SECOND STAKEHOLDERS WORKSHOP FOR THE REVIEW AND UPDATING OF THE ROAD DESIGN MANUAL & STANDARD SPECIFICATIONS FOR KENYA

AAK | PROMOTING EXCELLENCE IN THE BUILT ENVIRONMENT

FEEDBACK FROM THE ARCHITECTURAL ASSOCIATION OF KENYA (AAK)

18TH AUGUST 2023

Feedback RDM Volume 1 -5

Safety

- Safety considerations in the manual are skewed towards motorists with the NMT users' considerations being at a distant second.
- 50% of fatalities on Kenyan roads affect NMT users especially pedestrians thus the manual needs to be updated accordingly.
- Ensure human factors (from NMT & MT) are sufficiently addressed in the design process.

Accessibility

- Token provisions for universal access that affects accessibility for PWDs and children.
- More needs to be explicitly provided for our road designs to be inclusive to everyone.

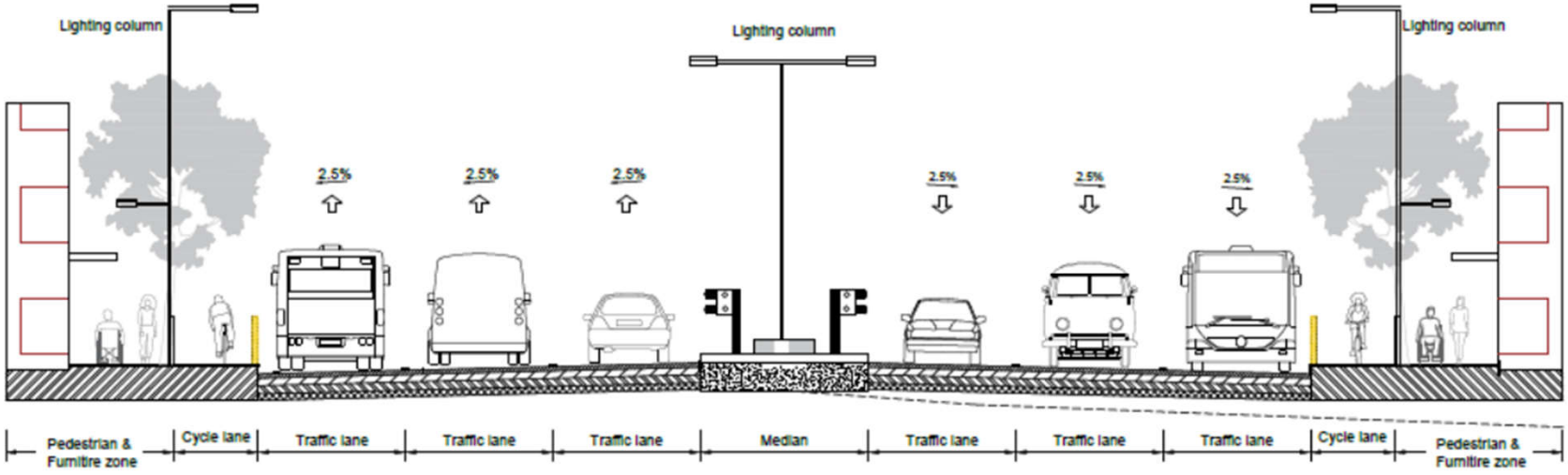
Connectivity

- The manual recognizes the need to ensure that roads are well connected to each other and other transportation modes
- We recommend the same consideration is made to NMT networks (footpaths & cycle tracks).

Sustainability

- The updated RDM needs to incorporate sustainable road design taking into account environmental impact & resource conservation.
  - Vegetation (incorporate landscaping on our roads as from design stage, guided by landscape architects)
  - Natural drainage systems/ bioretention systems (rain gardens and bio swales also guided by Larch)
  - Rain water harvesting
  - Efficient street lighting

