



Trinity College (MMM Group)

Construction Costs & Selection For a Natural Turf Field

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How does one determine what type of natural sports field you can afford to construct? There are many decisions that need to be made by user groups and programming staff prior to determining whether you require a high performance sand-based natural turf field or a non-modified natural turf field.

Based on my firm's (MMM Group Limited) experience over the past several years, the selection between a sand-based and non-modified natural turf field can be a difficult choice for the client as the costs for many of the fields can surpass \$200,000. Site selection is a major factor in determining sports field type. Whether the existing field is being replaced, a new field is being built, the field is a re-development of a brown-field, or the field is being built on landfill or engineered fill, the site will impact the choice of field.

There are numerous decisions that need to be made prior to constructing a natural turf field including:

- Is the site selection suitable for natural turf fields?
- Do you require FIFA accreditation or that of another international organization?
- Is field lighting a requirement?
- Is irrigation a requirement?

- Is drainage a requirement?
- And finally, you will need to hire a consultant with experience and understanding of natural turf.

Figure 1 on the adjacent page will aid in determining the type of natural turf field that is appropriate for your community and its needs.

Natural Turf: Athletic Field Pricing

Based on my experience with MMM Group Limited, I have outlined average field pricing for each category of natural turf in Table 1.

Pricing is based upon a new (green) build site or a renovation within an existing open space. Assumptions for the above pricing are that the field will be contained within a 120 x 75 square metre area and that all options within the field categories have been included within pricing.

Table 2 on page 21 outlines the permitting hours for the five categories of fields.

Note that Figure 1 (adapted) and Table 2 are from the *Athletic Field Construction Manual*, Sports Turf Association, 2008.

Design Team

Once you have determined the type of field, you will need to assemble and hire a design team. >> cont. on page 21

Table 1. Average field pricing for categories of natural turf fields.

Category	Price Per Field
1	\$575,000
2	\$520,000
3	\$475,000
4	\$410,000
5	\$280,000
Lighting	\$300,000

Figure 1: Summary of field categories based upon the Athletic Field Construction Manual, Sports Turf Association, 2008.

LIGHTS

Drainage

- **Irrigation**
 - Sand-based (Category 1)
 - Less than 25% silt plus clay (Category 2)
 - 25-40% silt plus clay (Category 3)

- **No irrigation** (not recommended)

No Drainage (not recommended)

NO LIGHTS

Drainage

- **Irrigation**
 - Sand-based (Category 1)
 - Less than 25% silt plus clay (Category 2)
 - 25-40% silt plus clay (Category 3)
 - Greater than 40% silt plus clay (Category 4)

- **No Irrigation**
 - Less than 25% silt plus clay (not recommended)
 - 25-40% silt plus clay (Category 3)
 - Greater than 40% silt plus clay (Category 4)

No Drainage

- **Irrigation** (not recommended)

- **No Irrigation**
 - All soils (Category 5)

Athletic Field Construction Manual

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Choosing the right team is essential to getting the field you want and should include the following individuals:

- Landscape architect with design and construction based experience for all types of sport fields (natural, synthetic)
- Civil engineer and stormwater engineer as required
- Geotechnical engineer
- Testing lab for soil/agronomist
- Land surveyor
- Contractor administrator with construction experience for natural turf

Depending on the location and specific requirements of the field you may want to include:

- Architect – if building is required
- Structural engineer – if building is required,
- Mechanical/electrical engineer – if building is required,
- Exterior electrical engineer – if field lighting is required,
- Certified irrigation designer – if irrigation system is required
- Geotechnical engineer – for testing and inspections

It is important that the team members you choose have collaborated before and have a good working relationship.

This article points out that there are many factors leading to the selection of a natural turf field. Site selection, cost and amenities are all important factors to consider. Once a decision has been made on the type of field you will construct, choosing the design team is equally important.



The selection between a sand-based and non-modified natural turf field can be a difficult choice for the client as the costs for many of the fields can surpass \$200,000.

Table 2. A guideline for the permitting hours of the five categories of athletic fields. Athletic Field Construction Manual, Sports Turf Association, 2008.

Category	Permitted Days	Permitted Hr/Day	Consecutive Days of Use	Permitted Hr/Season
1*	90	5	2	450
2	110	5	3	550
3	140	5	4	700
4	180	2.5	4	450
5	180	2.5	5	450

*Category 1 fields may have significant down time for restoration during the playing season. Category 1 fields require a high level of on-site supervision and management knowledge. Category 1 fields shall have controlled access.



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