BP Submission For

Conventional Housing Development With Open Space Provision

NParks

Contents

PART 1 INFORMATION REQUIREMENTS

1. Plans, Application Form and Checklist

A registered architect is required to submit and sign all layers of drawing digitally, a completed NParks' application form, relevant checklist and enclose the letter of authorization from the developer:

The plans should comprise of:

(a) Key and location plans (scale 1 : 10000 or 1 : 5000) with access to the site from a street or road.
(b) Site plan (scale 1 : 500, 1 : 200 or 1 : 100)
(c) Address, lot and/or plot number of the lots on both sides of the development site.
(d) Proposed landscaping plan of open space (scale 1 : 200 or 1 : 100)
(e) Cross-sectional drawings showing existing and proposed terrain of the open space.
(f) Detailed drawings and catalogues of proposed play and fitness equipment. (material used, safety measures etc are to be specified)
(g) Detailed drawings and/or catalogues of proposed park facilities, inclusive (but not limited) of the following:
- Benches
- Litter bins (other than NParks standard drawing)
- Signboard (other than NParks standard design)
- Footpath

(h) Architectural drawings and detail structural drawings with calculation (endorsed by PE) of proposed structures, inclusive (but not limited) of the following:
- Shelter/pavilion
- Retaining wall

(i) Detail drainage plan with calculation endorsed by PE.
(j) Park lighting plan to be submitted separately by Electrical Engineer.

2. Site Information

		Layout Plan	**Open Space Landscape Plan**
(a)	Development boundary verged in red.	Indicate	
(b)	Proposed development layout.	Indicate	
(c)	Proposed open space's location verged in red, with area indicated.	Indicate	
(d)	Existing and proposed levels of open space and the surrounding areas		Indicate
(e)	All slope shown on plan using standard symbol and gradient indicated.		Indicate
(f)	Layout of play equipment, fitness equipment and park facilities (e.g benches, litter bins, signboards, footpaths, railings, park lightings, shelters and retaining walls)		Indicate
(g)	Neighbouring lot's boundary / retaining wall highlighted in orange.	Indicate	Indicate

3. Existing Trees / Palms / Shrubs

		Layout Plan	Open Space Landscape Plan
(a)	All existing trees / palms / shrubs, with species, girth and the numbering indicated on the building plan, should be the same as those shown on the plan submitted to NParks at DC stage	Indicate	
(b)	The colour code for existing trees / palms / shrubs is as follows:	Indicate	

Table 3b – Colour Code for existing trees/palms/shrubs

Status of existing trees/ Palms / shrubs	Outline Colour
To be retained	Green
To be removed	Yellow
Removed without written approval	Red
Removed with written approval	*Yellow (indicate approval date in the tree schedule)
Non-existence after inspection	Indicate a 'cross' on tree symbol

		Layout Plan	Open Space Landscape Plan
(c)	Any changes on the status of the existing trees approved at DC stage are to be reflected on the forms provided in Annexes 1, 2 and 3.	Indicate	

4. Photographs

(a) Photographs of trees and single-stem palms proposed for retention within development site in Tree Conservation Area or on vacant land are to be submitted.

(b) Photographs of the trees should be numbered according to the numbering shown on plan.

5. Planting Scheme

		Layout Plan	Open Space Landscape Plan
(a)	Location and species of proposed trees/palms are to be shown with prefix 'P'. A legend for proposed trees/palms is to be provided. (Please use colours other than green, red and yellow.)		Indicate
(b)	Species and locations of proposed shrubs.		Indicate
(c)	Locations and species of existing and proposed roadside trees fronting the open space		Indicate

PART II Division 2B Regulatory Requirements

1. General

		Layout Plan	Open Space Landscape Plan
1.1	The location and area of the open space are as approved by NParks at DC stage.	Indicate	
1.2	A certified copy of written permission and approved plan by Chief Planner, URA are attached.	To provide	

2. Conservation Of Trees/Single-Stem Palms Within Development Site

(only applicable if the development is within the gazetted Tree Conservation Area or on vacant land)

	Layout Plan	Cross Sectional/ Detail Plan
The Tree Protection Zone (TPZ) provided from centre of retained tree/single-stem palm as approved by NParks at DC stage is indicated	Indicate	

3. Retention Of Existing Roadside Trees

	Layout Plan	Cross Sectional/ Detail Plan
The clearance distance between an existing tree/a single stem palm and the proposed elements approved by NParks at DC stage should be indicated	Indicate	

