



1.0 INTRODUCTION

1.1 Objective. The objective of this Manual is to provide specifications and guidelines for the design and construction of grass athletic fields.

1.2 Scope of the Manual

1.2.1 Assessment of Requirements. The Manual is designed to assess the requirements for the field and to present the specifications for construction of the field to meet those requirements.

1.2.2 Field Type. The Manual applies to all types of athletic fields that require a natural turf surface on all or part of the play area.

1.2.3 Field Classification System. The Manual provides the specifications for the construction of athletic fields based on a classification system of 5 categories.

1.2.4 User's Expectation. The Manual provides a use level (permitted hours per season) which may be expected from the field where the field receives a high level of maintenance.

1.2.5 Existing Field Evaluation. The Manual contains a check-list to use in evaluating the condition of existing athletic fields which are being considered for renovation.

1.2.6 Field Dimensions. The Manual contains the approved field dimensions for most field sports using a turf surface.

2.0 ATHLETIC FIELD CLASSIFICATION SYSTEM

2.1 The Purpose. The purpose of the Athletic Field Classification System is to provide a framework for the integration of the design, maintenance and permitting of athletic fields. For this purpose athletic fields are divided into five categories. (See Figure 2.1 for a diagrammatic illustration of the classification system.)

2.2 Brief Description of Each Category

2.2.1 Category 1 Field. This category of field is constructed using the principles of the sand based root zone outlined in the United States Golf Association Greens Section recommendations or as modified by the California Construction Method. The 300 mm-deep root zone is constructed from imported, carefully selected sand. The sand is primarily selected on the basis of principles of soil physics for predictable air and water relationships in the root zone. This category of construction requires the installation of an appropriate irrigation and drainage system and an adequate budget for a high level of maintenance.

This category of field is typically intended for users with the highest qualitative requirements for play that would satisfy national or international calibre adult use. The fields are associated with services and amenities (lights, change rooms and stands) intended for functions with significant scheduled spectator attendance. The fields are generally available for play regardless of rainfall and are not subject to compaction.

