

Summary Guidelines and Standards for the Planning of City of Cape Town Social Facilities and Recreational Spaces

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INTRODUCTION: Interpretation and contextualisation of the Standards and Guidelines

How Best to Use these Summary Guidelines and Standards

This document presents a summarised standards schedule and guidelines for the spatial provision and development of social facilities and recreational spaces for the City of Cape Town. Standards are provided mainly in terms of demand thresholds and accessibility targets in terms of travel time or distance by preferred mode. They also provide a framework for debating appropriate site sizes within a range of contexts.

Note: An indication of those facilities for which prior land allocation is critical and essential is highlighted in the index of this report. It is not, however, within the scope of this project to present mandatory and enforceable standards for any of the facilities concerned. The respective authorities could, if required, make use of the report guidelines in legislating for enforceable standards.

The standards have been adjusted, where suitable, based on current practice in the City of Cape Town. An evaluation of the current and future provision and optimal location of new community social facilities and recreational space was undertaken by CSIR in 2009 and 2010 (Green et al. 2010). See “Evaluation of community social facilities and recreational space in City of Cape Town: current and future provision for 2016 and optimal location of new facilities”. This provided valuable empirical benchmarks in terms of the level of compliance to the standards at the date indicated. Where applicable, various test runs of the analysis were used to modify the standards presented in this document.

In all cases, the site sizes indicated here are subject to revision based on the improved design of facilities. Tables indicating recommendations for the facility types that can be clustered at various node types, the multiple uses of social facilities and the potential for clustering are given at the end of the document (Appendix A).

Clustering and the multiple-use of facilities present considerable potential for cost savings and efficiencies, however this is only possible under conditions of good design and management. Some good practice examples of these approaches have been provided in the Provincial Planning and Development Commission’s report on *Guidelines for Planning of facilities in KwaZulu-Natal* (2008).

The standards should be applied over a broad area, each development, however small, should be required to contribute proportionally towards larger facilities. This would be either through land - if appropriately located in terms of the overall district plan - or in the form of a development contribution.

The Guidelines and Standards with respect to the size, location and number of facilities to be provided are the starting point for developing sustainable and integrated communities. The quality and capacity of facilities,

in offering the right range of services for a specific community profile and operated by competent staff, together with good maintenance of the facilities, remain critical to the effective delivery of services.

The **Space Planner**, developed by CSIR, can be used to calculate a total facility demand which can then be compared to the known supply data. This tool can be applied to calculate gross social facility and recreational space demand associated with residential development for an entire town or city or a new development application. Use of the Space Planner is free and it can be accessed at <http://spaceplanner.csir.co.za>. Examples of Space Planner results showing the facility need and land impact of 3 different sizes of new development can be found in Appendix C of this document.

As much as planning should not revert back to prescriptive “blue-print” planning, it is nevertheless true that without normative and quantifiable standards it becomes difficult to measure and compare levels of provision and then determine current and future facility needs.

THIS DOCUMENT SHOULD BE REGARDED AS A WORKING DOCUMENT SUBJECT TO REGULAR REVIEW AND UPDATING AS EACH SECTOR REFINES OR ALTERS ITS STANDARDS, AND AS POLICY CHANGES OCCUR AT THE CITY, NATIONAL AND PROVINCIAL LEVELS WITH RESPECT TO THE DEVELOPMENT OF STANDARDS.

What these standards are:

- A strategic guide for space allocation of facilities at a neighbourhood, district and metropolitan scale;
- A working tool for forward planning to fill the vacuum with respect to a consolidated set of guidelines and standards **which is informed by regular review and updating;**
- A yardstick for comparing districts with respect to facility equity and for measuring progress on service delivery;

- A tool for motivating for new facility requirements and investment to achieve a minimum level of service;
- A starting premise for negotiation with developers and various local, provincial and government departments with respect to land allocation;
- A set of commonly acceptable rules and guidelines for allocation of shared space within the community;
- A guideline of facility types that can be clustered or shared to achieve space saving and other accrued benefits;
- Input parameter for measuring accessibility of people to a range of facilities.

What they are not:

- Recipes for detailed planning of a district without consideration of local needs and context and applicable policies;
- Exact standards to be applied irrespective of context or proper planning processes and consultation;
- A blue-print for development.

In summary the guidelines are applicable with respect to four planning components:

- **Forward planning** - providing an equitable basis for allocation of scarce land and capital budget resources together with limited locational guidelines for distributing various types of facilities and public spaces;
- **Development control** - they provide guidance on the number of facilities required, and their scale and site requirements;
- **Plan implementation** - providing a yardstick to measure sufficiency or need of facilities on a broad scale;
- **Improving quality of life** - ensuring that a full range of facilities and recreational spaces is accessible to all communities, thus contributing significantly to improving the quality of lives in communities.

Context and Approach to Standards and Guidelines

Irrespective of the overarching facility norms applied to allocate scarce land resources or to establish facility backlogs and budgets, when undertaking the detailed planning of neighbourhoods the planners should also make use of the guidelines for the development of individual facilities as outlined in the “Redbook - *Guidelines for Human Settlement Planning and Design*” (it is freely available online at http://www.csir.co.za/Built_environment/RedBook/) or applicable line department documents that take into consideration local population demand profiles and other contextual factors that impact on the quality, location and scale of facilities. However, the normative standards as set out in this document can be applied for the purpose of

land budgeting, capital budget programming and GAP analysis with respect to facility supply or rationalisation.

Normative standards, when provided, should ideally serve four purposes, namely to:

- 1) determine the threshold populations for facilities and basic land requirements;
- 2) serve as a departure point for negotiations with respect to land provision between developers and the City; and,
- 3) provide a basis for developing a spatial distribution network for a facility - but without this being the final determinant of the scale and detail location of a facility which would require more local input.
- 4) prioritise capital investment based on relative backlog with respect to standards.

The standards indicated are shown as typical values, with some sets of upper and lower limits where applicable. In most cases, the facilities' population thresholds are given in terms of the number of people within the area being served which takes the density aspect into consideration. The impact of other specific contexts on facility provision (excluding density) is indicated where relevant. Tables illustrating threshold sizes and distance parameters for differing density contexts that are applicable to social facilities such as clinics, police stations, libraries, swimming pools and sports stadiums (but not schools) have been appended (Appendix B).

Accessibility distance standards are indicative only since consumer choice and increasing levels of mobility result in people choosing to use facilities outside of their local community and in addition few urban areas have regular land use patterns and shapes and facilities that are evenly distributed.

Development of the Standards and Guidelines

Previous research undertaken on standards by CSIR has been updated and reviewed to provide a foundation for the development of specific standards and guidelines tailored to the current and future planning needs of the City of Cape Town. This has included a review of South African and international standards and guidelines, of the facility standards developed for the City of Cape Town during the accessibility modelling project, as well as any related research undertaken for the City of Cape Town.

More information on the theoretical approach followed and detail relating to the sources of information used can be obtained from CSIR's research report for the City of Cape Town (2007) titled "*Schedule of Standards and Guidelines for the Spatial Provision and Development of Social Facilities, Public Institutions and Public Open Spaces in Cape Town*", Report No: CSIR/BE/PSS/ER/2007/0032/B.

Facilities described in these guidelines:

^P indicates primary facilities for which local authorities and/or other government bodies must make specific provision prior to development.

Group	Facility	Pg
Education	Primary Schools	1
	Secondary Schools ^P	4
	Further Education & Tertiary Institutions	7
	Special Education	8
Health	Primary Health Clinics ^P	9
	Community Health Centres with ARV Clinic*	11
	District Hospitals (L1) ^P	11
	Regional Hospitals (L2)	12
	Tertiary/ Teaching Hospitals (L3)	12
Social Facilities	Cemeteries ^P	13
	Informal Urban Agriculture	14
	Local Markets	15
	Early Childhood Development Centres/ Crèches	16
	Children's Homes/ Places of Care	17
	Community Centres ^P	18
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	Worship Centres	20
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	Public Service Facilities	Civic Centres/ City Halls
Municipal Offices		25
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Home Affairs Offices		29
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Libraries ^P		31
ICT Access Points		32
Small Museums		33
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Fire Stations ^P		35
Police Stations ^P		37
Prisons & Places of Safety		38
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Solid Waste Disposal Sites & Recycling Depots ^P		40
Public Open Space	Parks ^P	41
Sports and Recreation	Overall Allocations for Sports Fields & Facilities ^P	43

Education – Primary Schools

“Optimal/ typical” Primary Schools – Summary

<i>Population threshold</i>	5 500 people
<i>Access distance</i>	Max.15 minutes in-vehicle travel time
<i>Site size</i> (National Department of Education 2008)	Min. 2.8ha (including sports fields); If sharing community sports fields - 1.4ha; Two primary schools each of 1.4 ha and sharing sports ground of 2.0 ha - 4.8ha
<i>School size</i>	770 learners
<i>Classroom size</i>	30 learners - Grade R 40 learners - other grades

See table below for site sizes of different school types (proposed by National Education Dept)

Planning
Provincial Department of Works

Implementation
Provincial Department of Education

Description

Public and non-public schools offering: Grades R - 7 (age group 5-12)

Minimum Requirements

No differences in the level of provision across urban and rural locations, although design standards may differ.

(The National Department of Education has put forward an effectiveness norm for schools of 20m² of the school site being used as a food garden.)

Facility Sharing

Increasingly, the benefits of schools and communities sharing facilities such as sports fields, halls and other facilities are being recognised. Unless a primary school can share nearby sports facilities with another primary school or with the community (municipal provision) it should be provided with the basic minimum space for a soccer or rugby field and a space for netball or volley ball (0.9 ha). For effectiveness, this minimum should be doubled. Locating primary and high schools in close proximity is not acceptable to all communities.

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Threshold Issues

Of the total population, about 14% are of primary school going age; therefore a medium sized primary school of about 600 learners would serve a population of 4 000 to 4 500.

The National Department of Education has proposed specific minimum and maximum number of learners for certain school prototypes and associated with these certain minimum and maximum site sizes (see table below). It advocates 620 learners as an optimal primary school size. In the City of Cape Town/metro context, a primary school of approximately 770 learners is a more effective size with respect to land use and distribution.

Proposed National Primary School Types

School prototypes	Minimum capacity (no. of learners)	Maximum capacity (no. of learners)	No. classes per grade	Minimum site size (ha) [includes sports fields of 0.9 ha]	Optimum site size (ha) [includes sports fields of 1.8 ha]
Small primary school	135	310	1	1.9	3.2
Medium primary school	311	620	2	2.8	4.4
Large primary school	621	930	3	3.5	6.2

(National Department of Education 2008)

Note: Deviation down from site size shown above have been successfully motivated in the past.

