T.O.D. Planning Through the Scales: Dar es Salaam Case Study

Urbanscapes Symposium 2019

21st March 2019
World Bank, Washington DC
Liveable & Smart Neighbourhoods
Many Cities Have Grown From a Central Core
Successful Large Metro Cities are Compact & Poly-Centric with Multiple Urban Centres
Key Principles for Creating...

- Places for People
- Compact Cities & Districts
- Green & Secure
- Integrated Access & Governance
- Urban Smart & Sustainable
- Liveable & Healthy

Liveable & Smart Neighbourhoods
Smart Integration
Smart Process
Smart Outcomes
= Better Lives
Better Environment

Liveable & Smart Neighbourhoods
TOD Planning through the Scales

THE COMMISSION INVOLVED:

Baseline Mapping & City Diagnosis
Corridor Development Strategy
Station Neighbourhood Guidelines
TOD Nodes
Corridor Development Strategy

INTEGRATED EVIDENCE-BASED APPROACH

01 Data evidenced findings for firm foundations

02 Multi-disciplinary outputs & staged recommendations

03 Open approach shared with stakeholders to build momentum

04 Target investment to address growth, poverty, capacity across all 17 SDGs
DMDP Transit Routes

Planned BRT Lines 1-6

Legend:
- BRT Phase 1
- BRT Phase 2
- BRT Phase 3
- BRT Phase 4
- BRT Phase 5
- BRT Phase 6
After 60 years of sprawl
...increasing a further 130% by 2032
City Land Use Plan
Dodi Moss plan not agreed, not TOD; Need to use land better
Strategic Location
Better links to wider region & 6 inland nations

Reduced Journey Times
75% journey time reduction

Award Winning Transit

Density & Values Rising
Transit-Led Development Plan
Existing station area densities

- **Manzese** (Station Area)
  - 394 people/Ha

- **Kisutu** (Station Area)
  - 150 people/Ha

- **Fire** (Station Area)
  - 100 people/Ha

- **Kimara** (Station Area)
  - 50 people/Ha

- **Kivule**
  - 35 people/Ha

- **Mjimwema**
  - 15 people/Ha
TOD = optimal density targets
100 - 300 PPH for station area neighbourhoods centres

BRT station area target range

MALMO
110 people/Ha

SINGAPORE
207 people/Ha

CURITIBA
294 people/Ha

BARCELONA
357 people/Ha

HONG KONG
500 people/Ha

New Neighbourhood Development

Dense Garden City

Lineal Development

Expanded City Centre

Dense City Centre

Too Low
50 people/Ha

Low
150 people/Ha

Medium
220 people/Ha

High
350 people/Ha

Too High
450 people/Ha
The Transit Oriented Development (TOD) Matrix is a decision making tool that builds on the City Vision and objectives as well as lessons learned from international TOD best practice. It provides an assessment to direct station development recommendations and priorities. It will provide foundation for planning and investing strategies around each station on the BRT network.
Evolved planning strategy

Contextualising the Stations

Station Evaluation Matrix

Station Typology Designation

Station Area Evaluation

STRATEGY

MATURE

EMERGING

UNREDDY
## Station Maturity

**MATURE:** Suited to implement TOD development principles - market ready, land is available and infrastructure in place. Target private sector investment.

**EMERGING:** Average market conditions but needing infrastructure or land to develop. Likely to be cheaper land. Partner with private sector to deliver catalyst infrastructure and amenity investment.

**UNREADY:** Still in pre-development. Needing substantial investment and public sector support and longer term approach to achieve TOD.

