

LANDSCAPING AND IRRIGATION SYSTEM

DOCUMENT NUMBER: 02000

APPLICATION: ELEMENTARY, MIDDLE AND HIGH SCHOOL

DATE OF ISSUE:

10-27-03 – revised ground cover list

09-11-03 – added mulch notes

11-26-02 - revised

07-01-99 - removed pittosporum

07-06-98 - revised

10-01-97 - revised

12-13-90 - first issued

NOTES:

The attached list of plants may be used on school sites. If alternate plant materials are proposed due to unusual site conditions, submit the alternate plants for Owner approval. Specify that plants are to be the best quality.

Mulch, if used, is to be locally available when possible. Pine bark or pine needles are preferred materials for use on relatively flat areas. Mulch is to be applied in a 2" to 4" thick blanket, leaving a few inches bare around tree trunks.

It is the intent of the School Board to plant only appropriate plant materials that will survive and flourish with comparatively little maintenance.

ATTACHMENTS:

Landscape Design Guidelines, dated 11-26-02

List of Acceptable Plants for School Sites, dated 10-27-03

Irrigation System Design Guidelines, dated 11-26-02

LANDSCAPE DESIGN GUIDELINES

November 26, 2002

I. GOALS

- Provide useful exterior spaces for gathering and effective circulation.
- Reduce Life Cycle Cost, particularly equipment and personnel costs.
- Reduce the use of water, see <http://www.swfwmd.state.fl.us/>

II. METHODS

- A. Preserve existing landscape where it is well established and self-sustaining (i.e. stands of palmettos, pines, oaks, etc.). Define the limits of construction staging areas in the documents, minimize the required staging area and enforce the boundaries during construction.
- B. Employ the principles of Xeriscape. Design with respect to existing microclimates. Group plants according to water needs to maximize irrigation efficiency. Plants that require frequent irrigation should be grouped together in an "oasis" zone. Drought-tolerant plants, needing infrequent watering should be grouped separately from plants that will survive on natural rainfall.
- C. Decentralize storm water systems. Provide shallow grading in lieu of fenced dry retention ponds or wet ponds. Promote the use of swales to convey storm water in lieu of structures and piping. Promote the dual use of shallow retention as playfields at elementary and middle schools or practice fields at high schools.
- D. Limit the area of irrigation to the public side(s) of the site. Courtyards may also be irrigated where provided.
- E. Avoid placing pavement immediately adjacent to the buildings on the south, east and west sides, to reduce heat gain.
- F. Centralize the intensity of circulation. The courtyard, streetscape, or open-air mall concepts are examples. Landscaping in these areas is to be in planters or other protected means.
- G. Minimize maintenance requirements. Design sites to minimize multiple small landscaped areas that are difficult to maintain. Provide low maintenance ground covers in parking lot islands (not sod). Provide a positive slope from buildings beginning at an elevation below the finish floor. Do not create three-sided courtyards where rainfall from roofs and canopies is permitted to stand. Consider rainfall conveyance from all canopies.

LIST OF ACCEPTABLE PLANTS FOR SCHOOL SITES
10-27-03

Sod and seed is to be Bahia unless otherwise directed. Floratam sod may be provided where deemed appropriate by the Owner.

CODE	BOTANICAL NAME	COMMON NAME	SWFWMD WATER REQ	SPECIFICATION
TREES				
AR	ACER RUBRUM	RED MAPLE	DT	
CR	CALLISTEMON RIGIDUS	ERECT BOTTLEBRUSH	DT	
CV	CALLISTEMON VIMINALIS	WEeping BOTTLEBRUSH	DT	
IA	ILEX ATTENUATA 'EAST PALATKA'	EAST PALATKA HOLLY	-	
IA	ILEX ATTENUATA 'SAVANNAH'	SAVANNAH HOLLY	-	
IV	ILEX VOMITORIA "PENDULA"	YAUPON HOLLY (WEeping)	N	
IV	ILEX VOMITORIA	YAUPON HOLLY (UPRIGHT)	N	
LI	LAGERSTROEMIA INDICA	CRAPE MYRTLE	N	
LS	LIQUIDAMBAR STYRACIFLUA	SWEETGUM	N	
LL	LIGUSTRUM LUCIDUM	LIGUSTRUM (TREE FORM)	DT	
LJ	LIGUSTRUM JAPONICA	LIGUSTRUM (TREE FORM)	DT	
MG	MAGNOLIA GRANDIFLORA	SOUTHERN MAGNOLIA	DT	
ML	MAGNOLIA "LITTLE GEM"	LITTLE GEM MAGNOLIA	-	
MV	MAGNOLIA VIRGINIANA	SWEETBAY MAGNOLIA	N	
MC	MYRICA CERIFERA	WAX MYRTLE (TREE FORM)	N	
PB	PERSIA BORBONIA	REDBAY	N	
PE	PINUS ELLIOTTII 'DENSE'	SOUTH FLORIDA SLASH PINE	N	
PA	PRUNUS ANGUSTIFOLIA	CHICKASAW PLUM	N	
QS	QUERCUS SHUMARDII	SHUMARD OAK	N	
QV	QUERCUS VIRGINIANA	LIVE OAK	N	
TC	TABEBUIA CARAIBA	YELLOW TAB (GOLD TREE)	-	
TD	TAXODIUM DISTICHUM	BALD CYPRESS	DT	
UA	ULMUS ALATA	WINGED ELM	N	
UP	ULMUS PARVIFOLIA 'DRAKE'	DRAKE ELM	-	
VO	VIBURNUM OBOVATUM	WALTERS VIBURNUM (TREE)	-	
PALMS				
AW	ACOELORRAPHE WRIGHTII	PAUROTIS	N	
CH	CHAMAEROPS HUMILIS	EUROPEAN FAN PALM	N	
LC	LIVISTONA CHINENSIS	CHINESE FAN PALM	N	
PR	PHOENIX ROEBELENI	PYGMY DATE PALM	N	
RE	RHAPIS EXCELSA	LADY PALM	DT	
SM	SABAL MINOR	DWARF PALMETTO	-	
SP	SABAL PALMETTO	CABBAGE PALM	N	SPECIFY CLEAR TRUNK & HT ETC.
SR	SERENOA REPENS	SAW PALMETTO	N	