4. General Requirements on Open Space

		Layout Plan	Open Space Landscape Plan
4.1	The open space should generally be flat (gradient 1 : 40). Where tree planting on slope is required within the open space, the gradient of the slope should not be steeper than 1 : 2.5.		Indicate (horizontal & vertical cross-section submitted)
4.2	The open space is provided with a proper drainage system including surface run-off drain system and subsoil pipe/ geotextile system especially along the footpath prevent water ponding on hard surface and turf area.		Endorse / Indicate

4.3	The proposed open space is to be planted with 50mm thick Axonopus compressus (cow grass) in close turfing, with provision of 100mm depth planting mixture. The planting mixture should make up of 3 parts of loamy soil and 1 part of organic matter (processed woodchips or compost)		Endorse / Indicate
4.4	If open space is facing expressway, a row of shrubs or hedges is to be planted within the open space along the boundary facing the expressway. These shrubs or hedges act as a soft barrier. The height of the hedges or shrubs is to be at least 1.5m.		Indicate

5. Proposed Landscaping Plan

		Layout Plan	**Open Space Landscape Plan**
5.1	Tree / Palm Planting Location		Indicate

Table 5.1 – Tree / Palm Planting Location

Proposed Elements	**Required Minimum Clearance of Proposed Elements from Proposed:**		
	Palm	**Small to medium size tree**	**Large tree**
Park Lighting	2.0m	3.0m	6.0m
Subsoil Drain	2.0m (measured perpendicularly from subsoil drain)		
OG Box	2.0m		

5.2 Size and planting hole of a sapling tree / single-stem palm / cluster palm

		Layout Plan	**Open Space Landscape Plan**
(a)	A sapling tree should have:		Endorse
	i) total overall height 2.5m with clear trunk height 1.5m (measured from soil level)		
	ii) girth at least 0.1m		
	iii) upright and in good form		
	iv) staking provided as and when required		
(b)	A single stem palm should have:		Endorse
	i) total overall height 2.0m (measured from soil level)		
	ii) upright and in good form		
	iii) terminal shoot		
	iv) staking provided as and when required		
(c)	A cluster palm should have:		Endorse
	i) total overall height 2.0m (measured from soil level)		
	ii) upright and in good form		
	iii) minimum 4 suckers		
(d)	A planting hole for a sapling tree / single stem palm / cluster palm should be 1m x 1m x 1m and backfilled with 3 parts of loamy soil and 1 part of organic matter (processed woodchips or compost)		Endorse

5.3 Size and planting hole of an instant tree

		Layout Plan	Open Space Landscape Plan
(a)	An instant tree should have:		Endorse
	i) girth at least 0.3m.		
	ii) clear trunk height 2.0m (measured from soil level)		
	iii) upright and good form.		
	iv) minimum 3 primary branches of 500mm long.		
	v) staking provided as and when required.		
(b)	A planting hole for an instant tree should be 1.5m x 1.5m x 1.0m (L x W x D) and backfilled with loamy soil.		Endorse

5.4 Stake provided for a sapling tree / single-stem palm

	Layout Plan	Open Space Landscape Plan
The stake should be:		Endorse
i) galvanised steel pipe or treated wood of 25mm diameter.		
ii) 1/3 buried underground and the stake to be slightly lower than the sapling		
iii) positioned 200mm away from the collar of the tree		
iv) provided with PVC tubed nylon string placed round the trunk and tied firmly to the stake		

5.5 Tree collar protectors for proposed sapling trees / single-stem palms

	Layout Plan	Open Space Landscape Plan
A tree collar protector, made of a PVC tube of length 200mm, diameter 75mm and thickness 2mm with a slit cut along the full length of the tube.		Endorse

5.6 Shrubs planting

		Layout Plan	Open Space Landscape Plan
(a)	For single shrub planting, each shrub should have a height of at least 0.5m. A shrub hole should be 0.6m x 0.6m x 0.6m and backfilled with 3 parts of loamy soil and 1 part of organic matter (processed woodchips or compost)		Endorse
(b)	For shrub bed planting, depending on the species, each shrub should have a height of 0.3 to 0.5m and planted at 0.3 to 0.5m c/c. A shrub bed is to have a soil depth of 0.6m and backfilled with 3 parts of loamy soil and 1 part of organic matter (processed woodchips or compost)		Endorse

