Designing Sustainable Cities

Key principles in designing sustainable cities include efficient land use and compact urban form, encouraging mixed-use development that integrates residential, commercial, and recreational spaces, minimizing sprawl. Residents reduce the need for extensive commuting optimising the use of infrastructure, resources, and energy, contributing to overall sustainability.

Transit-oriented development (TOD) can mitigate many of the impacts of poorly planned urban sprawl, including low-rise, fragmented development with poor provision of services and inadequate space allocated to streets, urban transport, and public spaces.

1 Interconnected street networks

Today, upcoming districts in many urban areas are car-centric and lack convenient walking and cycling connections. Large parcels are surrounded by high compound walls, leading to long detours for pedestrians and cyclists.

Public transport is difficult to access and there are no public green spaces or plazas. Instead, pedestrians have to navigate desolate environments built for cars rather than people.

A more sustainable alternative is to create a proper street network with smaller urban blocks and direct walking routes. Pedestrian passageways inside developments and pedestrian-only streets lead directly to public transport stops, making commutes quicker and easier and improving access to local services.

Parks and greenways encourage community interaction and contribute to better liveability.

2 Dense development along rapid transit lines

In many African cities, infrastructure for private cars has taken precedence over investments in public transport. In addition, zoning rules prevent compact development along mass rapid transit corridors. Low-rise, car-oriented buildings occupy prime land, limiting the number of people who can live within walking distance of frequent public transport.

Bus rapid transit, or BRT, enables cities to carry a large number of passengers without an exponential increase in road space requirements. Well-designed BRT can ensure fast and efficient operations by preventing delays and encouraging people to switch from private vehicles, leading to improved access for all. Cities can improve access to BRT by allowing dense development close to BRT corridors and stations, thereby reducing commute times for urban residents.

3 Mixed-use development

Many urban districts have segregated land uses due to outmoded zoning policies. The separation of uses leads to long, expensive radial commutes and heavy congestion on major arterials, in turn encouraging car use. Land use policies also contribute to stark income segregation, with many high-income areas accessed solely by private vehicles.

As an alternative, cities should allow mixed-use development, ensuring that neighbourhoods have a combination of workplaces, housing, retail, education, and medical services. A mix of uses reduces unnecessary vehicle travel and encourages the use of active modes. In addition, public transport station areas should provide for vending, a common feature in many African cities. Well-planned vending improves community interaction and street activity, enhancing security in public spaces.
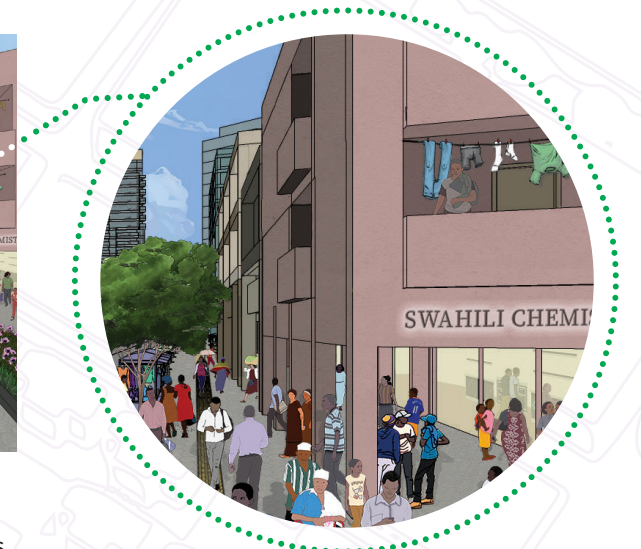
4 Pedestrian and cycle facilities

In most cities, streets have wide, high-speed carriageways and lack provision for at-grade crossings. Pedestrians have to jump over open drains run across wide carriageways, or use footbridges, which are often insecure, impractical, and time consuming for persons with disabilities and those with children and luggage. Key urban services such as vending are not considered, leading to increased chaos on the street.

Good urban street design prioritises pedestrians, cyclists, and public transport users, who make up the majority in urban areas in Africa. Cities need complete networks of wide footpaths and cycle tracks, with adequate at-grade crossings designed for ease of use, with traffic calming or signalisation to manage vehicle movements.

Walking and cycling can replace private vehicle use, especially for short commutes, if a quality network of non-motorised transport facilities is available.

5 Pedestrian-friendly built form

Many commercial and residential developments, especially in high-income districts, are surrounded by compound walls. Streets feel insecure because there is no interaction between the building and the street.

Instead, developments should have active ground-floor facades to provide a safe, vibrant urban environment.

6 Parking management

Developments often provide a large amount of parking, driving up the cost of retail and residential space. Too often, government policies even require a minimum amount of parking in each building, and cities further encourage the use of private cars by turning commercially viable urban land into parking lots. On-street parking is poorly regulated, cars park on footpaths and cycle tracks, and driveways interrupt the pedestrian realm.

Parking should be regulated, with hourly parking rates zoned based on demand to encourage the use of more sustainable modes of transport. Market-based parking prices manage demand and keep revenues high, providing an important source of funding for cities while reducing congestion.

IT-based system for enforcement help ensure efficient monitoring and better compliance with parking rules. Cities should scrap off-street parking requirements, freeing up space for more valuable uses such as affordable housing.

7 Informal settlement upgrading

Lack of access to affordable housing close to job centres has contributed to the proliferation of informal settlements with insecure land tenure, poor access to sanitation, and inadequate areas allocated to streets and public space.

Governments can work with investors, developers, and financial institutions to improve conditions in informal settlements. In addition, provision of essential amenities such as water, electricity, sanitation, and drainage improves the quality of life for residents, while improvements in walking, cycling, and public transport keep commuting costs down. New affordable housing projects should follow TOD principles, by ensuring mixed use, pedestrian friendly built form, and easy access to mass rapid transit.