With respect to the above, the small primary schools would be suitable for rural areas with low development densities and for schools targeting a specialized small target group. Medium sized schools would be appropriate in medium density areas while large schools are the more appropriate vehicle to manage the backlog of schools in high density areas. Two session schooling while not ideal may need to be considered.

Density & Development Context

Residential densities are a critical factor in the provision of accessible facilities to communities. The following table provides illustrative access distances for a primary school of 770 learners serving a local community of 5 500 people (generally primary school population averages 14% of the total population & household sizes are assumed to be an average of 4 people).

Note: [Accessibility distances given in the table below are indicative only since consumer choice and increasing levels of mobility result in people choosing to use facilities outside of their local community and in addition few urban areas have regular land use patterns and shapes and facilities that are evenly distributed].

Typical residential neighbourhood densities* required to achieve certain access distances for a 770-learner primary school	
Persons per ha/ Dwelling units per ha	Distance (km)
55 ppha / 14 du	0.5
14 ppha / 3.5 du	1.0
6 ppha / 1.5 du	1.5

(*the residents per ha within residential areas plus internal distribution roads, local shops, schools, service facilities, parks and recreational space serving local needs)

Other information sources:

“Redbook” - *Guidelines for Human Settlement Planning and Design*. 2000. (available free online at http://www.csir.co.za/Built_environment/RedBook/)

Government Gazette, 21 November 2008, Notice 1439 of 2008, Department of Education, South African Schools Act 84 of 1996, Calls for comments on national minimum uniform standards for school infrastructure

Education – Secondary Schools

“Optimal/ typical” Secondary Schools – Summary	
Population threshold	12 500 people
Access distance	Max. 15 minutes in-vehicle travel time
Site size (National Department of Education 2008)	Minimum 4.8ha (including sports fields); If sharing community sports fields - 2.6 ha.
School size	1 000 learners
Classroom size	40 learners

See table below for site sizes of different school prototypes (proposed by National Education Dept)

Planning
Provincial Department of Works

Implementation
Provincial Department of Education

Description

Public and non-public schools offering: Grades 8 - 12 (age group 13 -17)

Minimum Requirements

No differences in the level of provision across urban and rural locations, although design standards may differ.

(The National Department of Education has put forward an effectiveness norm for schools of 20m² of the school site being used as a food garden.)

Facility Sharing

Increasingly, the benefits of schools and communities sharing facilities such as sports fields, halls and other facilities are being recognised. Unless a secondary school can share nearby sports facilities (municipal provision) with the community it should be provided with the basic minimum space for a soccer or rugby field and a space for netball or volley ball (0.9 ha). For effectiveness, this minimum should be doubled.

Threshold Issues

Of the total population, only about 8% are likely to be both of secondary school going age and to be attending secondary school; therefore a population of 12 500 could be served by 1 large secondary school while an isolated population of 2 500 people may require a small secondary school but this is not ideal.

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The National Department of Education has proposed specific minimum and maximum number of learners for certain school prototypes and associated with these certain minimum and maximum site sizes (see table below). It advocates 1 000 learners as the maximum number of learners for a secondary school. In the City of Cape Town/metro context, a secondary school of 1 000 learners is an effective size with respect to land use.

Secondary School Prototypes

School type	Minimum capacity (no. of learners)	Maximum capacity (no. of learners)	No. classes per grade	Minimum site size (ha) [includes sports fields of 0.9 ha]	Optimum site size (ha) [includes sports fields of 1.8 ha]
Small secondary school	200	400	2	2.6	3.9
Medium secondary school	401	600	4	3.2	4.6
Large secondary school	601	1 000	5	4.0	5.5

(National Department of Education 2008)

With respect to the above, the small secondary schools would be suitable for rural areas with low development densities and for schools targeting a specialized small target group. Medium sized schools would be appropriate in medium density areas while large schools are the more appropriate vehicle to manage the backlog of schools in high density areas. Two session schooling while not ideal may need to be considered.

Density & Development Context

Residential densities are a critical factor in the provision of accessible facilities to communities. The following table provides illustrative values for a secondary school of 1 000 learners for a local community of 12 500 people (generally the secondary school population averages 8% of the total population & household sizes are assumed to be an average of 4 people).

Note: [Accessibility distances in the table below are indicative only since consumer choice and increasing levels of mobility result in people choosing to use facilities outside of their local community and in addition few urban areas have regular land use patterns and shapes and facilities that are evenly distributed]

Typical residential neighbourhood densities* required to achieve certain access distances for a 1 000-learner secondary school	
Persons per ha/ Dwelling units per ha	Distance (km)
125 ppha / 31 du	0.5
31 ppha / 7-8 du	1.0
13 ppha/ 3-4 du	1.5

(*the residents per ha within residential areas plus internal distribution roads, local shops, schools, service facilities, parks and recreational space serving only local needs)

Other information sources:

“Redbook” - *Guidelines for Human Settlement Planning and Design*. 2000. (available free online at http://www.csir.co.za/Built_environment/RedBook/)

Government Gazette, 21 November 2008, Notice 1439 of 2008, Department of Education, South African Schools Act 84 of 1996, Calls for comments on national minimum uniform standards for school infrastructure.

Education – Further Education & Tertiary Institutions

Further Education & Tertiary Institutions – Summary

<i>Population threshold</i>	<ul style="list-style-type: none"> Tertiary institutions that are not universities: 100 000 people Universities: 1 000 000+ people
<i>Access distance</i>	Very little documented information: site & facility sizes relate to demand, below are merely indicative <ul style="list-style-type: none"> Tertiary institutions that are not universities: 1ha Universities: 8ha
<i>Site size</i>	
<i>Facility size</i>	

Description

Higher education - publicly funded universities; offering traditional, technological or comprehensive training (responsibility of National Government);

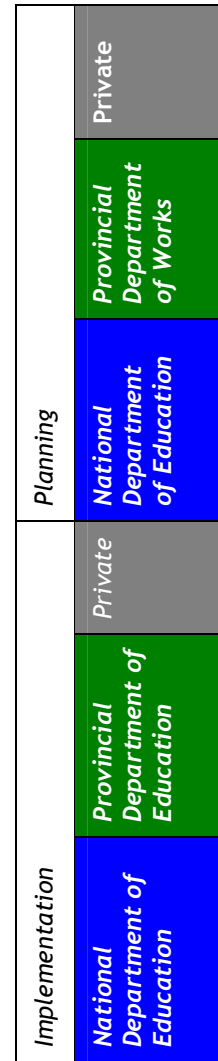
Further Education and Training FET Colleges (responsibility of Provincial Government) & Adult learning centres (ABET), also private sector involvement.

Threshold Issues

Given the high threshold for higher-level education provision, the distribution and quantity of facilities are generally provincially or nationally determined. Major metropolitan areas have sufficient demand for such facilities, but it is unlikely that additional universities and technikons will be required in the medium term. In fact these institutions are being rationalised and consolidated at this time. A needs analysis for such facility development and motivation report would be required.

Trade and specialist training facilities are more likely requirements, which cannot at this stage be quantified. The only guideline in this respect that was sourced is 1 facility/ 30 000 people (Cacadu District Municipality). Similar parameters for development as outlined for special needs schools are likely to apply.

Other information sources: Cacadu District Municipality: *Spatial development framework (2007)* [Online]. Available at: <http://www.plett.gov.za> [Accessed: February 2007].



Education – Special Education

Special Education – Summary

<i>Population threshold</i>	Regional demand - needs driven; World Health Organisation estimates between 2.2% to 2.6% of learners disabled or impaired.
<i>Access distance</i>	
<i>Site size</i>	Site sizes are larger than conventional schools to increase accessibility of the facility and the demand often for residential facilities.
<i>School size (minimum and maximum capacity)</i>	

Description

Catering for special needs education for the physically and mentally challenged.

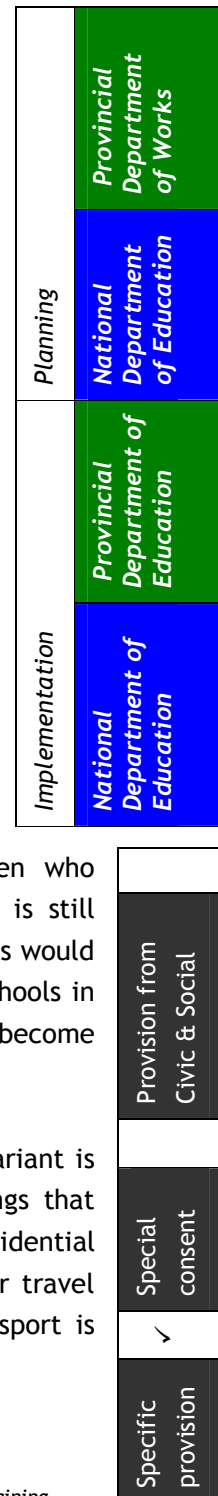
Threshold Issues

This type of facility is generally provided on a regional level and use is often made of an existing site zoned for education (out of the subset of total sites required). Educational policy is to accommodate the disabled in mainstream schooling wherever possible, but for children who require highly specialised care the provision of special needs schools is still supported. As it is proposed by Education that these special needs schools would become part of district support services to become a resource for all schools in the area, locating special schools near other schools is likely to become increasingly important.

The site is developed to suit the needs of the target group. The key variant is that larger sites are generally needed to develop single-storey buildings that accommodate the needs of the users, and that on-site residential accommodation may be required. Given lower levels of demand, longer travel times are inevitable because of sparse distribution and specialist transport is usually provided to one, or more, sites within a city or region.

Other information sources:

Education White Paper 6, July 2001, *Special Needs Education: Building an Inclusive Education and Training System*, Elsen Directorate Department of Education, Pretoria.



“Optimal/ typical” Primary Health Clinic – Summary

<i>Population threshold</i>	optimal 40 000 people (range 5 000 - 70 000 people, largely for those not privately insured)
<i>Access distance</i>	15 minutes in-vehicle travel time or 1.5km walking distance where densities permit
<i>Site size</i>	0.5ha (range 0.2ha - 1.0ha)

[Note: Mobile & Satellite Clinics may be used when demand is too low or too dispersed for a permanently stationed facility that operates for more than 32 hours per week.]

See table below for site sizes of different clinic prototypes & populations served

Planning
 Provincial Department of Works
 Implementation
 Provincial Department of Health

Description

Appropriately equipped permanent facility at which a range of primary health care services are provided for at least 8 hrs per day and 4 days per week.

