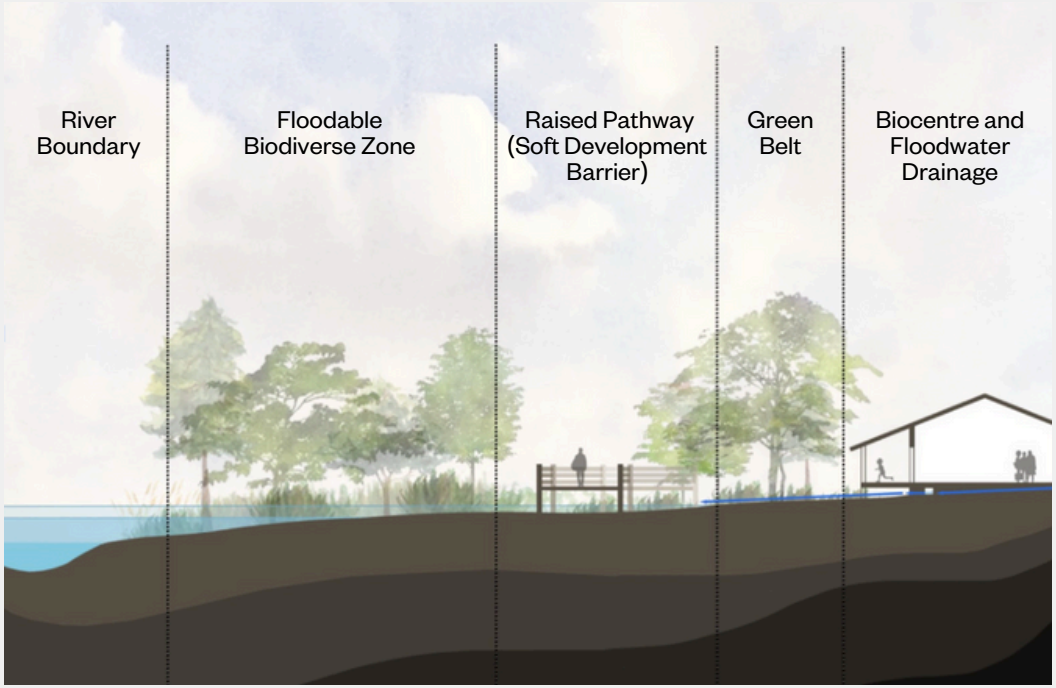
Restoring the Klip Klipspruit Wetland can

→ *Reduce flood* risks by slowing water flow and filtering pollutants.

→ *Enhance biodiversity* by supporting sensitive species like *Austroglanis sclateri* and migratory birds.

→ Contribute to *mental and physical well-being* through accessible green spaces.

→ *Improve air quality.*



Section showing natural, biodiverse floodwater drainage system alongside new public route.



Left: "The collapse of Johannesburg's Klip River wetland" (2007)
Right: Aerial photo of the 2021 floods in Kliptown - taken by the NGO "1955"



Photograph showing severe flooding in Kliptown caused by heavy rainfall during the November 2020 rainy season. Taken from (CDKN, 2021)

The rehabilitation strategy, rooted in Nature-Based Solutions, encompasses five interlinked components :

1. **Removing debris, waste**, contaminated sediments and invasive species
2. **Revegetating** with local flood-resilient species in eutrophic zones and riverbanks
3. Implementing hydrological adaptations : **river re-meandering, flood-retention area, swales, and elevated boardwalk**
4. Fostering **community engagement**: establish community gardens, provide environmental workshops with schools, and form a resident-led committee.
5. Establishing **long-term monitoring and maintenance**: Implement monitoring protocols with resident committee; secure municipal budget for maintenance; deploy two field officers.

This plan restores the Klipton Klipspruit Wetland's **functions of retention, filtration, and habitat,** while reestablishing the Green Belt as vital green infrastructure. *See full recommendations in Appendix 1.*

Clean Air Zone - Biodiversity

- Through photosynthesis they reduce greenhouse gas concentration as they store carbon dioxide and emit oxygen.
- They filter the air as they trap polluting particles.
- Vegetation contributes to air cooling, reducing ozone formation and energy consumption.

Enhancing Transport and Connectivity to Support Local Development : A Connected Place

The redevelopment of Kliptown is premised on reinforcing its connectivity, both *internally for the mobility of its residents and visitors*, and *externally to integrate the district more effectively into the broader Johannesburg urban network*. Improved accessibility and mobility infrastructure will be pivotal in *stimulating economic opportunities, social inclusion, and spatial integration*.

