

DESIGN STANDARDS

1. **GENERAL:** This section provides guidance for the design and installation of lawns, landscaping, and irrigation.
2. **Design Principles:** The following generally characterizes the traditions and approaches to lawns and landscaping on the campus.
 - 2.1 The primary elements of the campus landscape are grass lawns and alleys of trees.
 - 2.1.1 Tree locations along sidewalks shall follow standard placement as shown in Appendix 2-B.
 - 2.1.2 All trees shall be planted a minimum of 25' from face of buildings.
 - 2.1.3 Ornamental landscape trees including crepe myrtle, redbud, lagustrum, or as listed in product standards shall be planted a minimum of 5' from face of building.
 - 2.2 The Rice Campus has historically celebrated its building architecture by minimizing heavy landscape planting at the base of the building with lawns or groundcover often extending to the face of the building.
 - 2.3 Lawns and lawn drainage shall be designed.
 - 2.3.1 Provide a minimum 2% slope on lawn areas.
 - 2.3.2 For all formal and semi-formal lawns between buildings, it is desirable to achieve a "visually" flat lawn that minimizes distinct ridges, swales and depressions.
 - 2.3.3 All site drainage shall be designed per City of Houston's Design Criteria Manual and the project specific City of Houston Letter of Utility Availability.
 - 2.3.4 Rice University has created a Campus Drainage Master Plan that responds to the City of Houston's requirement for storm water detention. This master plan and its implementation have created an excess detention capacity or "detention bank" in anticipation of further campus development. The Architect and his civil consultant shall coordinate all new project work with the current "detention bank" balance and present a clear accounting in the City of Houston permit submittal documents.
 - 2.4 All new lawns, planters and landscape areas are to be provided with an automatic irrigation system based on the following:
 - 2.4.1 Connect the new irrigation system to the current metered irrigation water main infrastructure. Include a backflow preventor at the tie-in point.
 - 2.4.2 All irrigation waterlines shall be buried a minimum of 8" below grade.
 - 2.5 Provide internal drainage for planters to prevent excessive water build-up.

PRODUCT STANDARDS

1. Landscape Materials: This section addresses landscape material selection guidelines. All final project selections are subject to the University Project Manager's approval.
 - 1.1 Trees: The Rice campus has a wonderful endowment of the many tree lined walkways and roadways. Originally, -all trees were live oak. With the threat of severe loss due to oak wilt or other disease, the University is seeking diversity in the new planters.
 - 1.1.1 For roadways and major sidewalks running east – west all bordering tree lines are to be a variety of oak that thrive in this area.
 - 1.1.2 For roadways and major sidewalks running north – south, the bordering tree lines are open to shade tree varieties that thrive in this area.
 - 1.1.3 Coordinate the placement of new utility lines and new tree locations to avoid placement over utility lines.
 - 1.1.4 All tree selections and placement shall be approved by the University's Project manager.
 - 1.2 Lawns and ground cover: The following are grass, lawn and ground cover materials approved for use on campus:
 - 1.2.1 All lawns except sports fields are to be St. Augustine. New lawns shall be placed as solid sod unless otherwise approved by the University's Project manager.
 - 1.2.2 All sports field lawns shall be Bermuda grass constructed on an engineered base for drainage. Architect shall establish basic design criteria for turf performance including: Time to use following a rain event, percolation rate), repeat use performance, and shock attenuation. Follow general standards for design and testing as covered in ASTM standards for sports fields.
 - 1.3 Automatic Irrigation System: new irrigation system design shall be based on Rainbird products including, spray and drip heads, valves, controllers etc.
 - 1.3.1 Utilize drip irrigation for all planters rather than spray irrigation.
 - 1.3.2 Utilize schedule 40 grade PVC pipe for all irrigation system piping.
 - 1.3.3 Utilize either swing joint construction or a flexible connection of to spray heads.

PERFORMANCE STANDARDS

1. Warranty Requirements: The Landscape Contractor shall provide a one year warranty on all newly installed trees and shrubs.

End of Division 2 – Lawns, Landscape and Irrigation