PHYSICAL REQUIREMENTS

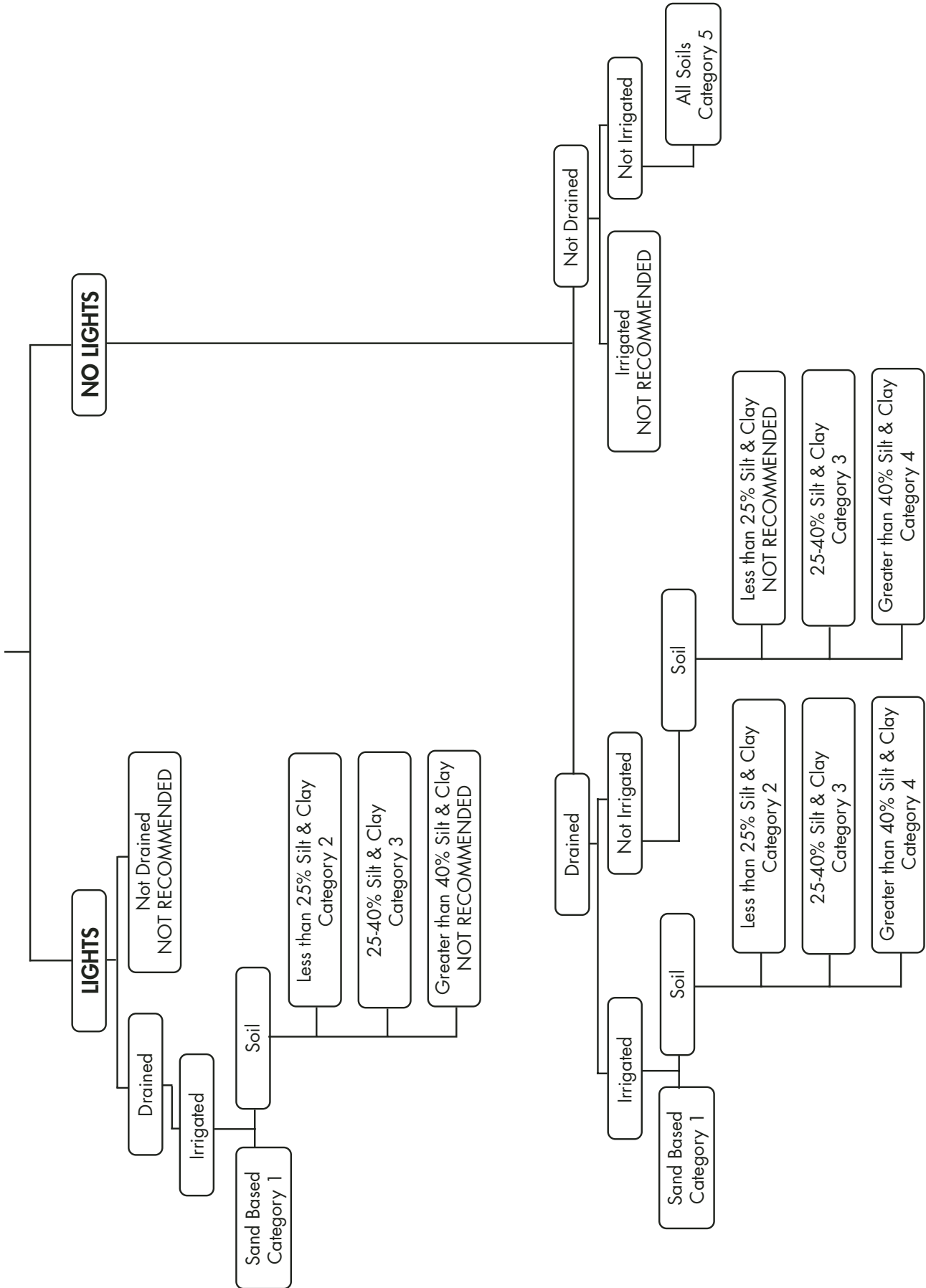


Fig. 2.1 A diagrammatic illustration of the athletic field classification system based on the physical parameters of the athletic facility.



2.2.2 Category 2 Field. This category of field is constructed from *in situ* or imported soil having less than 25% silt plus clay. For this category of field the existing soils are removed to a depth of 300 mm and stock-piled or discarded for the purpose of preparing the subgrade and installing the drainage system. The requirements for drainage are the same as a Category 1 field except the gravel layer is eliminated and the spacing between drainage lines is reduced from 5 to 3 metres. Due to the low moisture reserve of soils with 75% or more sand an irrigation system is a necessary part of the design.

While auxiliary structures such as stands and change rooms may also be associated with this design of the field, they may be more basic than required for a Category 1 field. Play on

this category of field may be subject to cancellation due to excessive rainfall.

2.2.3 Category 3 Field. This category of field has a 300 mm deep root zone of *in situ* or imported soil which may have up to 40% silt and clay. For this category of field the *in situ* soil is removed to a depth of 300 mm to permit the installation of the drainage system which is identical to a Category 2 field. The field may be designed without an irrigation system due to the more favourable moisture relationships of a soil with a higher silt plus clay content. These fields may be constructed with or without lights and with or without basic stands and change rooms.

2.2.4 Category 4 Field. The design of this category of field is for locations where the *in situ* soil to be used has greater than 40% silt plus clay. Otherwise the design is the same as a Category 3 field. Play may be interrupted due to weather conditions for extended periods. The use of slit drains to enhance the surface, as well as internal, drainage is generally necessary. On this category of field it is difficult to maintain a safe, playable surface under intensive use without high repair costs.

2.2.5 Category 5 Field. This category of field is one constructed with minimum capital. No lights, drainage or irrigation are provided and disturbance of the *in situ* soil is limited to that required to shape the surface crown and level the seed bed. This category applies to all textures of soils. The field is intended for the regular casual use by residents of the neighbourhood.

2.2.6 Summary. A summary of the design requirements for soil, drainage, irrigation and lights for the five field categories (Table 2.2.6).

2.3 Particle Size Distribution of Soils as a Guide to Field Categories

2.3.1 Analysis Requirement. A particle size analysis (soil texture) is required of the soil to be used for the root zone to assist in placing the athletic field in the correct category.

2.3.2 Assignment to Categories. Use Figure 2.3.2 to determine the field category appropriate to the soil particle size distribution.

Table 2.2.6 A summary of the design requirements for the five field categories.

DESIGN REQUIREMENT	ONE	TWO	THREE	FOUR	FIVE
Soil (% silt + clay)	<8.0	<25	25-40	>40	All Soils
Sub-Surface Drainage System	Yes	Yes	Yes	Yes	No
Irrigation	Yes	Yes	Optional	Optional	No
Lights	Yes	Yes	Optional	Optional	No