WR	WASHINGTONIA ROBUSTA	WASHINGTON PALM	N	SPECIFY CLEAR TRUNK & HT ETC.
SHRUBS				
CAS	CRINUM ASIATICUM	CRINUM LILY	-	
EP	ELAEAGNUS PUNGENS	SILVERTHORN	N	
GG	GALPHEMIA GRACILIS	THRYALLIS	DT	
HP	HAMELIA PATENS	FIRE BUSH	N	
HRS	HIBISCUS ROSA SINENSIS	HIBISCUS SINGLE RED	DT	
IF	ILLCIUM FLORIDANUM	RED ANISE	DT	
IP	ILLCIUM PARVIFLORA	YELLOW ANISE	-	
IC	ILEX CORNUTA 'BURFORDII'	BURFORD HOLLY	-	
IV	ILEX VOMITORIA 'SCHELLINGS DWARF'	SCHELLINGS DWARF HOLLY	N	
JM	JASMINE MULTIFLORUM	DOWNY JASMINE	DT	
LS	LIGUSTRUM SINENSE 'VARIEGATUM'	VARIATED CHINESE PRIVET	DT	
MF	MYRICANTHES FRAGRANS	SIMPSON'S STOPPER	-	
ND	NANDINA DOMESTICA	HEAVENLY BAMBOO	N	
PZ	PHILODENDRON ZANADUE	ZANADUE PHILODENDRON	-	
PS	PHILODENDRON SELLOUM	PHILODENDRON	DT	
PA	PLUMBAGO AURICULATA	PLUMBAGO (LEADWORT)	N	
PM	PODOCARPUS MACROPHYLLA	PODOCARPUS	-	
PN	PSYCHOTRIA NERVOSA	WILD COFFEE	-	
RI	RAPHIOLEPIS INDICA 'ALBA'	WHITE INDIAN HAWTHORN	N	
RE	RUSSELIA EQUISETIFORMIS	FIRECRACKER PLANT	N	SPECIAL PROTECTED AREAS
VOD	VIBURNUM ODORATISSIMUM	SWEET VIBURNUM	DT	
VOB	VIBURNUM OBOVATUM (SHRUB FORM)	WALTER'S VIBURNUM	-	
VS	VIBURNUM SUSPENSUM	SANDANKWA VIBURNUM	DT	
ZP	ZAMIA PUMILA	COONTIE	N	
ZF	ZAMIA FURFURACEA	CARDBOARD PLANT	-	
GROUND-COVERS				
AE	ASPIDISTA ELATIOR	CAST IRON PLANT	N	SHADE GROWN
HSP	HEMEROCALIS SPP.	DAY LILY	DT	EVERGREEN - VARIOUS COLORS
LC	LANTANA CAMARA 'GOLD MOUND'	GOLD MOUND LANTANA	-	
LMWW	LIRIOPE MUSCARI 'WEBSTER'S WIDELEAF'	WEBSTER WIDELEAF LIRIOPE	DT	
LMBB	LIRIOPE MUSCARI 'BIG BLUE'	BIG BLUE LIRIOPE	DT	
LMEG	LIRIOPE MUSCARI 'EVERGREEN GIANT'	EVERGREEN GIANT LIRIOPE	DT	
LMVG	LIRIOPE MUSCARI 'VARIATED GIANT'	AZTEC GRASS	DT	
MI	MOREA IRIDIES	WHITE AFRICAN IRIS	-	
OJ	OPHIOPOGON JAPONICUS	MONDO GRASS	DT	
OJN	OPHIOPOGON JAPONICUS 'NANA'	DWARF MONDO GRASS	DT	
OJV	OPHIOPOGON JAPONICUS 'VARIATA'	VARIATED MONDO GRASS	DT	
RS	RHOEO SPATHACEA "DWARF"	DWARF OYSTER PLANT	N	
SP	SETCREASEA PURPUREA	PURPLE QUEEN	N	