Our strategic approach centres on a multimodal transport system, underpinned by:

1. Rail Connectivity Enhancement

A *comprehensive renovation of the Kliptown train station* will serve as a cornerstone of regional integration. This refurbishment will upgrade facilities to improve user experience and security, while addressing vulnerabilities such as vandalism. The introduction of solar-powered lighting, alongside the development of *commercial spaces within the station, will foster a vibrant, mixed-use environment that promotes both activity and safety through natural surveillance and economic ownership.* The mixed-used space will be also powered by solar panels on the roof in auto-consumption.

2. Extension of the Bus Rapid Transit (BRT) Network

The planned *extension of the BRT system*, featuring strategically located bus stops, will ensure efficient linkages between key destinations, including Walter Sisulu Square, not far from the train station, and one residential cluster. The BRT expansion will improve public transport coverage and reduce reliance on informal and less reliable transport modes.

3. Pedestrian-Friendly Infrastructure

A *safe and walkable environment* is fundamental to equitable mobility. Our plan involves the creation of pedestrian-friendly roads and sidewalks, integrating universal design principles to accommodate individuals with reduced mobility. Furthermore, we propose to *upgrade the existing bridges over the railway lines* as well as the *construction of one new pedestrian bridge* to facilitate safe and inclusive crossings.

4. Upgrading of Key Road Infrastructure

Selected key roads will be upgraded, main roads with high-quality asphalt and secondary roads with permeable surfaces. These works will also *renovate water and drainage systems* to enhance urban resilience. *Road safety will be improved with solar-powered lighting and traffic signals* to ensure reliability during power outages.

Google Maps



Station approach with new road surfaces, BRT stop, street lighting, biodiversity and accesible entrance.,

5. Integrated Safety and Accessibility Measures

Transport upgrades will *prioritise both security and accessibility.* Sustainable lighting, accessible crossings, and well-designed public spaces will *promote safe, continuous movement while supporting economic and social development*.

In sum, these targeted interventions will deliver a *high-quality, resilient, and inclusive transport network* that reinforces Kliptown's integration into Johannesburg's metropolitan system, while enhancing everyday mobility for all residents and visitors.

Clean Air Zone - Reducing vehicles emissions

The mobility strategy will contribute to the development of more sustainable transportation modes, aiming at decreasing traffic emissions. By reducing dependency on individual vehicles and taxi mini-bus, the transport strategy aims at encouraging sustainable behavioural changes.

Supporting Thriving Communities

A resilient Kliptown will be shaped not only through infrastructure but through *empowered, connected communities and dignified economic opportunities*. Our strategy recognises that economic development and social cohesion are inseparable. Public spaces, when designed and managed inclusively, can act as *platforms for both livelihood creation and community life*.

1. Walter Sisulu Square as an Economic and Social Anchor

Despite its historic significance, the place struggles to engage local communities due to its underutilised, disproportionate spaces that fail to support everyday social and economic activities. The Square will be *reconfigured as the central hub of economic activity, community interaction, and cultural heritage*. It will serve as a *multifunctional space* where commerce, green areas, and social exchange meet, driving both local livelihoods and urban vibrancy.

We will promote inclusive economic opportunities by supporting some *voluntary trading spaces and incentives to formalise some activities*, particularly in key retail nodes, Walter Sisulu Square, the train station area, and near settlements. These interventions will safeguard existing informal traders and their livelihoods, ensuring integration rather than displacement. The *introduction of circular economy opportunities*, especially in *waste management and recycling*, will further broaden avenues for sustainable, community-driven economic activity.

2. Strengthening Local Capacities and Economic Empowerment

To underpin the transition to a *diversified, resilient economy*, investment in capacity-building programmes is crucial. These will focus on equipping community members with skills in *sustainable energy, waste management, and entrepreneurship*. Both *associative models and individual initiatives* will be supported, recognising that collective structures often nurture durable, locally rooted economic activities.

3. Reinforcing Public Facilities and Social Infrastructure

Public facilities are central to everyday life and long-term community vitality. We will prioritise high-quality, flexible-use spaces that promote digital inclusion, education, civic participation, and cultural visibility. These spaces will foster a renewed sense of *public trust and ownership*.

Our vision includes:

- *Accessible digital infrastructure* to reduce barriers to employment, study, and civic engagement;
- *Community-led media platforms* to amplify local voices and preserve cultural narratives;
- *Resource-sharing hubs* that lower barriers to economic and social participation;
- *Infrastructure for basic dignity and comfort* in public spaces (toilets, water points, shaded areas, and seating).