Public Clinic Prototypes

Clinic type	Minimum site size (ha)	Catchment population
Small to medium sized clinic	0.2	5 000 - 20 000
Large clinic (with or without maternity)	0.5	30 000 - 50 000
Extra large clinic (with or without maternity)	1.0	60 000 - 70 000

(National Department of Health 2007)

Threshold Issues

Public clinics largely cater for the uninsured population (those without medical aid membership or health insurance), thus the socio-economic class of an area and its disease profile will impact on usage rates and demand. Generally, cater for lower income areas where there are more uninsured people. Those in the high income bracket or those who have medical insurance mainly make use of private doctors who deliver a similar service to that of a clinic.

Mobile and satellite clinics may supplement these static clinics in areas where the threshold is less than 5 000 people as a temporary measure but their space/land requirements are more flexible and are thus not dealt with here.

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In metro areas with high development densities mega-clinics serving a catchment area of 100 000 or more people may be required or may be suitable.

Additional Site Requirements

For private facilities - permitted use regulations apply.

Other information sources:

Western Cape Department of Health. *Comprehensive service plan for the implementation of Healthcare 2010* [Online]. Available at: <http://www.capegateway.gov.za> [Accessed: June 2007].

Health – Community Health Centres with ARV Clinic

“Optimal/ typical” Community Health Centres with ARV Clinic – Summary	
<i>Population threshold</i>	60 000 to 120 000 people
<i>Access distance</i>	15-30 minutes in-vehicle travel time
<i>Site size</i>	1.5ha minimum

Description

Open 24 hours a day, 7 days a week, offering broad range of primary health care services including observation beds, accident and emergency, midwifery services but not surgery under general anaesthesia.

Minimum Requirements

Space for an ARV Clinic has been included. Ratio of one Community Health Centre to eight primary health clinics preferred.

Socio economic issues

In high income areas the private sector will provide this service with a similar threshold. Private planning and special consent use apply.

Health – District Hospitals (L1)

Hospitals L1 – Summary	
<i>Population threshold</i>	450 000 people
<i>Access distance</i>	Up to 30 minutes in-vehicle travel time
<i>Site size</i>	5ha

Description

Offers range of outpatient and inpatient services and operating theatre/s; receives referrals from and provides generalist support to clinics and community health centres (e.g. Eerste River Hospital).

Threshold Issues

Provision on a district level - planning should be aligned through District Municipality IDP, or in terms of the Provincial Spatial Development Framework in areas with low population thresholds.

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Health – Regional Hospitals (L2)

Hospitals L2 – Summary

<i>Population threshold</i>	1 000 000 people
<i>Access distance</i>	30-60 minutes in-vehicle travel time
<i>Site size</i>	7ha

Description

Receives referrals from and provides specialist support to a district hospital and provides a specialist service plus diagnostic radiology and anaesthetics (e.g. G F Jooste Hospital).

Threshold Issues

Regional scale - planning should be aligned to support the National Department of Health's hierarchy of service provision.

Health – Tertiary/ Teaching Hospitals (L3)

Tertiary/ Teaching Hospitals – Summary

<i>Population threshold</i>	4 500 000 people
<i>Access distance</i>	Location on key access routes within the metro area is more important
<i>Site size</i>	35ha

Description

Provides specialist and sub-specialist care as defined for level 3 services; receives referrals from and provides sub-specialist support to regional hospitals; public sector definition depends on the range of specialities provided (e.g. Groote Schuur Hospital).

Threshold Issues

Generally planned for on a national or provincial scale - planning should be aligned through District Municipality IDP or Provincial Spatial Development Framework.

[SPECIALIST HEALTH FACILITIES:- These will need to be motivated based on disease statistics and teaching requirements as and when the need is determined. The Health Department documents appear to indicate that facilities, existing or planned, would be upgraded, expanded or otherwise adapted to meet the need of such specialist requirements. These facilities have a high threshold and long travel distances and may serve patients throughout the Province or country, e.g. Red Cross Children's Hospital or Groote Schuur heart unit.]

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Cemeteries – Summary	
<i>Population threshold</i>	100 000 people (regional demand)
<i>Site size</i> (Setplan Strand. June 2007 - personal correspondence. <i>Metropolitan Cemetery Study: Technical Annexure; Section 1: Existing Cemetery Condition & Section 4: Metropolitan Cemetery Requirement.</i>)	15.6 ha over a 30 year period (assumes annual death rate of 1.5%, no reburials for at least 30 years & that 63% of the dead are buried) [2000 graves per hectare or 5 m ² per grave plus additional 10% for circulation, etc.]

Planning Municipality

Implementation Municipality

Description

Land zoned “Public Recreational Space” falling under the jurisdiction of City Parks and set aside specifically for burial purposes, e.g. cemeteries, crematoria, mausoleums.

Site Size

Highly dependent on cultural practices (for instance the acceptability of cremation) and other factors such as the incidence of HIV/AIDS. The site selection of suitable land for burials is critical and requires prior geological studies. Careful consideration needs to be given for allowing multi-purpose use of the land such as use as parkland, grazing, etc. – if acceptable to community.

Formulae to calculate cemetery size:

Step 1 $E = A \times B/1000$;
 Step 2 $X = B1 \times C \times D1$;
 Step 3 $Y = B2 \times C \times D2$;
 Step 4 $Z = X + Y$

E = Total deaths
 A = Total population for which cemetery is planned;
 B = Average amount of deaths per 1 000 of population per year;
 B1 = 40% of E = total deaths of children;
 B2 = 60% of E = total deaths of people over 10 years of age;
 C = a minimum of 30 years;
 D1 = 2,37 m² being gross area of grave for children;
 D2 = 5,33 m² being gross area of grave for adults;
 X = need for graves of children;
 Y = need for graves for adults;
 Z = total area needed for cemetery

Gross areas, including pathways, etc.: 2,37m² for child’s grave; 5,33m² for an adult’s grave. eThekweni Municipality uses 2,4m² x 1,1m² as a standard grave site size. (Source: PPDC 2008)

[NB: The above formulae need to be adapted to take into account the recycling practices of the authority.]

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Social – Informal Urban Agriculture

Informal Urban Agriculture – Summary	
Population threshold	Varied - needs driven
Access distance	Food gardens should preferably be within walking distance of residential areas which require them
Site size	Varied - demand driven, site specific

Description

Land used for agricultural purposes such as food gardens and livestock farming and typically farmed by urban residents within or close by urban areas.

Key Issues

It is important that there is alignment with national initiatives and that institutional support (training and infrastructure) is provided. This service is not universally required.

Site Requirements

Should be managed as part of the recreational space system of a city - it is recommended that an inventory of parcels of suitable vacant or underutilized land be kept. Not all vacant land will of course prove productive in terms of urban agriculture.

Case Study Examples of Abalimi Bezekhaya Cape Town: local township groups made up of 3 to 8 farmers typically farm plots the size of an average classroom, with each group working between four and twenty plots. Schools were found to provide the ideal marketplace for the selling of surplus produce (Harvest of Hope 2010). Projects are also specifically developed under powerlines.

A conceptual design of an agricultural hub which includes a training garden/farm, repair workshop, fresh produce depot, resource centre and offices would require approximately 0.6ha-2ha (PPDC 2008).

A proposal to development of a grazing area for Khayelitsha included - 40ha grazing of which 30ha established grazing and 8ha of kraal facilities (16 holding pens, cattle handling kraal, slaughter house & ablution block) would support 80 cattle and 480 sheep/goats. However, the economic feasibility of such a venture has been questioned as even if land is provided without cost to participants it is likely that their operating costs will have to be subsidised [Tshukudu Consulting (Pty) Ltd. 2003. *A ROAD MAP TO RESOLVE THE ISSUE OF LIVESTOCK KEEPING IN KHAYELITSHA*. City of Cape Town.]

Location Factors

May be intra-urban or in peri-urban areas; on the homestead (on-plot) or on land away from the residence (off-plot), on private land (owned or leased) or on public land (parks, along roads, streams and railways) or on semi-public land (grounds of schools and hospitals) (RUAF Foundation website, 2010).

National Education Department supports the use of part of school sites for food gardens.

Planning Municipality assisted by Dept. Agriculture & Environmental Affairs
 Implementation Private

Provision from Civic & Social
 ✓
 Special consent
 Specific provision

Social – Local Markets

Local Markets – Summary	
Population threshold	5 000 people
Access distance	Within 5 minutes walk of a public transport stop/ activity centre
Site size	Varied - demand driven, site specific; 0.02 ha-4 ha

Planning Municipality

Implementation Private

Description

Accommodate the informal sector & fresh produce sector. Includes a roof, washing areas, lock-up storage for traders, ablution facilities, refuse area. Some include permanent trading stalls.

Site Requirements

Depends on demand - space required for loading & off-loading; aisles wide enough for delivery carts.

Threshold Issues

Demand depends on socio-economic profile of community (higher demand from lower income but higher income communities also use them). Traders prefer areas with higher thresholds and accessibility.

Location Factors

Planning should include research that confirms a reasonable economic basis for a market. Strongly connected to outside pedestrian flows to encourage people to walk through the area.

Other information sources:
 “Redbook” - *Guidelines for Human Settlement Planning and Design*. 2000. (available free online at http://www.csir.co.za/Built_environment/RedBook/)

Provision from Civic & Social

✓

Special consent

Specific provision

Social – Early Childhood Development Centres/ Crèches

Early childhood development centres/ Crèches – Summary

Population threshold <i>(demand highly dependent on age structure of community & usage rates)</i>	2 400 people in low income areas 3 000 people in middle to high income areas
Access distance	700 metres
Site size	0.013 ha to 0.05 ha (at 0.15 m ² per residential population)
Facility size <i>(City of Cape Town Council Policy 2007)</i>	Play lot: min 20-30 m ² ; Indoor & outdoor areas: Indoor free 2m ² & outdoor 2 m ² per 12-24 months baby; Indoor free 1.5 m ² & outdoor 2 m ² per 2-6 years child; After School: 2.5 m ² indoor free & 3 m ² per child. [If no outdoor space add 1 m ² per child to indoor space; Indoor free space excludes furniture]

Planning Private

Implementation Private

Description

Any centre providing a programme for the care of more than six young children - can include day-care centre, crèche, nursery school, play school, after-care, etc. [Centres which provide for 6 or less children not required to register; <25 children classified as a small-scale centre; 25 or more children classified as a large-scale centre.]

Threshold Issues

Demand is very dependent on social structures within communities and may vary widely.

