

NARRABEEN SPORTS HIGH SCHOOL

A COMBINATION AFL AND SOCCER PITCH

Project Overview

Pittwater Council situated on Sydney's Northern Beaches secured a 60-year lease agreement to access the oval at Narrabeen Sports High School outside school hours for training and games.

In 2012 Council entered into an agreement with the school to construct a new full-sized artificial turf sportsfield and a three-quarter sized turf sportsfield. Council maintains the fields which are generally used by the school during school hours and are available for community hire through Council outside school use hours. Sportsfield lighting on both fields allows for training and games after dark.

Council sought tenders from suitably qualified and experienced Australian Rules Football League (AFL) accredited companies for the design and construction of a combination synthetic AFL and soccer field at Narrabeen Sports High School.

A project with unique challenges

The field is located on a flood plain and is historically subject to inundation, albeit at twenty-year intervals. Increasing finished surface levels to avert this risk was not an option, due to regulatory constraints on building within the flood plain. There was also a requirement for the design and construction of a water harvesting system that would provide water for the irrigation of a natural grass oval at the school. And finally, the playing surface was required to meet the exacting requirements of both the AFL and FIFA in order to receive certification from the two governing bodies.

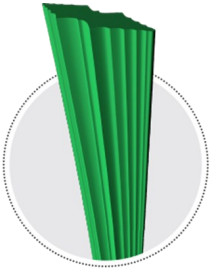
Turf One through its association with FieldTurf and its previous experience in the construction of fields on difficult sites was able to satisfy Council as to its ability to rise to these challenges.

Council accepted Turf One's proposal to install a **FieldTurf Revolution 3** synthetic surface with **cryogenically ground rubber infill**. This surface has been certified as meeting all testing requirements of the AFL, FIFA (1 Star) and the IRB (for rugby), including Critical Fall Height ≥ 1.3 metres **without the need for an underlying shock pad**.

It is the first surface of this type to be installed in Australia.

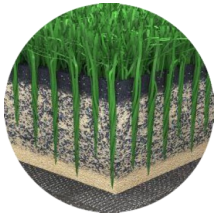
The total project cost was approximately \$2.1 million. AFL NSW/ACT contributed funding and the school contributed a grant and provided the land. The remaining funds were provided by Council through Section 94 funding by developer levies.

As with the soccer pitch that Turf One constructed for Warringah Council at Cromer Park the playing field at Narrabeen Sports High School includes design features that will raise the bar for synthetic fields in Australia, including a porous base with water harvesting facility and the latest development in football surfacing.

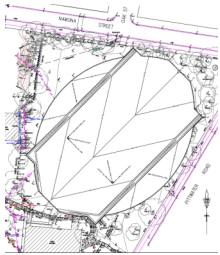


The **FieldTurf Revolution™ 3** synthetic surface is the most technologically advanced football surface available in the world today.

Unique fibre profile and extrusion process eliminates fibre breakage; strong UV inhibitors protect the turf from Australia's harsh sunlight; the specially formulated infill at over 43 kg/m² provides the safest and highest performance playing surface. The turf is manufactured using the patented Surelock™ coating system on the turf backing to provide unmatched tuft bind and drainage.



Cryogenic rubber (chilled with liquid nitrogen prior to grinding) provides a uniquely stable infill matrix, the particles being similar in both size and shape to the stabilising sand and unlike rubber particles that have been produced by grinding at ambient temperature and have ragged edges, does not have the propensity to float. The cryogenic manufacturing process also removes all rubber fines resulting in a much cleaner playing surface.



Turf One has constructed an engineered drainage system designed to harvest rainwater for use elsewhere within the school campus.



Sub-surface field drains collect water permeating through a porous base constructed from three and a half thousand tonnes of recycled aggregates in a unique profile to provide optimal drainage and a flatter playing surface. Even during the heaviest downpours all storm water will drain efficiently and rapidly through the synthetic turf. The water is pumped to a 270,000 litre storage tank at the southern side of the Assembly Hall.

Prior to construction of the new surface, nearly four thousand cubic metres of topsoil were reclaimed for use elsewhere within the campus and on other playing fields in the municipality.



Key Points of Interest:

Location	Narrabeen Sports High School, Namona Street, North Narrabeen, NSW.
Sports	Australian Rules football, Soccer and Rugby.
User	Narrabeen Sports High School and local community sporting clubs.
Size	Synthetic surface: 124m x 94m overall, area: 9,240m ² ; (oval in shape).
Line making	AFL Oval: 120m x 90m. Soccer Pitch: 96m x 60m. The pitch conforms to FIFA standards.
Surface	FieldTurf Revolution™ 3 – polyethylene multi-spined monofilament synthetic turf.
Infill	218 tonnes of kiln dried sand and cryogenically ground crumbed rubber reclaimed from 15,000 used car tyres have been installed in a patented process to provide a safe, high performance playing surface
Base	3,500 tonnes of graded aggregates.
Drainage	Deep layers aggregates have been laid down to provide a more efficient evacuation of rainwater from the surface than afforded by a network of agricultural pipes commonly employed for such fields. The increasing depth of aggregates under the lower sides of the field not only flattens the playing surface but provides more void space allowing for both retention and the efficient transmission of water to the collector drains.
Sustainability / Water harvesting	FieldTurf's commitment to the environment is demonstrated through their development of technology that allows the recycling of the surface once the turf has reached the end of its useful life. The pumped stormwater harvesting system has sufficient capacity to cope with a 1 in 20 year storm of two hours duration and complies with requirements of AS3500.3.
Shock pad	Not required. Field test results indicate a critical fall height exceeding 1.3 metres.
Pitch	Tufted goal, touch and centre lines; other lines installed using hot melt adhesive without cutting the turf backing; all seams between panels of turf have been sewn; in-ground foundations have been installed for AFL and Rugby goals and sleeves fitted for corner and centreline flags. Council has supplied roll-away soccer goals complete with nets.
Lighting	The field is lit with a four tower Musco LS-G lighting system. Twelve 1500W metal halide lamps provide 100 lux (maintained), to meet AS2560 for the soccer field and spill and glare requirements as per AS4282 and AS2560. The system has a ten year / 5000 hour system warranty.
Certification	Pitch testing was completed in December 2012 for certification to FIFA 1 STAR standard and compliance to AFL and IRB requirements.
All weather	Capacity to be used during all weather conditions including its use for intensive training sessions during the week, whilst providing a high-performance facility for weekend competition.

Project Commence-ment Date:	August 2012	Project Contractor	Venue Manager
Project Completion Date:	December 2012		
Pitch Maintenance:	Turf One FieldCare™	Turf One Pty Ltd 61 High St, Wallan, Victoria, 3756 Tel (03) 5734 1900 info@turfone.com.au	Pittwater Council 1 Boondah Rd, Warriewood NSW 2102 Tel (02) 9970 1369 Project Manager: Janelle Keegan
Final Project Cost:	\$1.32 m		