4. Fostering Ownership, Belonging, and Community Pride

To nurture *long-term stewardship and identity*, public spaces will integrate cultural and recreational elements that speak to Kliptown's diverse heritage. Recreational infrastructure, references to the nine tribes of South Africa, and opportunities for community-led artistic expression will reinforce a shared sense of belonging, youth engagement, and intergenerational pride.



Reactiviating Walter Sisulu Square as an economic, civic and tourist centre of Kliptown

Dual-Track Housing Strategy

Between 2011 and 2021, 2,830 new dwelling units were built in Kliptown, that means an increment of 38%. Of the incremental units recorded during this period, 60% were categorized as "formal", however, only 25% of these were newly constructed formal houses, while 35% were backyard flats or rooms (JDA, 2014). While these structures are often counted as formal due to their location within formal plots, they are often unregulated and lack secure tenure or proper living conditions.

Given this context, *a dual-track housing intervention* is proposed, aimed at addressing both the densification trends and the environmental vulnerabilities:

- **In situ upgrading of informal and backyard settlements**

Drawing inspiration from the Hustlenomics model implemented in Soweto, we propose a system of incremental upgrading whereby backyard shacks can be replaced by two-story modular housing units built with interlocking bricks, allowing for affordability, faster construction and long-term sustainability. The Hustlenomics approach is based on a shared value model: residents can access improved housing without upfront costs, while part of the structure is used to generate rental income that supports reinvestment (Hustlenomics, 2022).

This in-situ upgrading strategy should be coupled with:

- **Incremental land tenure security mechanisms** to incentivize investment and maintenance (see next page)
- **Assistance on construction** including technical construction training, financial and administrative support through a dedicated office



House located in 31 Gamsu Rd, Eldorado Park, Soweto, 1811, Sudáfrica. Taken from Google Maps



Nhlanhla Ndlovu, CEO of Hustlenomics, standing next to a rebuild backyard house recognized by the Energy Globe Award (Energy Globe, s.f.).

Expected upgrade of backyard houses using the Hustlenomics model, which produces interlocking bricks on-site from a mixture of recycled construction waste and local soil.

Clean Air Zone - Domestic Fuel Burning

Although it represents a major health risk as well as a financial burden for households, fuel burning is widely used for cooking and heating purposes.

- Developing access to energy

Lack of energy access is reinforcing dependency over fuel burning for domestic purposes. Therefore electrification is a priority to reduce emissions in Kliptown.

- Increasing clean cooking practices

Alternatives to solid fuel for cooking purposes exist such as liquid petroleum gas (LPG) stoves, emiting less than solid fuels while heating up more, reducing cooking time.

Why Hustlenomics?

★ Offers a community-driven, cost-effective and innovative model for upgrading backyard housing in Kliptown. Their approach stands out due to its on-site production of interlocking bricks, made from a mix of recycled construction **waste** and **local soil**. This method significantly reduces construction costs while promoting sustainability and minimizing the environmental footprint

★ Inclusive construction model. The initiative trains and employs low- or unskilled labour, with a particular focus on empowering women and youth in the communities they serve. This not only creates jobs, but also builds skills and fosters a sense of ownership and pride among local residents.

★ More than a housing solution, it is a movement born from lived experience. Founded by Nhlanhla, who grew up in Soweto and knows firsthand the challenges of living in poorly constructed backyard houses, the project brings both technical innovation and deep community understanding. It reimagines housing delivery through the lens of dignity, opportunity, and resilience.