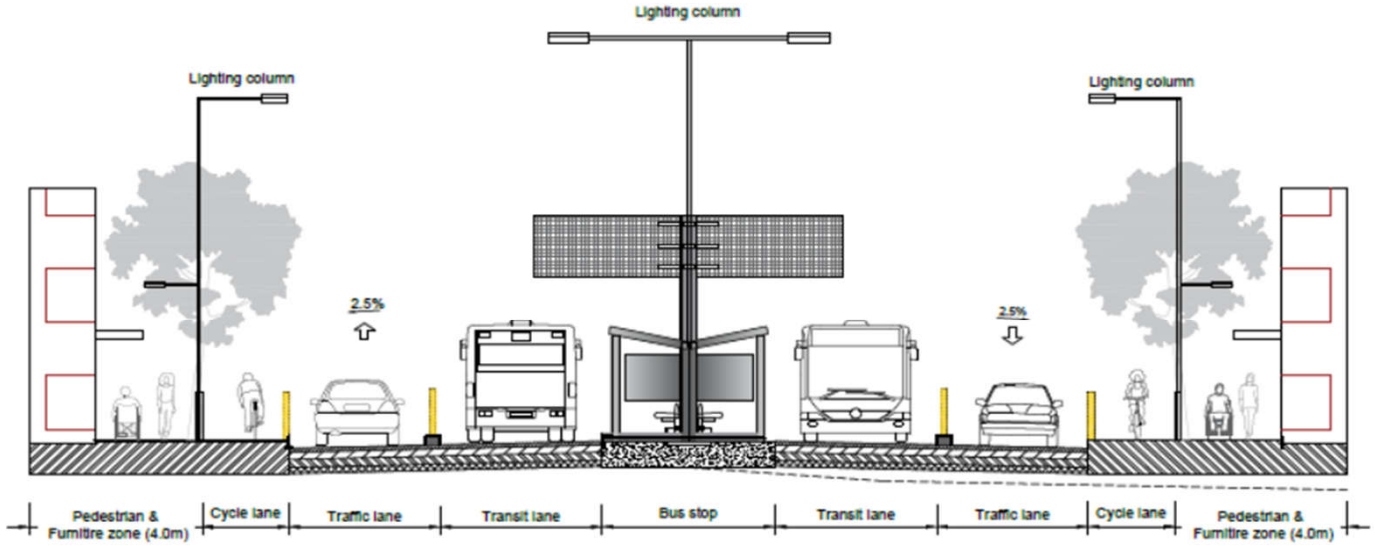
Urban roads



Typical cross section - Type 4
(Urban arterial with raised median)

- The manual doesn't indicate minimum sizes of the cycle lanes, pedestrian and furniture zones in this cross section.
- Sufficient space of about 3m minimum width should be provided for pedestrians exclusive of the arcade