Other information sources:

City of Cape Town Council Policy for Crèches, Nursery Schools & Educare Centres Available at: <http://www.capetown.gov.za> [Accessed: June 2007]

“Redbook” - Guidelines for Human Settlement Planning and Design. 2000. (available free online at http://www.csir.co.za/Built_environment/RedBook/)

Department of Social Development & UNICEF, May 2009, Guidelines for early childhood development services. Accessed at: <http://www.info.gov.za/view/DownloadFileAction?id=70066>, Accessed on: 12 March 2010

Provision from
Civic & Social



Special
consent

Specific
provision

Social – Children’s Homes/ Places of Care

Children’s Homes/ Places of Care – Summary

Population threshold	60 000 people
Site size	1ha

Description

Provides housing for children that have been orphaned, abandoned or placed in care by the State and their caretakers.

Threshold Issues

Provision in terms of the development framework and statistics regarding homeless children or children placed in Care.

Location Factors & Site Requirements

Generally, smaller homes that house fewer children in a setting that is more like that of a residential family home and clustered to form a homestead is recommended. It is important that the Homes are situated within the children’s communities rather than in isolated locations.

Planning Issues

Planning for this takes place in terms of permitted use and any planning and motivation is required to be area specific.

Land is often provided from the allocation that is set aside for public housing but preferably it should be sourced from a pool of land set aside for civic and social facilities. Building costs in particular are found to be problematic for the service provider. In many cases additional subsidies are required on top of the normal government grants for operational purposes.

Planning Private or NGO

Implementation Private or NGO



Provision from Civic & Social



Special consent

Specific provision

Social – Community Centres

“Optimal/ typical” Community Centres – Summary

Population threshold	30 000 people
Access distance	15 minutes in-vehicle travel time (urban) 30 minutes in-vehicle travel time (rural)
Site size	0.2ha - 0.5ha

Description

Centre or hall for holding public meetings, training, entertainment and other functions and having a variety of facilities such as kitchen, toilets, storage space, etc. which is provided for at nominal rates of hire with rentals tied to the socio-economic status of the area to provide an affordable service.

The City of Cape Town has graded its community centres depending on their size and the facilities they offer as A, B, C, D or E-grade community centres. E-grade community centres are the smallest type and besides hall space do not offer any additional facilities such as toilets, kitchen, while A-grade community centres are the largest, offering many facilities and form part of a civic centre. General capacities (people served) for the community centres are:

A-grade = 60 000; B-grade=30 000; C-grade = 20 000; D-grade = 15 000; E-grade = 10 000 people.

A, B and C-grade halls have kitchens and seating and are thus suitably equipped to host a wide range of events (training, social gatherings, entertainment, etc). D and E-grade halls are less well equipped and thus have limited functionality.

Higher order halls could with careful planning have a dual function providing indoor sports facilities and/or be shared with an adjoining school. [Depending on the availability of land in an area the land for community centres may come from the recreational space land provision budget.]

Threshold Issues

In areas of lower density smaller halls (but with most facilities) could be provided at lower thresholds (i.e. 15 000 to 20 000) so travel distance does not exceed 30 minutes. In higher income areas, although there may be access to private facilities, there is still a need for halls to be provided either at a library or other community facility particularly for domestic workers in the area, etc. who require an affordable venue.

Key Issues

Community centres should as far as possible be built and operated to allow for multi-use of the facilities so for instance they are not simply meeting rooms but have facilities for training, the performance arts, etc.



Social – Major Public Venues

Major Public Venues (excluding sports stadia) – Summary

Population threshold	1 000 000+ people
Site size	2ha - 4ha

Description

Large scale public venue capable of hosting international and national events (mainly non-sporting) as well as local exhibitions, conferences, expositions, concerts, etc.

Minimum Requirements

Site and demand specific – business plan required.

Threshold Issues

Provincial and national demand is also considered for certain events.

Location Factors

Key factor is location on main roads served by public transport routes.

Planning	Private
	Municipality
Implementation	Private
	Municipality

Provision from Civic & Social
✓
Special consent
Specific provision

Social – Worship Centres

Worship Centres – Summary

<i>Population threshold</i>	3 000 - 6 000 people
<i>Access distance</i>	Varies depending on popularity and service provided; 2km typical maximum.
<i>Site size</i>	0.15ha - 1ha

Description

Formal places of worship.

Threshold Issues

Varies with demand and cultural practices.

Location Factors

Sharing of parking space with other facilities such as schools is a major 'space saver'. Hall space can also be shared.

Site Requirements

Varies according to specific requirements of denomination and use of buildings, for instance a far larger site is required if there is a religious school attached. A guide is approximately 1m² to be provided per person.

Development Context

In lower income areas, use is often made of sites or buildings with other uses so that there is no requirement to reserve land unless high land prices would preclude access to land.

No specific site needs to be provided – can convert as required although larger denominations do require large plots which may be difficult to find in developed areas.

Planning Private or NGO

Implementation Private or NGO

Provision from
Civic & Social

✓

Special
consent

Specific
provision

Social – Initiation Sites

Initiation Sites – Summary	
Population threshold	Sector demand specific
Site size	For example - 7 ha site adjacent to Athlone Power Station.

Planning	Private
	Municipality
Implementation	Private
	Municipality

Description

Site for holding initiation ceremonies and accommodating initiates and other parties involved.

Key Issues

Separate sites needed for initiates from different communities, i.e. Xhosa and Sotho initiates.

Access to drinking water and water for washing required.

The burning of the temporary huts is problematic in terms of where an initiation site can be located, for instance in a conservation area (this derailed the Driftsands Nature Reserve PGWC project).

Location Factors

Ideally close enough so families can support and deliver food to initiates but requires a secluded area. Not suitable for clustering with most facilities because of seclusion requirements, such as an area where women, etc. are not allowed even when the site is not being used for initiation.

Other information sources:

Umtha Strategy Planning & Development Consultancy. 2002. *The Driftsands Initiation Village - Pilot Project. Reports and attendance registers on community meetings held.* Department of Environmental Affairs & Development Planning, Western Cape Nature Conservation Board, and City of Cape Town.

Provision from Civic & Social
Special consent
✓
Specific provision

Social – Homes for the Aged

Homes for the Aged – Summary	
Population threshold	50 000 people
Site size	2ha

Description

Provides housing for the aged and may incorporate frail care and nursing facilities.

Government no longer provides funding for establishing facilities but private operators (such as churches or NGOs) may apply for government subsidisation.

Threshold Issues

Provision in terms of the development framework and population statistics regarding the aged. May be increasing demand in future and greater intervention required by government as aged cannot afford private facilities and may receive less support from their families because of the impact of AIDS.

Location Factors

Within residential areas so that residents remain part of their community and are close to shops and other amenities if possible.

Site Requirements

Preferably flat land so as to ensure independent access with wheelchairs, walkers and other mobility aids.

Planning Private or NGO
Implementation Private or NGO

Provision from Civic & Social
✓
Special consent
Specific provision

Social – Hospices & Adult Care Centres

Hospices & Adult Care Centres – Summary

Population threshold	50 000 people ?
Site size	0.5ha

Description

Provides preventive, palliative and special care outside of the normal government provided health care services.

Threshold Issues

Provision in terms of the development framework and population statistics regarding disease and disability statistics. May be increasing demand in future and greater intervention required by government because of the impact of AIDS.

Location Factors

Within residential areas so those requiring treatment have easy access and remain part of their community.

Private or NGO
Planning

Private or NGO
Implementation

Provision from
Civic & Social



Special
consent

Specific
provision

Public Service – Civic Centres/ City Halls

Civic Centres/ City Halls – Summary

<i>Population threshold</i>	200 000 people
<i>Access distance</i>	30 minutes in-vehicle travel time
<i>Site size</i>	1ha - 2ha

Description

Main civic or municipal centre, usually includes a reception, offices, canteen, ablutions, town hall, meeting rooms and Council Chamber. Could be combined with municipal offices in one complex.

Site Requirements

Depends on the size of the municipality or district being served and whether the offices are a component of a multi-purpose centre.

Planning
Municipality

Implementation
Municipality



Provision from
Civic & Social

Special
consent

Specific
provision

Public Service – Municipal Offices

Municipal Offices – Summary

<i>Population threshold</i>	1 per sub-region/ 500 000 people
<i>Access distance</i>	Centrally situated within sub-region
<i>Site size</i>	0.3ha - 1ha

Description

Regional offices of municipality dealing with daily operational issues and needs. In large municipal areas there may often be satellite offices as well.



Public Service – Thusong Service Centres

Thusong Service Centres – Summary

<i>Population threshold</i>	500 000 people (or lower in certain areas)
<i>Access distance</i>	40 minutes in-vehicle travel time
<i>Site size</i>	Varies depending on range of services offered & facilities provided; Min. floor area 0.06ha translates into site area of approx. 0.16ha -0.2ha (PPDC 2008).

Description

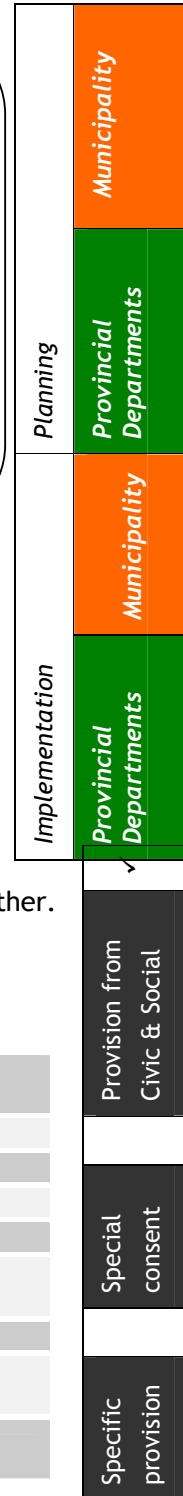
Provide information and services to rural and urban communities and form a hub within communities at which a multitude of government services (local, provincial and national) and other community services can be accessed.

Location Factors

Each Centre is unique (depending on community needs) and may be located either in a single building or as part of a cluster of buildings. If facilities cannot be provided on one site they should be within a 1km radius of each other.

Possible office sizes - internal floor areas only (PPDC 2008)

Government Institution	Office sizes
Home affairs	62m ²
Social Welfare	42m ²
Dept. of Labour	42m ²
Dept. of Health	42m ²
Vehicle Licensing	42m ²
GCIS Office	42m ²
Computer Centre	60m ²
South African Police Services	42m ²



**Example of the possible services that can be provided at a Thusong Centre -
The Archie Gumede Thusong Centre KwaZulu-Natal**

Home Affairs	Metro Police
Social Development	Education and Training : Elangeni College
Health	Clinic
GCIS	Post office (across the road from Centre)
Justice Department	Municipal services
Pension Payout Point	Community Hall
Soup Kitchen	Parliamentary Constituency office
Siyabathanda Special School	TeleCentre
Library	General Services Counter

(Source: <http://www.pmg.org.za/node/19409>, Accessed: 2/3/2010)

What are Thusong Service Centres?