6. Play Equipment Or Fitness Equipment

			Layout Plan	Open Space Landscape Plan
6.1	The total area for installing and usage of play equipment or fitness equipment should be at least 100m^2.		Indicate	Indicate
6.2	The proposed play equipment should have a total of at least 8 stand alone different play equipment types. If a play equipment module is proposed, it should consist of minimum one composite set with at least 5 play components and at least 3 stand alone play components. Play equipment should be stimulating and educational providing exercise not only to the body but also developing the mind of the child.			Indicate (location of play components)
6.3	A set of at least 6 stations for fitness corner should be provided.			Indicate (location of stations)
6.4	The maximum height of each equipment and proportionate size of parts of play and fitness pieces should suit the size of Asian physiques.			Indicate/ Endorse
6.5	Play equipment shall be designed and constructed or assembled in accordance with Singapore Standard SS 457:1999, American Standard, European Standard, Australian Standard.			Indicate/ Endorse
6.6	The safety zone to be provided for each play equipment and the clearance between a play equipment and the kerb of sand pit should be provided in accordance with the following, whichever is the greatest:			Indicate
	(a)	To conform strictly to the safety guidelines and specifications of the stated safety standard of the product		Indicate
	(b)	A minimum 2.0m clearance is to be provided between each separate pieces of play equipment type and also between each play equipment and the sand pit kerb.		Endorse
6.7	Pieces of the play equipment should not have protruding and sharp edges. Where bolts and nuts are used, they should be sunken and durably covered.			Indicate
6.8	All play and/or fitness equipment should be situated within sand pits or any acceptable protective surfacing materials.			Indicate
6.9	Any surfacing material for play areas must be provided with adequate Critical Fall Height protection for all proposed play equipment			Indicate/ Endorse
6.10	Sand pit or play area should be connected to the footpath system.			Indicate
6.11	The sand pit should fill with 600mm thick layer of coarse washed sand. The top level of the sand is to be 25mm below the sand pit kerb.			To provide
6.12	Subsoil drainage must be provided within sand pit or play area. These subsoil pipes should be linked to the nearest drain and be installed at least 0.8m below the top of the sand pit. The angles between the parent subsoil pipe and each of its branches is about 45 degrees. Detailed drawings of the subsoil pipes should be submitted.			Indicate
6.13	Clearly defined edging between the sand pits / play areas and adjacent surface should be provided (preferably flush with the ground or of maximum height 0.15m).			Indicate
6.14	Relevant instructional signboards should be provided for all fitness equipment. It should be weather resistant and vandal proof.			Endorse

6.15	All metal components including bolts & nuts, angle brackets in the equipment should be made of rust-free materials like aluminium, stainless steel, polyethylene or other rust free alloy.		Indicate
6.16	Fitness equipment made of timber should be hardwood, either Chengal or Balau.		Indicate
6.17	A 5 year warranty transferable to NParks is required from the supplier for the imported play and fitness equipment. The validity of the warranty should not be less than 4 years at the time when the warranty is transferred to NParks. Sample of warranty is attached (Annex 9).		To provide
6.18	The design of the footing for play & fitness equipment is to be endorsed by Structural Engineer and should be structurally safe.		Endorse
6.19	A complete list of manufacturer, suppliers' name, address and telephone is to be submitted.		To provide

7. Footpath

		Layout Plan	**Open Space Landscape Plan**
7.1	The width of proposed footpath should be 1.5m to 2.0m. It should be at least 25mm above the turf area adjacent to it. Interlocking pavers made up of concrete or clay patterned footpath is preferred.		Indicate
7.2	All turnings or joints of footpath should be rounded off.		Indicate
7.3	Ramps, where possible, should be provided instead of steps. The gradient of proposed ramp should comply with BCA's requirements		Indicate
7.4	Footpath should provide easy access to all facilities within the open space for all users including the disabled.		Indicate
7.5	For wider footpath while is use also for vehicular access (water tanker), Engineer detail is required.		To provide

8. Park Lighting and OG Box

	Layout Plan	**Open Space Landscape Plan**
Electrical Engineer is to comply and complete the Mechanical & Electrical services checklist and submit detail plans for our approval.		Indicate

Mechanical & Electrical checklist is available in:

http://www.nparks.gov.sg/development/dev-gui_che.shtml

9. Park Furniture

(NParks has no objection if a developer wishes to provide park furniture to blend with the theme of the open space. The architect of the development could pre-consult NParks on the design and materials to be used for the proposed park furniture)