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<th>Station</th>
<th>Market Readiness</th>
<th>Development Potential</th>
<th>TOD Characteristics</th>
<th>Overall Station Score</th>
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BRT Station Area Typologies

- **CENTRAL BUSINESS DISTRICT**
- **GATEWAY HUB**
- **DISTRICT CENTRE**
- **SERVICE CENTRE**
- **TRANSIT NEIGHBOURHOOD**

### Typologies Overview

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
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<tr>
<td>Type 1</td>
<td>Central Business District – Major commercial hub of the city</td>
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<td>Type 2</td>
<td>Gateway Hub – Key interchange location</td>
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<td>Type 3</td>
<td>District Centre – Consolidated urban district with commercial uses, retail</td>
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<td>frontages &amp; apartments</td>
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<td>Type 4</td>
<td>Service Centre – Place for mid-scale employment and non-residential activity</td>
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<td>Type 5</td>
<td>Transit Neighbourhood – Residential station hubs supporting the needs of</td>
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<td></td>
<td>the community</td>
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**Density & Diversity**

- More Dense & Diverse
- Less Dense & Diverse
BRT Phase 1: 32 Stations
BRT Phase 1: Station Typologies
Identification of Key Features within the Wider Context
Symbiosis between different TOD centres
Incremental Transformation
Incremental Transformation
Incremental Transformation
Incremental Transformation
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Incremental Transformation
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Incremental Transformation
Incremental Transformation
Consolidation of key features
Community facilities
Commercial and other activities
Power and water networks
Drainage and sewage
Universal TOD Toolbox
Comprising typical features and components that are common to all station typologies. Focused on transit supportive outcomes that reflect best practice.

01 Walkable Urban Planning
02 Massing & Land Use
03 Interchanges & Connections
04 Networks
05 Community Facilities & Open Space
06 Quality Places & Public Realm
07 Signage & Wayfinding
08 Integrated Infrastructure
09 Safety, Accessibility & Comfort
10 Parking
Workshopping TOD Neighbourhoods
District Neighbourhood Centre

Main Components:
- Garbage Purchase Center: to support community focused waste collection strategy, including areas where vehicular access is limited.
- Central square: designed flexibly with capacity for local events and commercial activity as a major local focus point.
- Community Facilities: such as clinic, library, community halls and support services - located in a central position for universal access.
- Indoor Market: with a related open space at an accessible location to accommodate former street traders in a consolidated and managed facility.
- Off-street parking - as podium / basement / multi-storey facilities with capacity that meets anticipated demand.
- BRT District Centre Station
- Data / Feeder Station
- Loading & Drop off lanes
- Primary Roads with Feeder PT
- Local Routes - pedestrian oriented
- Active Frontages
- Main Community Facilities

No direct vehicular access from BRT corridor

Pedestrian Connection

Regenerative Interventions

Feeder Route Enhancement

Network Connection

Open Spaces

Commercial Plaza

BRT ROUTE 2

500 m Influence & Station Core Zone
Main Components:

- Garbage Purchase Center: To support community-focused waste collection strategy, including areas where vehicular access is limited.
- Commercial Central Square: At the back of the station designed flexibility for local events and commercial activity as a major local focus point.
- Community Facilities: Existing hospital, and possible integration of new facilities such as schools, library, leisure centre, convention centre, located in a central position.
- Indoor Market: with a related open space at an accessible location to accommodate former street traders in a consolidated and managed facility.
- Off-street parking - as podium / basement / multi-storey facilities with capacity that meets anticipated demand.
- Data Hub - create a data hub and other modes of interchange.

Legend:
- BRT District Centre Station
- Data Hub / Feeder Station
- Loading & Drop off lanes
- Primary Roads with Feeder PT
- Local Routes - pedestrian oriented
- Active Frontages
- Main Community Facilities

Station Access
Pedestrian Networks
Open Spaces / Community Facilities
Plot Efficiency
Feeder Route Enhancement
Existing transit uses
Development Height Profile
Existing Historical Clusters
Building Form / Distinctive Features
Gateway Neighbourhood

Main Components:

- Retail
- Commercial
- Entertainment
- F&B
- Heritage
- Managed Parking

Feeder Route Regeneration

Multi-functional green spaces

Interchange Facility

Higher footfall uses

Regional Trunk Road

500m Station Influence Area

Plot Efficiency

Integrated Green Infrastructure

Seamless Connection

Core Area & Development profile

Overhead Pylon Corridor

Service Access from front:
- Occasional vehicular access to plots fronting the station to integrate existing natural site features, topography and to support uses which need frontage such as car showrooms

Community Allotments/gardens:
- to maximise the use underneath of (110 m wide) overhead pylon corridor & accessible from main feeder route

Solar Farming:
- underneath the overhead pylons corridor as an alternative source of energy generation

Historic features - Retain or enhance and integrate existing historic features as a part of regenerative interventions within the outer influence zone (200-500m)

Feeder Terminal/Depot - with space for local buses and other modes of commute
Transit Neighbourhood

Main Components:
- Garbage Purchase Center: to support community focused waste collection strategy, including areas where vehicular access is limited.
- Flexible typologies that promote live & work with GF spaces for family businesses.
- Local community hub with health point, nursery, community plaza and local market and connected through safe routes with the station area enhancing regeneration.
- Station retail area with flexible spaces for local market and range of units sizes within pedestrian friendly zone.
- Off-street parking: while larger developments around the station may require basement/ podium parking, those located at less expensive plots with lower plot occupation would have surface parking.
- Feeder terminal - with space for data data buses and other modes to interchange.

Station Access

Primary & Secondary Schools

Employment Clusters

Variation of Typologies along the corridor
Service centre station areas

Access from service lanes: All vehicular access to plots overlooking the BRT corridor to be from the rear. BRT corridor may include loading bays, but no long-term on street parking.

Community square: designed flexibly with capacity to serve local outdoor events and commercial activity as an anchor and focus for activity.

Community facilities: such as health clinic, library, community halls/places of worship and support services located centrally and easily accessible.

Historic features: Retain or enhance and integrate existing historic features as a part of regenerative interventions within the outer influence zone (200-500m).

On Plot parking: for large employment plots which can also be shared with other complimentary uses.
Six Neighbourhood Regeneration Models

1. **Corridor Priority Developments**
   Access to all infrastructure and amenities to attract investment and renewal.

2. **Developer Contributions**
   Land Value Capture mechanisms applied to key sites giving new revenues for amenity benefits.

3. **Land Pooling**
   Planning available land for sale to responsible developers.

4. **Home Upgrading Grants**
   Slum dwelling rehabilitation to meet new design codes.

5. **Helping Homes at Risk**
   Supporting residents at risk from flood, epidemic, fire and landslide.

6. **Public Land Assembly**
   Cluster state owned land for comprehensive development.
1 Corridor Priority Developments

Providing access to all infrastructure and amenities to attract investment and renewal
2 Developer Contributions

Land Value Capture mechanisms applied to key sites giving new revenues for amenity benefits
3 Land Pooling
Planning available land for sale to responsible developers

Before and after - Neighbourhood Regeneration

Existing plots layout FAR 0.55

Proposed plots layout with FARs

Example Massing to meet strategy standards
4 Home upgrading grants

Slum rehabilitation and titling to meet building codes to access new services
5 Helping homes at risk

Supporting residents at risk from flood, epidemic, fire and landslide
6 Public Land for Rehousing

Cluster state owned land for mixed development including affordable homes
Ubugo seed project performance

Land Value Capture - Sources of Benefit

- Affordable housing, some community facilities (housing 2,696 people) - new accommodation with market value cUS $24m
- Infrastructure Levy to fund Development Corporation cUS$4m, @ US$25/m2
- Developer funding of all site infrastructure: US$3.8m
- Developer contribution of cUS$4m for importing better bulk utilities
- Government also benefits from Development Taxes, Tax for commercial floorspace, Income Tax and importation levies for goods imports to build an operate the development

ESTIMATED PROFIT:
US $57,570,000

LVC (EXCL. TAX):
US $35,600,000