Thusong Service Centres are one-stop centres where local, provincial and national government, as well as other sector service-providers, offer Services and developmental information to local communities. These centres operate within a framework of Batho Pele principles and values. This means communities around Thusong Service centres identify Services offered by the centre based on their needs. Each centre is different and can either be located in a single building, or be part of a cluster of buildings. The infrastructure is influenced by the Services offered, population size and distances between access points in an area. This results in the establishment of hub centres which offer permanent Services including, government, economic, community and private sector Services, education and skills development, telecommunication, communication and information. Satellite centres and mobiles which are extensions of the hub centre, offer some of the above Services according to demand.

What Services are rendered by Thusong Service Centres?

Government departments and others sectors offer information and Services at the Thusong Service Centres. However, these differ from centre to centre according to community needs. The types of Services you can find include:

- Government Services such as applications for identity documents, passports, death and birth certificates, pensions, welfare grants, unemployment insurance, information on issues such as health, government structures and organisations, labour issues, citizen rights, education, contact information, etc.
- Telecommunication Services such as: gateway portal, computers, internet, e-mail, Information Terminals (PITs). This helps communities to use technology to better their lives.
- Education and skills development training Services such as: Computer Training, Adult Basic Education Training (ABET), opening a business, sewing, art, etc.
- Partnership Services such as: commercial and community Services which include community banking, craft shops, women's clubs, food production programmes, etc.
- Two-way communication between government and citizens. The community can share their views on government programmes, policies and activities. They can make their needs known through izimbizo, community meetings and workshops, youth forums, women's groups, disabled persons meetings, meetings of senior citizens, etc.
- Local economic development activities including meetings, workshops, community and commercial businesses in the centres

Source: <http://www.thusong.gov.za> accessed on 2 March 2010

Public Service – Home Affairs Offices

Home Affairs Offices – Summary

<i>Population threshold</i>	Max. 200 000 people
<i>Access distance</i>	Maximum in-vehicle travel time 30 minutes
<i>Site size</i>	0.05ha if regional office serving 140 000 people or more

See table below for different Office prototypes & populations served

Description

Providing a service delivery point where the public can access Home Affairs services, information and/or transact services.

Home Affairs Office prototypes

Home Affairs Office type	Min. population served	Max. population served
Regional Office large	-	200 000
Regional Office Average	-	140 000
District Office - Average	80 000	140 000
District Office - Small	40 000	80 000
Permanent Service Point	20 000	40 000
Thusong Service Centre	20 000	40 000

(National Department of Home Affairs 2009)

Planning
Provincial Department
of Works

Implementation
National Department of Home
Affairs



Provision from
Civic & Social

Special
consent

Specific
provision

Public Service – Post Offices

Post Offices – Summary

<i>Population threshold</i>	10 000 people
<i>Access distance</i>	15 minutes in-vehicle travel time or 1km walking distance
<i>Site size</i>	0.01ha shop space/ 0.03ha land

Description

Providing a service delivery point where the public can access Post Office services, information and/or transact services.

Site requirements

Generally being moved into shopping centres so rentals becoming a determining factor for size.

Planning
South African Postal Services

Implementation
South African Postal Services



Provision from
Civic & Social

Special
consent

Specific
provision

Public Service – Libraries

“Optimal/ typical” Libraries – Summary

<i>Population threshold</i>	40 000 people (Can be incrementally increased to 70 000 depending on catchment density)
<i>Access distance</i>	15 minutes in-vehicle travel time (urban) 30 minutes in-vehicle travel time (rural)
<i>Site size - examples</i>	0.05ha (Minimum 0.03ha) Varies depending on facilities provided & if stand-alone building

See table below for site sizes catering to different population thresholds

Description

Public Libraries provide resources and services in a variety of media to meet the needs of the general public for education, information and personal development. They generally house fiction and non-fiction books for lending and reference purposes as well as having facilities such as study areas, meeting rooms, and may provide the public with access to computers and the internet.

[Mobile libraries & container libraries may be used in areas of dispersed demand or to supplement existing services when required. Their space/land requirements are more flexible and are thus not dealt with here. Also, school libraries may be used as outreach points.]

Threshold Issues

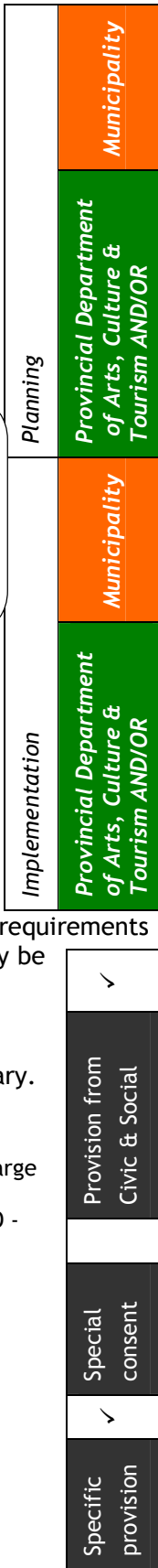
Preferable not more than 70 000 people should be served by a local type library.

Library thresholds	Site size examples
20 000	0.05ha
40 000	0.1ha
60 000	0.2ha
100 000*	0.56ha

*Libraries of a higher order such as those housing large reference collections have a threshold of about 100 000 persons and would require 0.56ha (UNESCO - Dept. Arts & Culture).

Other information sources:

Department of Arts and Culture, August 2007, Norms and Standards - Phase 3 of 3



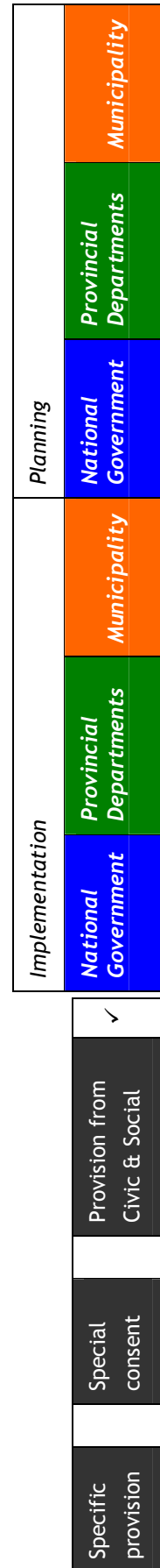
Public Service – ICT Access Points

ICT Access Points – Summary

<i>Population threshold</i>	20 000 people
<i>Access distance</i>	15 minutes in-vehicle travel time (urban) 30 minutes in-vehicle travel time (rural)
<i>Site size</i>	Suggest incorporation into libraries and/or other public facilities

Description

Provision of access to Information and Communication Technologies, including internet access, computers and telephones.



Public Service – Small Museums

Small Museums – Summary

<i>Population threshold</i>	50 000 people
<i>Access distance</i>	30 minutes in-vehicle travel time
<i>Site size</i>	Site & purpose specific

Description

Centres for conservation, study and reflection on heritage and culture, generally provide visual displays of artefacts and artwork to the public and may have interactive and interpretive exhibits often concentrating on area specific collections.

Location Factors

Location very important as museums often provide a sense of place to a community and provide a focal point for attracting other activities such as tourism services, places of entertainment, etc.

Can be located at libraries and civic centres unless located in a purpose built or historical building or site.

Key Issue

Require an inventory of heritage and cultural sites for their future preservation and development.

Planning

Municipality

Provincial Department
of Arts, Culture &
Tourism AND/OR

Implementation

Municipality

Provincial Department
of Arts, Culture & Tourism
AND/OR

✓

Provision from
Civic & Social

✓

Special
consent

Specific
provision

Public Service – Performing Arts Centres

Performing Arts Centres – Summary

<i>Population threshold</i>	50 000 people
<i>Access distance</i>	30 minutes in-vehicle travel time
<i>Site size</i>	Site & purpose specific

Description

Centres providing training for the performing arts and including facilities for performing shows and exhibiting art works.

Location Factors

Location very important as the performing arts centres should provide a sense of place to a community and provide a focal point for attracting other activities such as tourism services but should also be placed so that access by the local community is facilitated.

Key Issue

Possibility of using community centres or converting them to accommodate this function - particularly if they are being underutilized.

Planning	Municipality
	Provincial Department of Arts, Culture & Tourism AND/OR
Implementation	Municipality
	Provincial Department of Arts, Culture & Tourism AND/OR

✓
Provision from Civic & Social
Special consent
Specific provision

Public Service – Fire Stations

Fire Stations – Summary

<i>Population threshold</i>	100 000 people (indicative only, overriding factor is reach & density)
<i>Access distance</i>	Response times & area risk classifications major considerations for location of fire station (see details below)
<i>Site size</i>	0.3ha suburban station 1.2ha regional headquarters

Planning
Municipality

Implementation
Municipality

Description

Structure or area for storing firefighting apparatus (vehicles and other equipment), and where firefighters are stationed and may include limited dormitory facilities and work areas such as meeting rooms, workshop, practical training areas, gymnasium, etc.

Risk categories and their response times

Risk category	Broad land use / development type	Required response time
A – High	CBD; extensive commercial and industry	Within 8 minutes
B – Moderate	Limited CBD; smaller commercial or industry	Within 10 minutes
C – Low	Residential (of conventional type)	Within 13 minutes
D – Rural	Vegetation and limited buildings in remote areas	Within 23 minutes
E – Special	Various, including noxious industries, squatter areas, large shopping centres	Must be reached within time associated with development type, but are generally high risk – thus 8 minutes

Provision from
Civic & Social

Special
consent



Specific
provision

[The above required response times include the provision of 3 minutes for the capturing of the call and mobilising a resource to deal with the reported emergency]

Area Coverage of Fire Station

The table below gives the average area that a fire station can effectively reach based on the average travelling speeds on a road network and a single land use (risk category) for the area being considered. One should always use the criteria for the highest risk category found in the area for calculation purposes.

Risk category	Ha coverage per station ¹		
	25 km/h ²	35 km/h ²	50 km/h ²
A - High	800	1500	3 000
B - Moderate	1 500	3000	6 000
C - Low	3 000	6000	12 000
D - Rural	12 000	24000	48 000
E - Special	800	1500	3 000

Source: Based on SABS 10090:2003 Edition 3. Extracted and converted to hectare equivalents from Table 3 -Examples of station areas. Average road-based travel speeds.

Location Factors

Good access to major transport routes - without local traffic congestion to allow for rapid response, i.e. outside the core development area but still nearby. Requires proximity to utilities (power, water, waste reticulation, etc.). Possible co-location with other similar services.

Site Requirements

To be situated on flat land as far as possible or on land that requires minimal reconstructive work, e.g. backfilling, levelling.