9.1 Benches

		Layout Plan	**Open Space Landscape Plan**
(a)	Materials used should be durable.		Indicate
(b)	All benches should be connected to the footpath by means of concrete platform with a minimum 0.5m apron all round. The level of the finished platform should match with the footpath		Indicate
(c)	All timber should be hardwood, either Chengal or Balau.		Indicate
(d)	A quality warranty transferable to NParks is required from supplier for imported benches. This warranty is to be submitted at CSC stage		To provide

9.2 Litter Bins

		Layout Plan	**Open Space Landscape Plan**
(a)	Litter bins should be vandal proof and durable.		Indicate
(b)	All timber should be hardwood, either Chengal or Balau.		Indicate
(c)	It should be secured firmly to the ground with rust-free bolts and nuts.		Indicate
(d)	It should be located 3m to 5m away from a bench.		Indicate
(e)	If NParks standard litter bin is used, it is to be provided in accordance with specifications as shown in Annex 7.		Indicate
(f)	A quality warranty transferable to NParks is required from supplier for litter bin. This warranty is to be submitted at CSC stage.		To provide

9.3 Signboard

		Layout Plan	Open Space Landscape Plan
(a)	Signboard should be vandal proof and durable.		Indicate
(b)	All timber should be hardwood, either Chengal or Balau.		Indicate
(c)	NParks or developers may propose more than one number of signboard in an open space.		Indicate
(d)	If NParks standard signboard is used, it is to be provided in accordance with specifications as shown in Annex 6.		Indicate
(e)	Name of open space should be after the name of the nearest road. Where the nearest road is yet to be named, the name of the open space is to be submitted as soon as the road name is approved by the Street Naming Committee.		Indicate
(f)	NParks logo should appear on the signboard.		Indicate
(g)	Size of the lettering for the name of the open space should not be less than 150mm tall.		Indicate
(h)	The design and construction of the footing should comply with Building Control Act.		Indicate
(i)	A quality warranty transferable to NParks is required from supplier for Signboard. This warranty is to be submitted at CSC stage.		To provide

9.4 Shelter

(Qualified Persons are advised to pre-consult NParks on the aesthetic design and materials to be used for a proposed shelter.)

		Layout Plan	Open Space Landscape Plan
(a)	If the shelter is to be submitted to BCA (Chief Building Engineer's Office) for approval, a copy of BP approval letter and approval plan are to be submitted to NParks. Otherwise, the proposed plan has to be endorsed by a QP (Structural Engineer) that the structural safety of the proposed shelter complies with relevant prevailing code of practice and/or Singapore Standard including Building regulations. The endorsed plan is to be submitted to NParks.		Indicate
(b)	Lightning and earthling protection system must be provided in accordance SS: CP 33 Code of Practice for Lightning and Protection.		Endorse
(c)	The design of the lightning and earthling protection system is to be endorsed by a QP (Electrical Engineer). The endorsed plan is to be submitted to NParks through the QP (Architect) of the project at Building Plan stage together with open space proposal.		Endorse

10. Retaining Wall

(Qualified Persons are advised to pre-consult NParks on the design and materials to be used for proposed retaining wall.)

	Layout Plan	**Open Space Landscape Plan**
Retaining wall approved at DC stage is to be shown. Schematic engineering drawing should be submitted	Indicate	Indicate
If the retaining wall is to be submitted to BCA (Chief Building Engineer's Office) for approval, a copy of BP approval letter and approval plan are to be submitted to NParks. Otherwise, the proposed plan has to be endorsed by a QP (Structural Engineer) that the structural safety of the proposed retaining wall complies with relevant prevailing code of practice and/or Singapore Standard including Building regulations. The endorsed plan is to be submitted to NParks.		

11. Railings

		Layout Plan	**Open Space Landscape Plan**
(a)	Proposed railings of 0.9m high are to be provided where the edge of an open space ends in a slope, which is steeper than 1 : 2.5.	Indicate	Indicate
(b)	Safety railings for open drain of more than 1.0m deep should be confined within drainage reserve.		
(c)	Colour of the railings should match with the colour scheme of the open space.		
(d)	Materials used should be durable.		
(e)	Timber railing should be hardwood, either Chengal or Balau.		