Urban roads

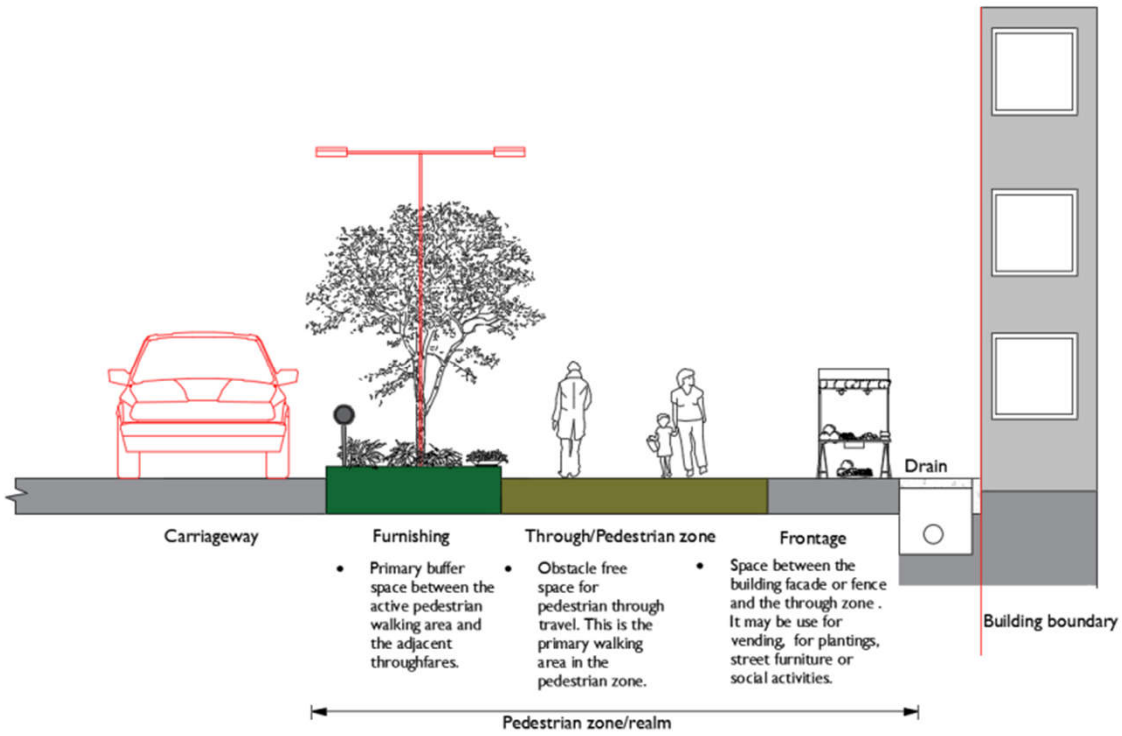


Typical cross section - Type 6
(Urban Collector road with bus stop)

- Cycle lanes should be allocated on both sides of the road, with sufficient clear width to allow two cyclists to pass each other comfortably.
- When a cycle lane is provided only on one side of the road, it should have a minimum width of 3m to allow bidirectional movement comfortably.

Urban roads

Footpaths



- The minimum widths of the pedestrian zone should be well indicated.
- Footpaths should be restricted to NMT users like pedestrians, people in wheelchairs. MT like motocycles and tuktuks should not be allowed.
- The clear widths of footpaths should not be affected by kerbs, street lighting and utility posts. They should be restricted to the furniture zone

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Urban roads

Footpaths

A good example on universal access

Source: SDMUAK 2022

- Provide for the provision of ramps not more than 6% at obstructions that occur like at kerb raised medians, channeling islands and property accesses for universal access.
- A footpath with a minimum clear width of 2m should be provided after the ramp

Footpaths in rural areas

- Provide footpaths in rural areas at a minimum width sufficient for carts and people carrying luggage

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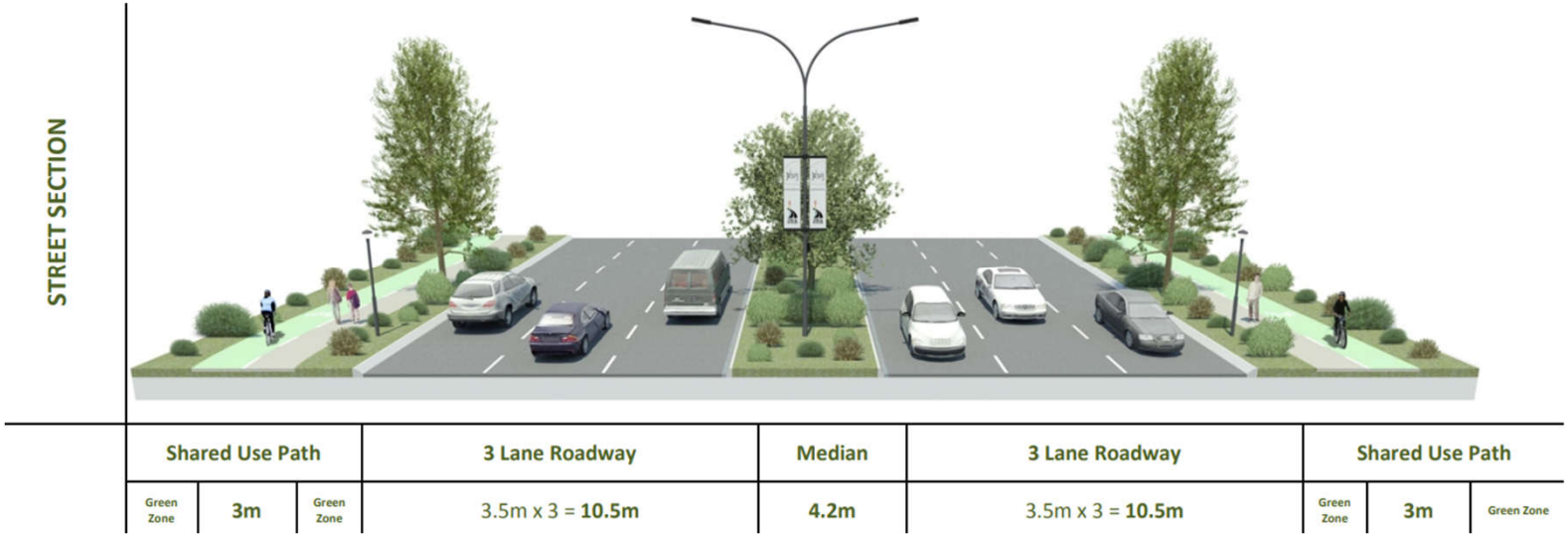
Urban roads

Landscaping



A good example of an arterial incorporating green zones

Source: City of Johannesburg Complete Street Guideline

Landscaping

Provide for the provision of a landscaping zone on the cross sections of urban roads to be guided by landscape architects from the design stage.