Public Service – Police Stations

Police Stations – Summary

<i>Population threshold</i>	60 000 people
<i>Access distance</i>	5 kms or 15 minutes response time
<i>Site size</i>	0.1ha - 1ha

Description

A building which accommodates police officers and other members of staff of SAPS or Metro police. Often contains offices, temporary holding cells and interview rooms and may provide living quarters for personnel on-site.

Threshold Issues

To improve visible policing and response times 1 station per 30 000 people is considered desirable by planners. Current averages are approximately in line with 1:60 000 as proposed by Behrens & Watson (1996) and others.

Location Factors

Good access to community being served.

Density & Development Context

Threshold may be reduced in areas of high crime.

Other information sources:

Behrens, R. & Watson, V. 1996. *Making urban places: Principles and guidelines for layout planning*. Cape Town: UCT Press.

Planning	Municipality
	National Department of Safety and Security
Implementation	Municipality
	National Department of Safety and Security
	✓
	Provision from Civic & Social
	Special consent
	✓
	Specific provision

Public Service – Prisons & Places of Safety

Prisons & Place of Safety – Summary	
Population threshold	Highly dependent on criminal profile of communities & workings of justice system
Access distance	Proximity to courts important in terms of awaiting trial prisoners
Site size	2 - 5 ha depending on demand

Planning
National Department of Safety & Security

Implementation
National Department of Safety & Security

Description

Places for the detention and imprisonment of convicted criminals and awaiting trial inmates.

Threshold Issues

Planning is undertaken on a national and provincial basis by government. Limited need for general inclusion in planning requirements - developed on an as required basis on the basis of a motivation report but will need to be accommodated on request.

Location Factors

Generally prison facilities are built on a large scale requiring extensive tracts of land and because of community sensitivities around prisons being located nearby or within residential areas are often located outside urban areas in remote locations.

Provision from Civic & Social	✓
Special consent	✓
Specific provision	

Public Service – Magistrates Courts

Magistrates Courts – Summary	
Population threshold	No agreed common norms - Department of Justice considers proximity to users, political issues, case loads of courts & crime hot spots. Should be aligned in terms of municipal boundaries.
Access distance	
Site size	

Planning
National Department of Safety & Security

Implementation
National Department of Safety & Security

Description
Are the lower courts and the courts of first instance and are divided into regional courts and district courts.

Threshold Issues
Planning is undertaken on a national or provincial basis by government.

✓

Provision from Civic & Social

Special consent

Specific provision

Public Service – Solid Waste Disposal Sites & Recycling Depots

Solid Waste Disposal Sites & Recycling Depots – Summary

<i>Population threshold</i>	Determined by demand & site-specific factors; solid waste disposal sites usually of regional nature.
<i>Access distance</i>	
<i>Site size</i>	

Planning Issues

Solid waste disposal sites usually space intensive (A landfill site with a 20-year lifespan covers approximately 100 ha & should have an 800m buffer around it).

Can be incorporated within recreational space system with careful design (e.g. Mariannhill Landfill Site declared a conservancy)

Essential facilities that must be planned for within the Municipality's Integrated Development Plan.

Require professional engineering advice & environmental impact assessment.
(Source: PPDC 2008)

Recycling Depots – currently being accommodated through existing structures for instance at schools, shopping centres, etc. This service is currently dependent on demand and support from the public.

Planning Municipality

Implementation Municipality

Provision for Specific Civic & Soc provision

Special consent



Public Open Space – Parks

Parks – Summary			
<i>General provision</i>	0.6ha per 1 000 people		
<i>Hierarchy of park types</i>	<i>Three levels of provision</i>	<i>Allocation of total provision/ 1 000 people</i>	<i>Access distance</i>
	<ul style="list-style-type: none"> • Neighbourhood Parks • Community Parks 	0.4ha*	20 mins walk
	<ul style="list-style-type: none"> • District/ Regional Parks 	0.2ha*	20 mins travel time by public transport

(* see Key Issues below)

See table below for site sizes of different park prototypes, possible thresholds & catchment areas

Planning Municipality

Implementation Municipality

Descriptions

Recreational Space – public recreational space that is provided for the benefit and use of the public and for which no charge is levied; the space should be usable and accessible for most of the year.

(Provision of recreational space within housing complexes, cemeteries, detention ponds, river corridors, mountains and road reserves – although providing visual relief – is excluded from the above provision rates, i.e. the rates are over and above such open space provision.)

Parks – Landscaped recreational space with recreational facilities which serve the public; may include passive or active recreational areas but currently excludes sports fields.

- **Neighbourhood Parks** (including pocket parks & public squares) are smaller park spaces serving the immediate local community/ neighbourhood (within walking distance); focused on informal recreation including play equipment and kick-about areas.
- **Community Parks** are larger landscaped park spaces with informal and formal recreational facilities - generally multifunctional and serving several surrounding local communities or suburbs.
- **District/ Regional Parks** are large-scale multi-functional parks, meeting the wide ranging needs of the district/ regional community and preserving unique and often extensive landscapes.

Planning Municipality	Implementation Municipality
Provision from Civic & Social	Special consent
Specific provision	Specific provision

Key Issues

The provision ratios provided in the table above (marked with *) could be lowered if parks are clustered with sports fields, besides which the multi-use of parks leads to increased levels of security and maintenance in general.

The recent survey of park usage and perceptions towards them by Cape Town residents (CSIR 2010) indicated that if parks cannot be well-maintained and proper provision made for them that people would prefer to have access to fewer but larger parks that are better maintained and secure rather than being provided with many small parks that are unkempt and lack facilities.

Illustrative Provision of Parks for 60 000 People

Possible number of neighbourhood and community parks that can be provided for 60 000 people at 0.4ha per 1 000 people at different levels of provision			
Park type	Threshold level at which provided	Ha/ one facility (optimum size)	Number of parks
Neighbourhood - small	3 000 people	1.0ha	16
Neighbourhood - large	15 000 people	1.5ha	3
Community Parks	60 000 people	3.5ha	1
<i>At a district level - a further 12ha can be provided for 60 000 people (based on the 0.2ha/ 1000 allocation)</i>			

Examples of Park Prototypes

Park hierarchy	Park type	Typical threshold	Minimum site size (ha)	Optimum site size (ha)	Catchment area
Neighbourhood Parks:	Play/ pocket park	800	0.04ha	0.1ha	0.5km
	Playground (including play equipment)	4 000	0.4ha	1.0ha	0.5km
	Local/ Neighbourhood	6 000	0.8ha	2.0ha	0.75km
Community Parks		20 000	1.5ha	8-20ha	1.5-3km
District/ Regional Parks		50 000	2ha	40ha	>10km

(Source: PPDC, Redbook & others)

Sports & Recreation – Overall Allocations for Sports Fields & Facilities

“Optimal/ typical” Sports & Recreation Overall Allocations – Summary

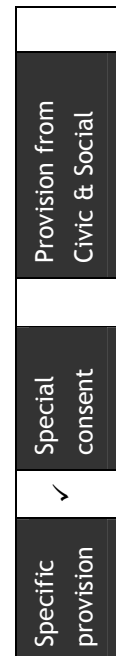
General provision	0.56ha per 1 000 people (+ additional 0.3/0.4ha per 1 000 in metropolitan areas for higher order facilities)		
Possible hierarchy of provision - in certain contexts preferably to accumulate & provide higher order facilities to greater population <i>(source: CPA 1989 & CSIR 2007)</i>	<i>Scale & level of provision</i>	<i>Proportional allocation of total provision/ 1 000</i>	<i>Threshold (no. of people)</i>
	• Neighbourhood	0.23ha	3 000
	• Community/ Sub-district	0.21ha	15 000
	• District/ Sub-metro	0.12ha	60 000
	• Metro/ regional	0.3/0.4ha	120 000

See table below for typical facilities that can be provided for 60 000 people at this rate of provision



Specific Sport Infrastructure Types

Type of sport facility	Typical threshold (no. of people)	Site size (ha)	Description
General facilities provided for from the 0.56ha budget			
Multi-purpose sports halls (see table below for details)	15 000	0.15	Hall for indoor sports, such as badminton, hockey, basketball, etc. & other recreational purposes
Swimming pools	60 000	0.18	Minimum for pool of dimensions 12.5 x 25m
Sports complexes	60 000	1.5-2.5ha	Grouping of fields and/or sport facilities
Higher order facilities provided for from the 0.3/0.4ha accumulated budget			
Sport stadia	300 000	3.0	With athletics track & 3 000 spectator pavilion
Regional sports arenas (Indoor sports halls)	250 000 - 500 000	0.50	Large scale indoor arena, may also host non-sporting events
International sports complex	1 500 000	3.0ha	Capable of hosting national, international and special events



Description

Active recreation areas including formally provided and maintained playing fields for soccer, rugby, hockey, etc., playing courts, indoor sports halls and stadia. May include ablution facilities, seating, parking, a tuck shop and club house.

Sharing with Schools

The use of school facilities by the general public in areas where there is a shortage of sporting and recreation facilities may alleviate shortages and improve maintenance and control issues. However, in these areas it is likely that schools will themselves be lacking their own sporting fields and facilities and will require access to those provided to the general public. Newly built facilities such as multi-purpose sports halls and complexes that lie adjacent to, close to or are part of school properties allow for cost and land savings.

Sports facility types

In a metropolitan area it is recommended that for each 120 000 persons one facility per type clustered together should be upgraded as a regional facility, i.e. a major sports complex with floodlight facilities and an Olympic size swimming pool or where appropriate a water sports centre.

The table below gives an example of the number of sport facilities of various scales that can be developed given a 0.56 ha/1000 persons land allocation for sport and recreation for a total population of 60 000 people. This allocation excludes land provision for community centres, but could include sports halls and other small-scale covered facilities as part of the land allocation.