12. Architectural Checklist

Architect is to comply and complete with the Architectural checklist and submit for our approval together with the submission

13. Civil and Structural Checklist

Professional Engineer is to comply and complete with the Civil & Structural checklist and submit for our approval together with the Architect submission

Note: For items 12 and 13, the checklist will be available in:

http://www.nparks.gov.sg/development/dev-gui_che.shtml

Annex 1- Existing Tree / Single Stem Palms within Site Boundary

Serial No.	Tree / Palm No.	Botanical Name of Trees / Single Stem Palms	Girth Size (m)		Height (m)	Proposed to remove		Proposed to retain		*Reasons for removal / retention
			=< 1.0m (a)	> 1.0m (b)		DC (c)	BP (d)	DC (e)	BP (f)	
Total Nos. of Trees / Single Stem Palms										

Annex 2 - Existing Tree / Single Stem Palms On Neighbouring Lot

(Up to a distance of 5.0m from the site boundary)

Serial No.	Tree / Palm No.	Botanical Name of Trees / Single Stem Palms	Girth Size (m)		Height (m)	Proposed to remove		Proposed to retain		*Reasons for removal / retention
			=< 1.0m (a)	> 1.0m (b)		DC (c)	BP (d)	DC (e)	BP (f)	
Total Nos. of Trees / Single Stem Palms										

Annex 3 - Existing Roadside Trees/ Palms/ Shrubs

Abutting The Development Boundary And Up To A Distance Of 10m On Both Sides Of Boundary

Serial No.	Tree / No.	Botanical Name of Trees / Single Stem Palms	Girth Size (m)		Trees proposed to remove		Trees proposed to retain		*Reasons for removal / retention
			=< 1.0m (a)	> 1.0m (b)	DC (c)	BP (d)	DC (e)	BP (f)	
Total Nos. of Trees / Single Stem Palms									

Serial No.	Palm / Shrub	Botanical Name of Cluster Palms and Shrubs	Height (m)	Nos	Trees proposed to remove		Trees proposed to retain		*Reasons for removal / retention
					DC (c)	BP (d)	DC (e)	BP (f)	
Total Nos. of Cluster Palms / Shrubs									

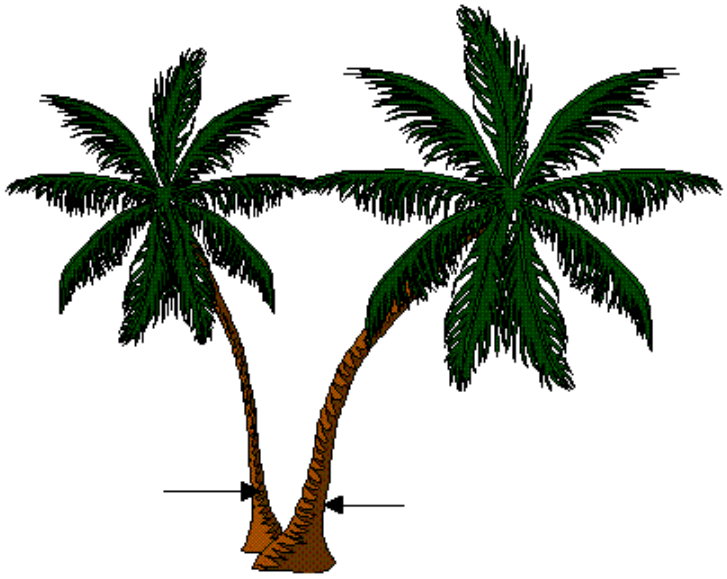
* Please refer to Annex 3-1 for list of reasons

Annex 3-1- Reasons For Removal/ Retention

Reasons for Removal		Reasons for Retention
main covered structure (ms)		good/rare species (gs) within the buffer zone (bz) uncovered structures (us) within road widening plot (wp)
Ancillary buildings		
e.g substation guard house bin centre	ss	
Outdoor recreational facilities		
e.g swimming pool tennis courts playground car park	ou	
Vehicular access		
driveway, fire engine access access to bin centre, substation footpath fire hardstanding area (fa)	va	
Other construction activities		
roadside drain, surface drain (dn) boundary wall (bw) retaining wall (rw) basement encroachment into green verges (bv) basement outside green verges (bo) construction (temp) activities (ca) sewer line & manhole (sw) soil profile change in height (sc)		
Health of tree		
strike by lightning, wind throw (sl) unhealthy (decay, rot) (uh) poor form (pf) hazard (hz)		