New housing opportunities

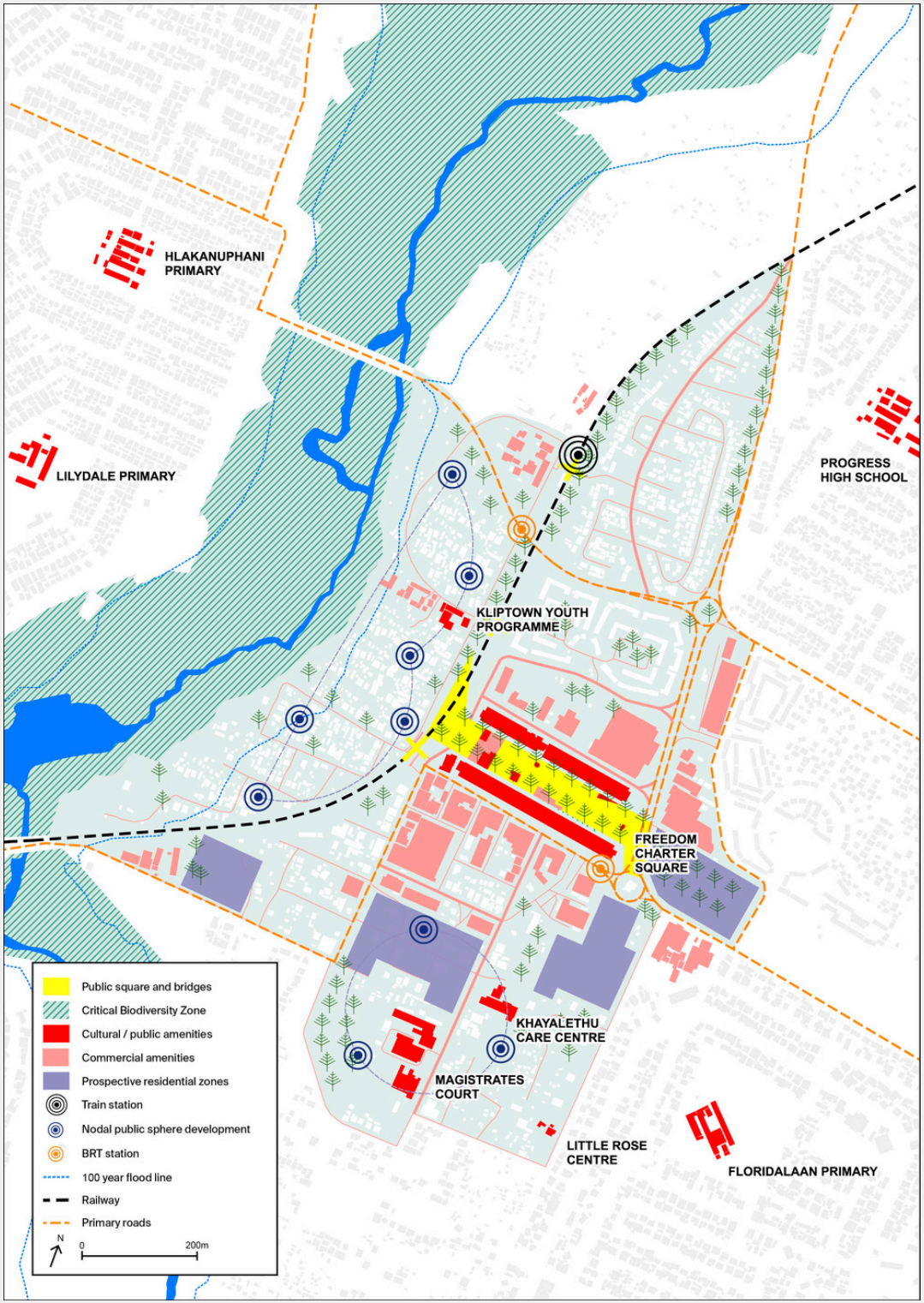
For communities living in *high-risk flood zones*, particularly parts of Freedom Charter Square and Winnie Camp, in-situ upgrading is not viable, as their lives and the environment are at high risk. A *voluntary relocation program* will prioritize these residents and offer *safe, dignified new mid-rise housing buildings in pre-identified sites with available land* (such as those identified by the Johannesburg Development Agency).

These areas will accommodate *mid-rise affordable housing* for residents seeking formal housing while remaining in their community, with priority for those living near flood-prone zones. This approach reduces density in informal settlements and offers local, integrated housing alternatives.

New mid-rise social housing buildings (three to five storeys) will be developed in low flood-risk zones with existing infrastructure, including Klipriviersoog, Eldorado Park, Pimville Zone 4, and Klipspruit Extension 11.

These buildings will adopt a *mixed-use design*, with ground floors featuring commercial units, benches, shaded walkways, and accessible green public spaces that encourage social interaction and local commerce. The construction will prioritize sustainability by incorporating *bio-based materials* such as timber frames for their carbon-sequestration and insulation properties, and by reusing rubble from construction sites to promote circular resource use. The buildings will also integrate green architecture principles, optimizing orientation for energy efficiency and incorporating technologies like solar panels to improve access to clean, affordable electricity.

The aim is to establish a housing cluster in *Klipriviersoog* designed around internal pedestrian networks and shared community amenities. Ground-level areas will be activated as multifunctional spaces for daily gatherings, local markets, cultural events, and as departure points for community-led heritage tours, creating income opportunities through cultural tourism.