Urban roads

Street furniture

Street furniture

Provide for the provision of street furniture where it is possible on urban streets.

Urban roads

Traffic calming

- Slow down traffic at level crossings where pedestrians need to cross the road
- On higher road classes designed for higher road volumes, do not add road bumps instead provide well designed and friendly pedestrian bridges.
- Involving architects in the design of footbridges and bridges will enhance their aesthetics, unlike in the current situation.

RDM 1.2: Traffic surveys

- Many bus stops/ bus terminals in urban areas are usually erroneously placed and sized.
- Incorporating BA surveys for a few days (weekday, Monday/Friday, and weekend) can shed light on preferred bus stops and the number of boardings & alighting to help size them appropriately.

RDM 1.3: Geometric Design of Highways, Rural and Urban Roads

- Consider separate manuals for the different settings as the RDM 1.3 combines geometric design provisions for highways, urban and rural roads.
- Consider provisions for private/ controlled developments like the oncoming satellite cities e.g., Tatu, Konza, Northlands etc.

RDM 2.2: Drainage Design

Section 7: Urban Drainage

- Consider provision for modern storm water management solutions – rain gardens, bio swales etc.

An example a bio retention basin

Source: City of Johannesburg Complete Street Guideline

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Section 7: Urban Drainage

- On detention/ retention facilities there is no provision for detention/ retention structures in the manual, being incorporated in modern urban infrastructure designs
- Also consider different materials used to construct the structures.

RDM 5.2: Pavement Maintenance, Rehabilitation and Overlay Design

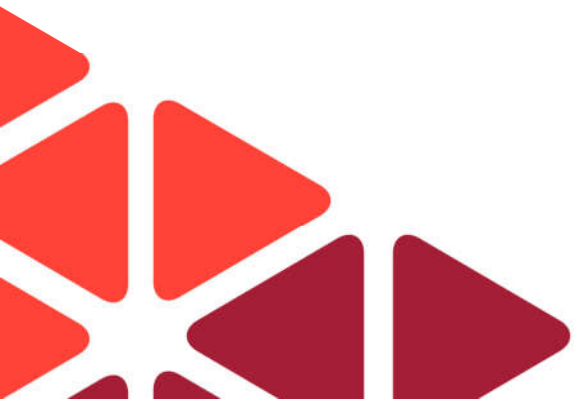
- Include operation and maintenance manuals for other infrastructure e.g., drainage, NMT infrastructure and other roadside features to guide the post construction period for all infrastructure.

Feedback on SSRBC

STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION

1. Programme of Works

- It is commendable that Clause 1208 been updated to not referencing any clauses in the conditions of contract. It will not be affected by
    - FIDIC Conditions of contract constant review
    - Contracts that don't adopt the FIDIC conditions



2. Dump Rock

- Clause 3601 on scope specifies requirements of dump rock and ungraded dump rock to have a max dimension of 250mm
- Clause 3602 on materials specifies max. particle size for dump rock in fill and improved subgrade layers
- Maximum dimension of rock should be consistent in all clauses, to avoid disputes between parties in contract works
- RDM 3.3 Clause 5.3.6 Specifies min. UCS of 7.5MPa for dump rock to be used in fill & improved subgrade layers. Transfer the same to SSRBC to avoid disputes between parties in work contracts.

2. Dump Rock

- Consider further guidance with respect to water adsorption properties of the type of rock especially in sections with a high water table to guide suitability of different rock types for earthworks

3. Soft Rock

- RDM 3.3 Clause 8.2.6 Specifies properties of good quality soft stone to be used in thicknesses given for improved subbase layer.
- Transfer the guidance described to the SSRBC to aid disputes between parties in works
- This is because, there is a culture in road contracts of adopting the SSRBC in lieu of design manuals

Thankyou

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