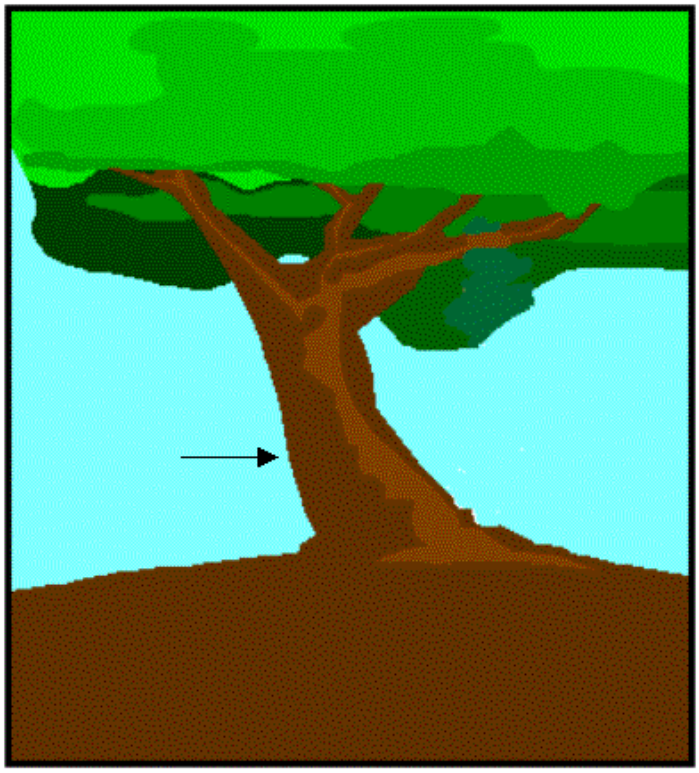
Annex 4-1 Girth Measurement For Multi-leader Tree (leaders sprout from collar)

For this type of multi-leader tree where the leaders sprout from the collar, measure the girth of each individual stem, and treat each stem as a separate tree. (arrowed)



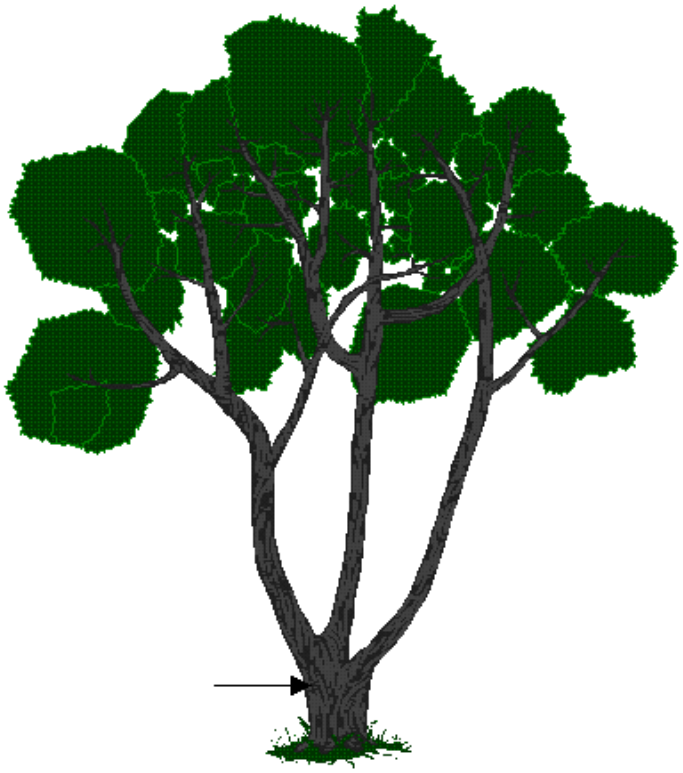
Annex 4-2 Girth Measurement For Buttressed Tree

For this type of buttressed tree, measure the girth at 0.5 metres height above the ground. (arrowed)



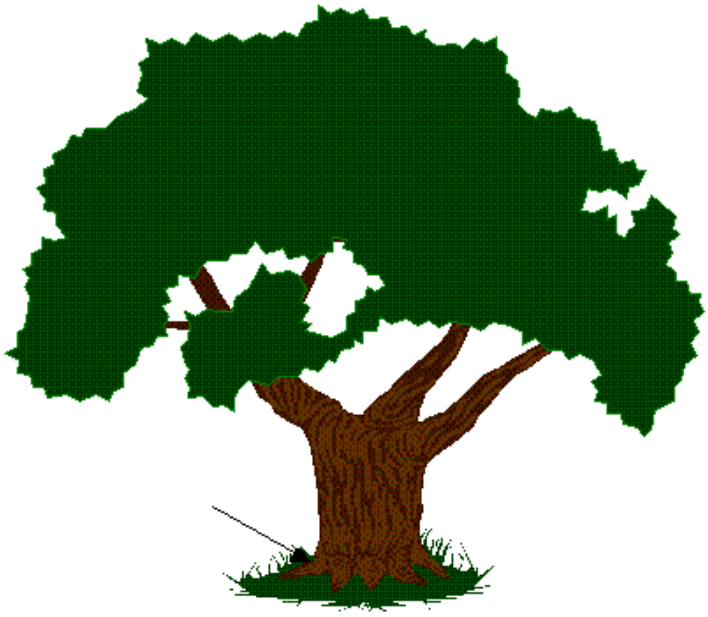
Annex 4-3 Girth Measurement For Multi-leader Tree (at a point between collar)