Possible number of outdoor sports facilities or equivalents* that can be provided for 60 000 people at 0.56ha per 1 000 people at different levels of provision					
Sports facility types	Ha/ one facility	Number for Neighbourhood	Number for Community/ Sub-district	Number for District/ Sub-metro	Total number
Soccer practice fields	0.55	20	4	0	24
Soccer fields with 500-spectator pavilion	1.5	0	4	4	8
Stadium (soccer field, athletics track & pavilion for 3 000)	3.0	0	0	1	1
Tennis courts	0.065	10	8	2	20
Combi-court	0.065	20	16	0	36
1 cricket oval/ 1 baseball/ 2 softball fields	1.6	0	2	1	3
Netball fields	0.065	10	0	2	12
Swimming pools (12.5 x 25m)	0.18	0	0	1	1

(source: CPA 1989 & adapted by CSIR 2007 & 2010)

[**equivalents*: the type of facilities provided would depend on community needs and participation patterns, thus these facility types are not prescriptive but simply demonstrative and any other equivalent facility types in terms of field sizes can be substituted depending on the development context. See below for formal sports field dimensions for common outdoor sports fields]

Multi-purpose Sports Halls - Building Sizes & Capacities

[Source: Sport England (2010) & followed by National Dept. of Sport & Recreation South Africa (2008)]

Sports hall configuration*	Typical threshold (no. of people)	Min. hall area (ha)	Building size (ha)**	Description
Single-court hall	< 15 000	0.018	0.042 (no stage) 0.054 (with stage)	Not recommended - limited multi-purpose potential; audience capacity 180
Two-court hall	< 15 000	0.036	0.072	audience capacity >300
Three-court hall	-	0.0486	Not recommended unless site area restrictive as four court hall are only 20% larger but far greater potential range sports	
Four-court hall	15 000 - 25 000 [^]	0.0594	0.094	Good size for range of sports #, sufficient size for school of 400 to 1100 pupils
Six-court hall	25 000 - 50 000 [^]	0.0918		
Eight-court hall	50 000 - 65 000 [^]	0.1221		Increased ceiling height demands; for sports with limited space requirements (e.g. table tennis) allows for 1 000 seated spectators & often used non-sports events
Nine-court hall		0.1377		More scope indoor hockey, football (six-a-side), handball, athletics & gymnastics
Twelve-court hall		0.1782		Small regional arena & spectator venue for local competitions; over 700 seated spectators for e.g. handball, hockey but more for other sports & entertainment

[* Conventionally configured in terms of badminton court dimensions as this is generally the most stringent code operating in these types of facilities;

** Includes space for storage, ablution facilities, changing areas and stage;

Can house 4 badminton courts, 1 basketball court, 4 cricket nets, 2 gymnastic floors, 1 indoor hockey pitch, 2 judo floors, 6 trampolines, 4 table tennis tables, 1 volleyball court;

[^] Typical threshold levels sourced from The Government of the Hong Kong Special Administrative Region (2006)]

**Formal Sports Fields Dimensions for
Common Outdoor Sports Fields**
(note - not strictly required for informal
sporting activities)

Sporting code	Formal field dimensions
Soccer	65x105 m (6 825 m ²)
Rugby	69x125 m (8 625 m ²)
Cricket oval	128x128 m (16 384 m ²)
Hockey	50x87 m (4350 m ²)
Volleyball	9x18 m (162 m ²)
Basketball	14x26 m (364 m ²)
Netball	15x30 m (450 m ²)

(Redbook Chp 5.4, p. 11)

Other information sources:

Redbook - Guidelines for Human Settlement Planning and Design". 2000. (available free online at http://www.csir.co.za/Built_environment/RedBook/)

Setplan North End. 2000. *Audit, analysis and strategic assessment of standards for the provision of public recreational space and recreational facilities*. Prepared for Port Elizabeth Municipality. *Report no. B0001*.

Sport England. 2010. *Sports Halls: Sizes and Layouts*. Available at: <http://www.sportengland.org>, Date accessed: 25 February 2010.

Sport England. 2010. *Village and Community Halls*. Available at: <http://www.sportengland.org>, Date accessed: 25 February 2010.

The Government of the Hong Kong Special Administrative Region. 2006. *Hong Kong Planning Standards and Guidelines*. Available at: <http://www.sportengland.org>, Date accessed: 12 February 2007.

MAIN REFERENCES

Several different sources were used in this compilation but the main, and in our view the most applicable and comprehensive, are:

- Department of Housing. 2000. "The Redbook" - *Guidelines for Human Settlement Planning and Design*. Pretoria: CSIR.
(available free online at http://www.csir.co.za/Built_environment/RedBook/)
- Green, C.A. & Argue, T.C. 2007. *Schedule of Standards and Guidelines for the Spatial Provision and Development of Social Facilities, Public Institutions and Public Recreational Space in Cape Town*, Document No. CSIR/BE/PSSS/ER/2007/0032/B. Stellenbosch: CSIR.
- Green, C.A., Mans, G. & McKelly, D. 2010. *Evaluation of community social facilities and recreational space in City of Cape Town*. Document No. CSIR/BE/PSSS/ER/2010/0017/B. Stellenbosch: CSIR.
- The Planning Initiative Team. 2008. *Guidelines for Planning of Facilities in KwaZulu-Natal*, Provincial Planning & Development Commission - Standard Series Volume 84. Pietermaritzburg: KwaZulu-Natal Provincial Planning & Development Commission.

Appendix A-A: Matrix of cluster potential

Compatible facilities	Library	Primary school	Secondary school	Tertiary education/ trade schools	Community centre	Indoor sports hall	Sports stadium	Local sports field incl. multi-purpose outdoor courts	Parks: Neighbourhood	Parks: District	Parks: Regional	Swimming pool	Urban agriculture	Cemetery/ crematorium	Primary health care centre	L1 Hospital	Police station	Fire station	Worship centre	Nature conservation area
Library	•																			
Primary school		•																		
Secondary school			•																	
Tertiary education/ trade schools				•																
Community centre					•															
Indoor sports hall						•														
Sports stadium							•													
Local sports field including multi-purpose outdoor courts								•												
Parks: Neighbourhood									•											
Parks: District										•										
Parks: Regional											•									
Swimming pool (25-50m)												•								
Urban agriculture													•							
Cemetery / Crematorium														•						
Primary health care centre															•					
L1 Hospital																•				
Police station																	•			
Fire station																		•		
Worship centre																			•	
Nature conservation area																				•

Appendix A-B: Clustering of facility types at various node types

FACILITY	TYPICAL POPULATION THRESHOLD (no. of people)	NEIGHBOURHOOD NODE (Local cluster/ special place)	DISTRICT NODE	REGIONAL NODE	SPORTS & PARKS PRECINCT Multi-functional sports, recreation and park complex	
					Neighbourhood/ District	Regional/ Metro
Early Childhood Centre	2 400 - 3000	•	•	•		
Worship Centre	3 000 - 6 000	•	•	•		
Local sport field	3 000	•			•	
Neighbourhood park	3 000 - 6 000	•			•	
Urban agriculture	Varied	•	•		•	
Local market	5 000	•			•	
Primary school	5 500	•	•	•		
Post office	10 000	•	•	•		
Neighbourhood sports complex	10 000	•			•	
Secondary school	12 500	•	•	•	•	
Community park	20 000		•	•	•	•
ICT access point	20 000		•	•		
Home Affairs/ other govt. institutions - Local service point	20 000		•			
Community centre	30 000		•	•	•	
Library	40 000		•	•		
Health clinic	40 000		•	•		
Home Affairs/ other govt. institutions - District Office	40 000		•	•		
Small museum	50 000		•	•	•	
Performing arts centre	50 000		•	•		
Home for the aged	50 000	•	•			
Hospice/ Health centre	50 000	•	•			
District sports complex	50 000			•	•	
District park	50 000			•	•	
Children's Home	60 000	•	•			
Community Health Centre + ARV	60 000 – 120 000		•	•		
Police station	60 000		•	•		
Magistrates Court	-		•			
Prisons & Places of Safety	-					
Initiation sites	-					
Cemetery	100 000					•
Tertiary Institution (not university)	100 000			•		•
Fire station	100 000		•	•		
Metropolitan sports complex	120 000			•		•
Regional park	120 000			•		•
Civic Centre/ City Hall	200 000			•		
Home Affairs/ other govt. institutions - Regional Office	200 000			•		

FACILITY	TYPICAL POPULATION THRESHOLD (no. of people)	NEIGHBOURHOOD NODE (Local cluster/special place)	DISTRICT NODE	REGIONAL NODE	SPORTS & PARKS PRECINCT Multi-functional sports, recreation and park complex	
					Neighbourhood/District	Regional/Metro
District hospital (L1)	450 000			•		
Municipal office	500 000			•		
Thusong Centre	500 000			•		
Regional hospital (L2)	1 000 000			•		
University	1 000 000+			•		
Major public venue	1 000 000+			•		•
International sports venue	1 500 000					•
Tertiary hospital (L3)	4 500 000			•		
Solid waste disposal site	-					
Recycling depot	-	•	•			
Urban centres	-	•	•	•		
Business complex	-		•	•		

Appendix A-C: Matrix of functional potential for multiple-use of social facilities

Potential secondary functions ⇨ Primary function of the facility ⇩	Place to study	Meetings/social – small group	Gatherings – large group	Pension pay out	Adult training facilities	Counselling centre	Municipal information sessions	Religious services	Prayer meetings	Home Affairs (periodic)	Social Welfare (periodic)	Child Welfare (periodic)	Feeding scheme	Legal aid	Overflow sport for schools	Inter-school events	Bazaars and fetes	ICT access	Play equipment
	Library	•	•		•	•	•	•		•					•				•
Community centre	•	•	•	•	•	•	•	•	•	•	•	•	•	•			•	•	•
Worship centres		•	•			•	•	•	•				•	•			•		
School	•	•			•	•	•	•	•			•	•				•	•	•
Sports hall			•		•	•	•	•							•	•	•	•	
Sports stadium			•				•	•							•	•	•		
Local sports field															•	•	•		
Multi-purpose outdoor court(s)															•	•	•		
Nature conservation																			
Primary health care centre		•				•	•				•	•	•	•				•	•

Appendix B: Threshold and density illustrations

Within the given provision standards and guidelines for each facility, the following graph and table can be used to determine a likely facility threshold (that relates to size), relative to a selected population density and travel distance. For example, at a density of 18 persons per hectare, the likely threshold population is 30 000 persons at a spacing of 2 km between facilities. With a 3 km spacing at the same density, the achievable population threshold is approximately 60 000 persons.

The graph and table cannot be applied to the education sector (including preschools), where there is a limit placed on the number of learners accommodated at any one school and where learners should preferably reside within the catchment area of the school they attend.