TA	TRACHELOSPERMUM ASIATICUM 'MINIMA'	LITTLE LEAF JASMINE	DT	
WT	WEDELIA TRILOBATA	WEDELIA	N	
VINES				
AC	ASTER CAROLINIANA	CLIMBING ASTER	-	
FP	FICUS PUMILA	CREEPING FIG	DT	
LS	LONICERA SEMPERVIRENS	CORAL HONEYSUCKLE	DT	
TJ	TRACHELOSPERMUM JASMINOIDES	CONFEDERATE JASMINE	DT	
FERNS				
CF	CRYPTOMIUM FALCATUM	HOLLY FERN	DT	
NE	NEPHROLEPIS EXALTATA	BOSTON FERN	DT	
OC	OSMUNDA CINNAMOMEA	CINNAMON FERN	-	
ORNAMENTAL GRASSES				
MC	MUHLENBERGIA CAPILLARIS	MUHLI GRASS	-	
PSC	PENNISETUM SETACEUM 'CUPREUM'	RED FOUNTAIN GRASS	-	
PS	PENNISETUM SETACEUM	GREEN FOUNTAIN GRASS	-	
TD	TRIPSACUM DACTYLOIDES	FAKAHATCHEE GRASS	-	
TF	TRIPSACUM FLORIDANA	DWARF FAKAHATCHEE GRASS	-	
SB	SPARTINA BAKERI	CORDGRASS	-	
AQUATICS (FOR POND PLANTINGS, WETLAND AREAS, ETC)				
DS	DISTICHLIS SPICATA	SALTGRASS		
SP	SPARTINA	MARSH GRASS / CORDGRASS		
SP	SPARTINA PATENS	SALT MEADOW CORDGRASS		
SL	SAGITTARIA LANCIFOLIA	ARROWHEAD		
CO	CEPHALANTHUS OCCIDENTALIS	BUTTON BUSH		
SL	SAGITTARIA LATIFOLIA	DUCK POTATO		
PC	PONTERDERIA CORDATA	PICKEREL WEED		
IVL	IRIS VIRGINICA LINNAEUS	SOUTHERN BLUE FLAG IRIS		
RP	ROSA PALUSTRIS	SWAMP ROSE		
CF	CANNA FLACCIDA (AQUATIC VARIETY)	YELLOW CANA		
TD	TAXODIUM DISTRICHUM	BALD CYPRESS		
TA	TAXODIUM ASCENDENS	POND CYPRESS		
BN	BETULA NIGRA	RIVER BIRCH		
QN	QUERCUS NIGRA	WATER OAK		
SB	SALIX BABYLONICA	WEeping WILLOW		

SWFWMD water requirements are as follows: Oasis (O) requires frequent irrigation, Drought Tolerant (DT) needs occasional irrigation, and Natural (N) can survive on natural rainfall.

IRRIGATION SYSTEM DESIGN GUIDELINE

November 26, 2002

MATERIAL REQUIREMENTS

All spray heads, valves, and controllers shall be manufactured by Rainbird or approved equal and all rotor heads shall be manufactured by Hunter or Rainbird.

SPRINKLER HEADS AND CONTROLLERS

Heads located in sod areas shall be 6" pop-ups. Heads located in ground cover areas shall be 12" pop-ups. Heads located next to shrubs shall be installed on schedule 40 risers, 28" in height or 4" above adjacent shrubs.

Sprinkler heads and nozzles shall be selected to minimize over spray onto pavement. Triangular spacing of heads shall be used if possible. Heads shall be spaced no further apart than 60% of the spray diameter.

Spray heads shall be installed on flex pipe, with minimum 24" slack. Rotor heads shall be installed on flex pipe. Spray heads and rotor heads shall never be located on the same zone.

Irrigation control wire shall be UF minimum 16 AWG, provided with waterproof and weatherproof connections. Wire splices shall be installed in a valve box.

Controller shall be Rainbird with ESP, with battery back-up. After initial plant establishment period, set each zone operation time to achieve 1" of water per week. A rain sensor shall be installed that will interrupt the irrigation controller from operating, when rainfall exceeds a pre-selected amount. Provide a separate controller for athletic fields (football, baseball, softball) where applicable.

PIPES AND VALVES

Pipe shall be sized so that flow rates never exceed a velocity of 5 feet per second. Main line size shall be determined by the largest zone gallons per minute. Minimize the length of main line pipe where possible. Looped mains are desirable for large systems.

Main line, sleeves and lateral lines shall be schedule 40 PVC. All pipe that will be installed under pavement or walks shall be installed inside a sleeve, sized two sizes larger than the pipe size. Main line depth shall be 18", lateral line depth shall be 12" below finish grade.

Valves shall be installed in a valve box, arranged for easy adjustment and removal. set valve in 3" of pea gravel, inside of valve box. Adjust valve flow rate to match optimum operating pressure for irrigation head type. Valve boxes shall be thermoplastic 12" x 15" x 18" rectangular with lid.

Test main line piping and valves before backfilling trenches, to a hydrostatic pressure of not less than 100 PSI, for a period of two hours. Perform operational testing after sprinkler heads have been adjusted to final position, and sod, mulch, and plant materials have been installed.