For this type of multi-leader tree, measure the girth at a point between the collar and 0.5 metres height above the ground. (arrowed)



Annex 4-4 Girth Measurement For Tree Growing On A Mound

For this type of tree growing on a mound, measure the 0.5 metres height above the ground next to the collar (arrowed), and not at the base of the mound.



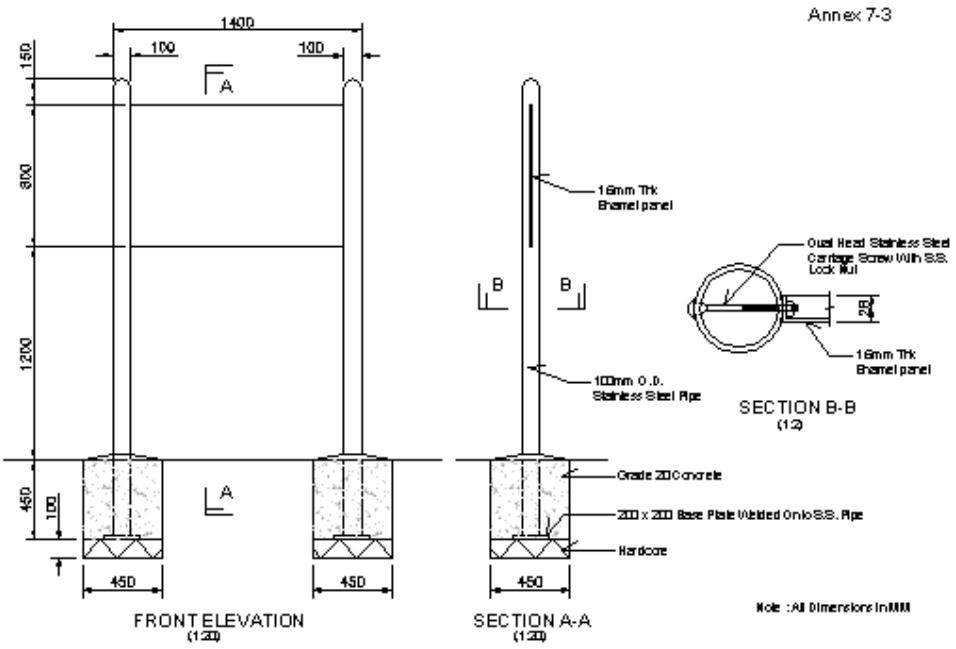
Annex 5 Expendable Species

Trees	Palms
Albizzia (Albizzia species)	Coconut palms (Cocos nucifera)
African tulips (Spathodea campanulata)	
Brown Heart (Andira inermis)	
Cempedak (Artocarpus integer)	
Jackfruit (Artocarpus heterophyllus)	
Madras thorn (Pithecellobium dulce)	
Pong Pong tree (Cerbera odollam)	
Wattle (Acacia auriculiformis)	