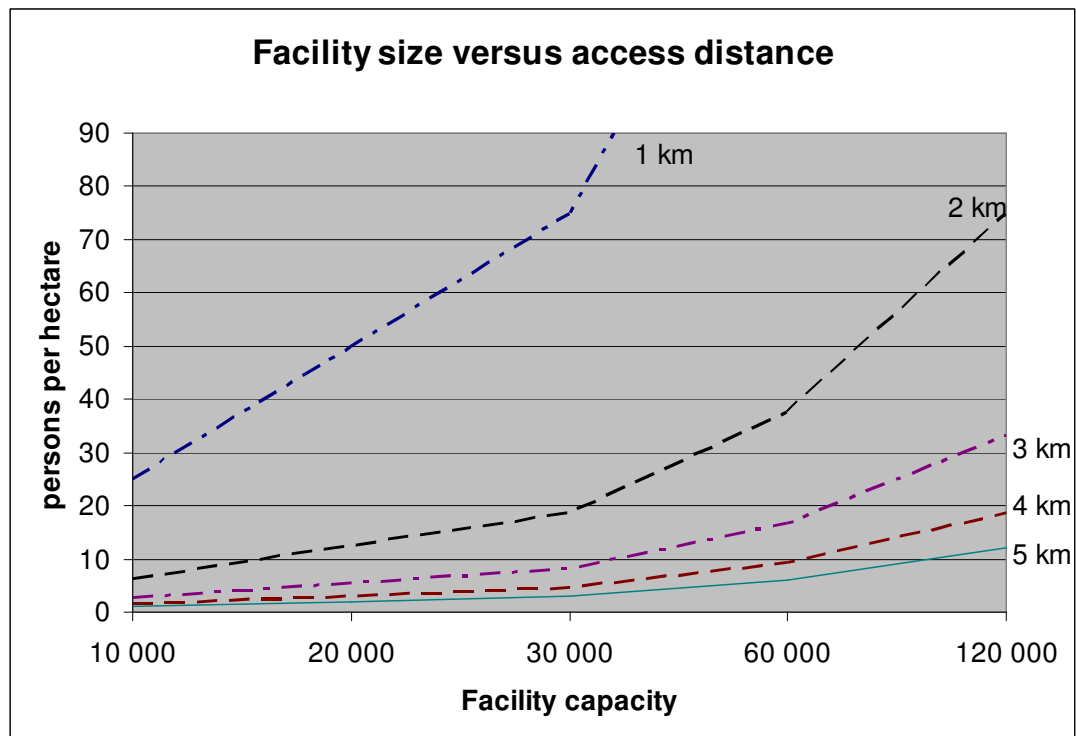


Figure B.1: Facility threshold size and distance parameters for differing density contexts: for application to clinics, police stations, libraries, swimming pools and sports stadiums.

Table B.1: Travel distance (straight routes) and density in relation to facility threshold size

Gross DU density	Population density @ 3.5 pphh	Travel distance / catchment radius				
		500 m	1 km	2 km	3 km	4 km
Density		Typical facility threshold values viable				
5	18		8 000	30 000	60 000	120 000
10	35		15 000	60 000	120 000	
15	53		20 000	90 000		
25	88	8 000	35 000	120 000		
40	140	15 000	60 000			
50	175	18 000	70 000			
75	263	25 000	100 000			
100	350	35 000	120 000+			

Appendix C: Examples of facility need and land impact for a range of development sizes

Developed using the Space Planner and the standards guidelines in main document.

Facility space requirements for 100 dwelling units			
Area available for development: 11.7 hectares see total below.			
Assumptions Inputs			
No developer contribution requested for recreational space or facilities in initial phase			
Development Density(du/ha)	10		
Roads and Parking (factor/ha)	10%		
Average Household Size	4		
Standard Facility Requirements	INPUT	Hectares per full facility	OUTPUT
	Facility population threshold		Proportional impact - hectares
Primary Health Clinic	30 000	0.5	0.007
Community Centre	30 000	0.3	0.004
High income Creche/early Childhood Centre	3 000	0.05	0.007
Sports Fields, Stadia pools and indoor hall	1 000	0.56	0.229
Post Office	10 000	0.02	0.001
Secondary School	12 500	4.8	0.157
Primary School	5 500	2.8	0.208
Park Space	1 000	0.5	0.205
Police Station	60 000	0.5	0.003
Fire Station	100 000	0.3	0.001
Local Library	40 000	0.05	0.001
Religious Centre	3 000	0.1	0.014
Municipal Office	100 000	0.3	0.001
Old age Home	50 000	2	0.016
Community Health Centre & ARV	60 000	1.5	0.010
Children's Home	60 000	1	0.007
Home Affairs - Regional office	140 000	0.5	0.001
Civic Centre / City hall	100 000	1	0.004
Cemetery	50 000	8	0.065
Tertiary Training not University	100 000	1	0.004
University	1 000 000	8	0.003
Hospital L1	450 000	5	0.005
Major public venue	1 000 000	2	0.001
International sports complex	1 500 000	3	0.001
Swimming Pool	60 000	0.16	
Regional Library - reference	100 000	0.56	0.002
Regional Hospital	1 000 000	7	0.003
Tertiary Hospital	4 500 000	35	0.003
Indoor Sports Hall	300 000	0.5	
Sports Stadia	300 000	3	
Thusong	500 000	0.16	0.000
Calculation Outputs			
Net Residential Development Area (ha)	10.238		
Number of Dwellings	102		
Total population	409		
Facility and park space (ha) impact	0.964		
Park space (ha) included above	0.205		
Sport recreation space (ha) included above	0.229		
Roads and parking space (ha)	1.024		
Total non-residential space(ha)	1.993		
Total residential space(ha)	10.238		
Total development space required (ha)	12.23		
Comments:			
Impact of space required for social facilities will exceed the development space by 0.5 ha			
This development is too small to require any dedicated facilities and the space required will need to be incorporated into the wider area spatial plan			

Facility space requirements for 10000 dwelling units

Area available for development :378 hectares

Assumptions

No developer contribution requested for recreational space or facilities in initial phase

3 Development Density Categories

	Cat 1	Cat 2	Cat 3
Development density	60	20	15
Proportion of housing in each density category	50	30	20
Roads and Parking (factor/ha)	10%		
Average Household Size	4		

Standard Facility Requirements

	INPUT		OUTPUT	
	Population/ facility	Hectares/ facility	Facilities required	Proportional impact- hectares
Primary Health Clinic	30 000	0.5	1	0.668
Community Centre	30 000	0.3	1	0.401
High income Creche/early Childhood Centre	3 000	0.05	13	0.668
Sports Fields, Stadia, Pools and Indoor Hall	1 000	0.56		22.445
Post Office	10 000	0.02	4	0.080
Secondary School	12 500	4.8	3	15.391
Primary School	5 500	2.8	7	20.404
Park Space	1 000	0.5		20.040
Police Station	60 000	0.5		0.334
Fire Station	100 000	0.3		0.120
Local Library	40 000	0.05	1	0.050
Religious Centre	3 000	0.1	13	1.336
Municipal Office	100 000	0.3		0.120
Old age Home	50 000	2		1.603
Community Health Centre&ARV	60 000	1.5		1.002
Childrens Home	60 000	1		0.668
Home Affairs - Regional office	140 000	0.5		0.143
Civic Centre / City hall	100 000	1		0.401
Cemetery	50 000	8		6.413
Tertiary Training not Univ	100 000	1		0.401
University	1 000 000	8		0.321
Hospital L1	450 000	5		0.445
Major public venue	1 000 000	2		0.080
International sports complex	1 500 000	3		0.080
Swimming Pool	60 000	0.16		
Regional Library - reference	100 000	0.56		0.224
Regional Hospital	1 000 000	7		0.281
Tertiary Hospital	4 500 000	35		0.312
Indoor Sports Halls	300 000	0.5		
Sports Stadia	300 000	3		
Thusong	500 000	0.16		0.013

Calculation Outputs

	Cat 1	Cat 2	Cat 3
Net Residential Development Area (ha)	128.4609375	77.07656	51.38438
Development Area (ha)	188.8162846	113.2898	75.52651
Number of Dwellings	7707	1541	770
Population	30831	6166	3083

Summary

Total dwellings	10018
Total population	40080
Facility and park space (ha) impact	94.444
Park space (ha) included above	20.04
Sport recreation space (ha) included above	22.4448
Roads and parking space (ha)	25.692
Total non-residential space(ha)	120.136
Total residential space(ha)	256.922
Total development space (ha)	377.058

Comments:

Where facility impact is too small to warrant a dedicated facility the space impact must be incorporated into a wider area plan

Facility space requirements for 60000 dwelling units

Area available for development: 2200 hectares				
Assumptions				
No developer contribution requested for recreational space or facilities in initial phase				
3 Development Density Categories				
	Cat 1	Cat 2	Cat 3	
Development density	60	30	15	
Proportion of housing in each density category	50	30	20	
Roads and Parking (factor/ha)	10%			
Average Household Size	4			
Standard Facility Requirements	INPUT		OUTPUT	
	Population/ facility	Hectares/ facility	Facilities required	Hectares required (ha)
Primary Health Clinic	30 000	0.5	8	4.112
Community Centre	30 000	0.3	8	2.467
High income Creche/early Childhood Centre	3 000	0.05	82	4.112
Sports Fields	1 000	0.56		138.152
Post Office	10 000	0.02	24	0.493
Secondary School	12 500	4.8	19	94.733
Primary School	5 500	2.8	44	125.593
Park Space	1 000	0.5		123.350
Police Station	60 000	0.5	4	2.056
Fire Station	100 000	0.3	2	0.740
Local Library	40 000	0.05	6	0.308
Religious Centre	3 000	0.1	82	8.223
Municipal Office	100 000	0.3	2	0.740
Old age Home	50 000	2	4	9.868
Community Health Centre&ARV	60 000	1.5	4	6.168
Childrens Home	60 000	1	4	4.112
Home Affairs - Regional office	140 000	0.5	1	0.881
Civic Centre / City hall	100 000	1	2	2.467
Cemetery	50 000	8	4	39.472
Tertiary Training not Univ	100 000	1	2	2.467
University	1 000 000	8		1.974
Hospital L1	450 000	5		2.741
Major public venue	1 000 000	2		0.493
International sports complex	1 500 000	3		0.493
Swimming Pool	60 000	0.16	4	
Regional Library - reference	100 000	0.56	2	1.382
Regional Hospital	1 000 000	7		1.727
Tertiary Hospital	4 500 000	35		1.919
Indoor Sports Halls	300 000	0.5		
Sports Stadia	300 000	3		
Thusong	500 000	0.16		0.079
Calculation Outputs	Cat 1	Cat 2	Cat 3	
Net Residential Development Area (ha)	734.23	440.54	293.69	
Development Area (ha)	1100.08	660.05	440.03	
Number of Dwellings	44053	13216	4405	
Population	176215	52864	17621	
Summary				
Total dwellings	61674			
Total population	246700			
Facility and park space (ha) impact	581.32			
Park space (ha) included above	123.35			
Sport recreation space (ha) included above	134.62			
Roads and parking space (ha)	146.85			
Total non-residential space(ha)	728.17			
Total residential space(ha)	1468.46			
Total development space (ha)	2196.62			
Comments				
Where facility impact is too small to warrant a dedicated facility the space impact must be incorporated into a wider area plan				