Map of the site showing public and commercial spaces, improved internal and external connectivity, biodiversity, and identifying 4 prosepective residential zones

For instance, Klipriviersoog has an area of approximately 31,000 m^2, offering potential for the construction of about 127 to 186 new dwelling units, based on the current residential density of 41 to 60 dwelling units per hectare (DU/ha). With increased provision of amenities and infrastructure, zoning regulations should be adjusted to accommodate higher-density residential developments.



Example of a compact mixed-use housing cluster, where ground-level commercial spaces and pedestrian-friendly design promote community interaction and economic activity.

For the success of spatial upgrading strategies in Kliptown, physical interventions must be complemented by **targeted regulatory** and **financial mechanisms.** Two critical enablers are proposed:

Tenure upgrading is vital to *recognise the rights of the long-term residents* of Kliptown's informal settlements and ensure they can access available government support, home-equity credit and insurance for their properties. Regularization will enable the offering of land rights accompanied with essential infrastructural improvements.

To *overcome bureaucratic barriers*, the new public spaces created by biocentres can be used to offer assistance to residents to help them navigate the complex process. It is also essential that regularization does not require significant individual property adaptations as these can act as barriers for low-income households. Therefore, if property upgrades are required, residents should be *supported in this by government funding*. Given the prevalence of backyard accommodation in the area, it may also be necessary to *waive conventional minimum plot sizes* to ensure all households are able to regularize their tenure.

Financial Mechanisms: As we hope to put Kliptown residents on a trajectory towards homeownership and housing security, having an accessible tenure and financing strategy is key. We suggest employing the *First-Home-Finance Scheme* by Department of Human Settlements to support first-time homebuyers. As we recognise that many residents moving from informal settlements might not meet the financial criteria of R3,501–R22,000/month, we propose a *financing scheme that is tied to employment in the mixed-use development*. To synergise local employment in the development and fast-track homeownership, employees of the amenities at the development should be paid sufficiently well within the range for them to access this scheme. Local residents should be prioritised in the employment opportunities at the development

Project summary

Kliptown Relinking is a project that aims at revitalising Kliptown through a **multiscalar approach** in order to recreate links between Kliptown neighbourhoods as well as foster Kliptown integration into Johannesburg. Our vision relies on the development of **mixed-used interconnected nodes**, including housing, community facilities, commercial space, enhanced movement and green spaces. It is a development for the people of Kliptown, building on the historical and cultural heritage of this **thriving locality**, empowering communities through economic dynamism and climate resilience. The cornerstone of Kliptown Relinking is to foster a sense of ownership to ensure **sustainability and maintenance** of physical and social infrastructures provided. The enhancements proposed directly contribute to improve air quality in Kliptown to create a **Clean Air Zone** that responds directly to local challenges.



Biocentre creating a community space

Environemental Assesment

- Green energy
  - solar-powered street lighting, solar panels, biocentres , community kitchen
- Green building
  - incremental construction, biobased materials
- Circular resources
  - adobe street furniture, recycling initiatives, rubbles reuse in construction
- Climate risk reduction
  - permeable paving, improved drainage
  - wetland restoration, biodiversity preservation
- Sustainable mobility
  - public transport and active mobility enhancement
- Education and training supporting urban transition

Community Benefits

- Quality outdoor public space
- Community spaces and facilities
- Locally informed design
- Mixed use developments
- Increased connectivity (physical & digital)
- Training and economic opportunities
- Health improvements (sanitation, waste, air quality)
- Housing opportunities

Appendix

Reflexivity

Somebody is always writing, and writing is always done from somewhere. While the seven of us are students from Europe, Asia, and South America, we have never lived in South Africa. As such, we recognise our positionality in approaching this project, especially as students educated within Global North, Western institutions, even if these institutions increasingly strive to teach from, and engage with, Global South perspectives. Nonetheless, our understanding remains shaped by the epistemologies and frameworks dominant in these academic settings. We therefore approach this project with reflexivity, conscious of the distance between where we write from and the realities we seek to engage with.

In an effort to be more conscious of and act on our positionality, and to avoid insensitive top-down ideas onto our project, our team has undertaken thorough research using resources from South Africa as much as possible, while also adapting ideas from elsewhere. To keep away from intervene in a community without listening local voices, we also conducted interviews with different stakeholders to provide guidance for our strategies.