Annex 6-1 Signboard Specification 1

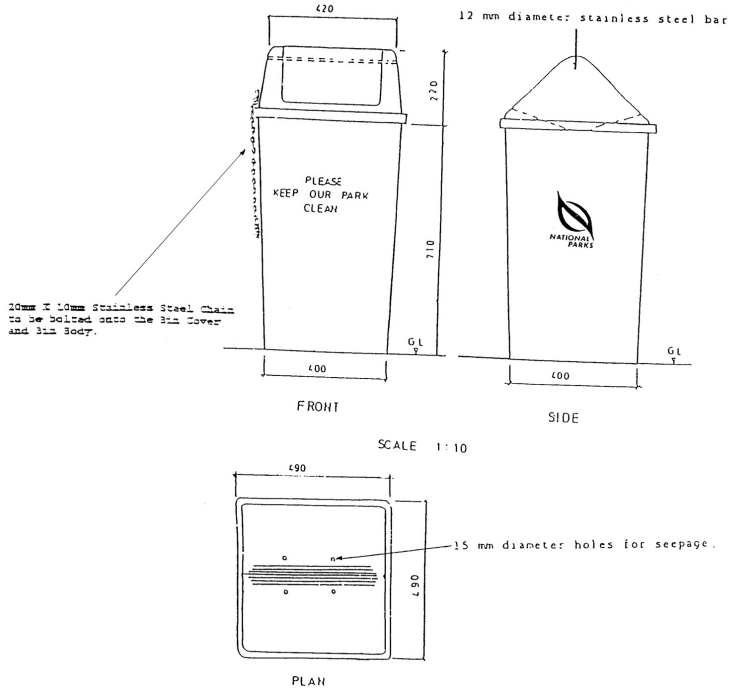
Annex 6-2 Signboard Specification 2

Annex 6-3 Signboard Specification 3



Annex 6-4 Signboard Specification 4

Annex 7-1 Flip-flop Refuse Litter Bin 1



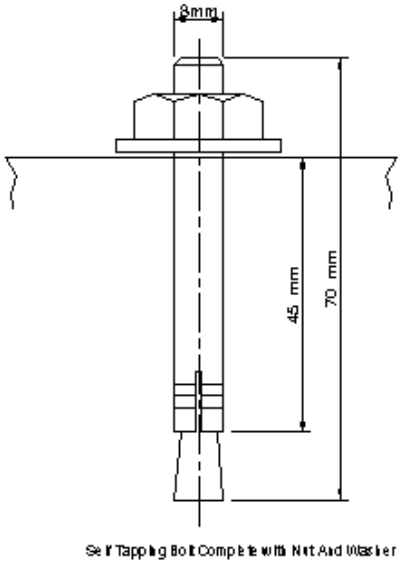
Annex 7-1

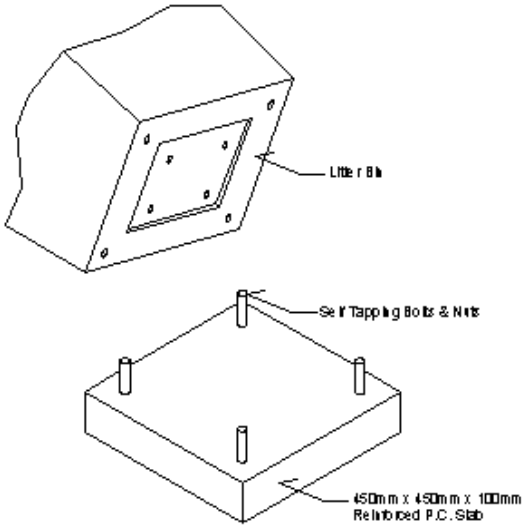
FLIP-FLOP P.E REFUSE LITTER BIN

Specifications

1. Capacity of bin : 120 litres
2. Material : medium density polyethylene. (0.926 to 0.940gm/cm³). Must be of virgin grade - i.e. no recycle material must be used.
3. Thickness : 4 mm
4. NPARKS Logo : 128 mm diameter departmental logo to be printed on both sides in paprika colour.
5. Letterings : All letterings 'PLEASE KEEP OUR PARK CLEAN' are to be of 50 mm height, printed on both fronts in black colour.
6. Colour of litter bin : green colour to be approved by S.O.
7. 6 nos. of 15 mm diameter holes to be provided at the base of litter bin for seepage.

Annex 7-2 Flip-flop Refuse Litter Bin 2





Annex 9- Sample of 5-Years Warranty For Playground or Fitness Equipment

Warranty Sample

Letter Head of **Supplier Company Name, Address, Telephone and Facsimile**

To ***NATIONAL PARKS BOARD***
HEADQUARTERS
Singapore Botanic Gardens
1 Cluny Road
Singapore 259569

Date :

5-YEARS WARRANTY FOR PLAYGROUND EQUIPMENT
AT _____

1 **(Name of Supplier)** provides a warranty to the customer against manufacturing defects on all (products module) products for a period of 5 years from the date of ***delivery** the maintenance of the play equipment on the site (date of delivery). Any replacement parts required under this guarantee will be furnished absolutely tree of charge.

2 "Customers" includes the National Parks Board or any other body responsible for the maintenance of the equipment installed at the site during the warranty period.

3 **(Name of Supplier)** must make all necessary repair or replace defective parts within 14 days upon receipt of customers' written direction

4 Details on inspection and maintenance can be found in the attach appendix.

Director's Name
Company stamp of the supplier

*** The validity of the warranty should bot be less than 4 years at the time when the warrant is transferred.**