We would like to extend our heartfelt and sincere thanks to:

Thando Bezana
Co-Founder, Kliptown Youth Program

Penelope and Nhlanhla
Little Rose Centre

Thibaud des Déserts
Head of Energy Business Unit, Tractafric Equipment

Appendix 1 - Green Belt Restauration

Strategic Pillar	Action
Cleaning up pollution and removing contaminants	• Remove debris, waste and contaminated sediments • Eradicate invasive species (Acacia mearnsii, Eucalyptus grandis) • Upgrade upstream treatment facilities to intercept urban and mining effluents
Revegetating riverbanks with flood-resilient species	• Reinforce banks with Phragmites communis for sediment and metal filtration • Plant Typha capensis in eutrophic zones • Reintroduce indigenous riparian species : Syzygium cordatum, Ficus sur, Vachellia karroo. • Establish deeply rooted species: Celtis africana in wet valleys, Leucosidea sericea on damp slopes, Cassinopsis ilicifolia at flood margins • Enhance bank stability and flood resilience
Implementing hydrological adaptations	• Re-meander two river reaches (new channel alignment with varied cross-sections to restore natural meandering morphology) • Construct a low-lying flood-retention area • Install swales alongside the informal settlement to channel excess water • Build elevated timber boardwalk 20 cm above high-water mark
Fostering community engagement and capacity building	• Integrate volunteers (residents, schools, businesses, NGOs) in clean-ups and tree-planting. • Establish community gardens as local hubs for food production and interaction • Deliver environmental education workshops in Kliptown schools and youth centres • Form participatory management committee
Establishing long-term monitoring and maintenance	• Implement protocols (flow rate & water quality measurement, vegetation and fauna inventories) in collaboration with the participatory management committee. • Allocate dedicated municipal budget for routine upkeep (swale clearance, boardwalk repairs, green-waste composting) • Support by two trained field officers

Appendix 2 - Operational Recommendations

Solar Panel Integration

The integration of solar technologies, particularly for street lighting, traffic control, and building energy autonomy, offers substantial advantages for Kliptown's redevelopment, especially considering the limitations of the current electricity grid.

Solar-Powered Street Lighting & Traffic Signals

- Self-Cleaning Panel Design: The installation of solar panels at a 25° inclination, optimised for Johannesburg's latitude, promotes self-cleaning during rainfall, reducing maintenance needs.
- Vandalism Prevention: Equipment is mounted atop smooth, 10-meter-high poles, making unauthorized access and theft significantly more difficult. This has been validated through stakeholder interviews and field experience.
- Resilience to Outages: Properly sized systems can provide up to two days of autonomous lighting during power outages, an essential feature for public safety.
- Load Reduction on Existing Grid: Kliptown lies within the Eskom electricity supply area, which is nearing full capacity. Solar-powered infrastructure would relieve pressure on this already strained network.

Limitations & Adaptations

- Shading Constraints: In narrow or shaded streets, solar power efficiency is reduced. In these cases, conventional grid-connected lighting systems should supplement solar installations.

Solar Panels for Building Self-Consumption

- Sites such as Water Sisulu Square, the train station, and selected housing developments could benefit from rooftop solar panels for local energy generation, enhancing energy independence and sustainability.



Solar Street Lighting by Novea
https://www.novea-energies.com/en/



Asphalt Road Surface
https://finelliconsulting.com/managing-stormwater-runoff-the-power-of-permeable-pavement/



Permeable Pavement for Stormwater Management
https://finelliconsulting.com/managing-stormwater-runoff-the-power-of-permeable-pavement/

Road Infrastructure

A differentiated approach is proposed for road construction based on anticipated traffic volumes:

- Primary Roads: To accommodate heavy traffic and ensure long-term durability, asphalt is the most viable option despite its lack of permeability.
- Secondary Roads: These roads, expected to experience lighter traffic, could be constructed using permeable materials, supporting rainwater infiltration and reducing stormwater runoff.

Cultural Infrastructure & Community Initiatives

Cultural projects are vital in reinforcing community identity and fostering a sense of ownership among residents. These could include the construction of community centers, art installations, or event spaces.

- Long-Term Commitment: The success of such initiatives depends on sustained human resources and time investments to manage, coordinate, and follow up on projects. Active local engagement will be critical to their long-term viability and impact.



Community-made tiles to add decoration and identity to spaces



South Africa's Coats of Arms
https://www.reddit.com/r/heraldry/comments/fiypky/coats_of_arms_of_south_africa_and_its_provinces/