

# SYNTHETIC VS NATURAL TURF FACT SHEET

## SYNTHETIC TURF FACTS

### 1 CONSTRUCTION COST

Cost to construct a single soccer field (0.75 hectares):

- **Synthetic:** \$2 Million typically but up to \$4 Million per soccer field at some sites. For context, the 2014 MCG field reconstruction cost were less than \$1 Million per hectare
- **Natural turf best practice:** \$0.5 Million per soccer field or less depending on site conditions


### 2 MAINTENANCE COSTS

- **Annually:** maintenance costs are similar for synthetic (grooming, cleaning, spraying etc.) and natural turf (mowing, irrigation, fertiliser, spraying etc.)
- **Every 7 to 10 years:** synthetic needs the carpet to be replaced (at least \$0.4 Million). Cromer Park no. 1 had the surface and shockpad replaced after 9 years at a cost of \$1.25 Million

### 3 MICROPLASTICS

- 1 to 5 tonnes of plastic typically lost from each field per year (FIFA, 2017: 3283 fields)
- Plastic losses include infill and green yarn, so plastic losses will occur on cork and 4G fields
- All infills are prone to washing away in storms, especially cork
- If cork (or other organic infills) wash into waterways they can reduce dissolved oxygen levels and can be a carriers for other pollutants

### 4 TEMPERATURE

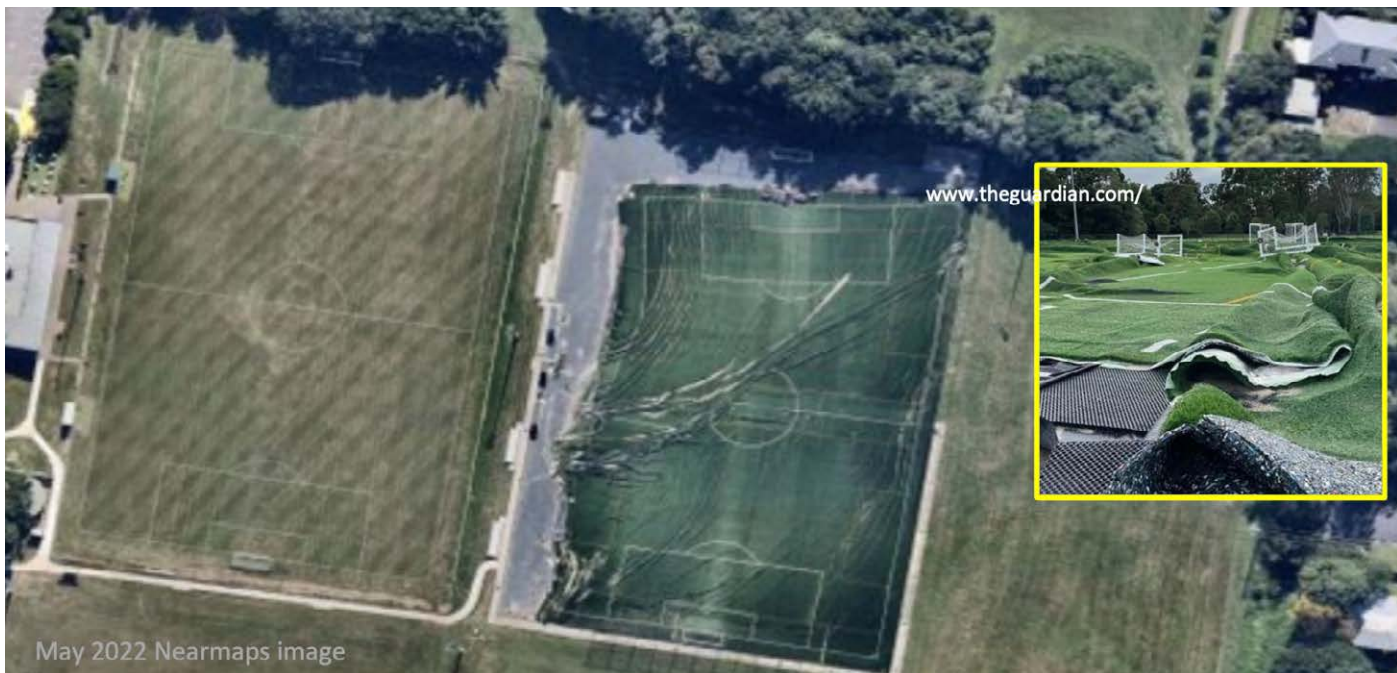
- 88°C measured on Gardiners Park synthetic field on a 28°C day (Nine News 11/2/22)
- 64°C measured on Bernie Mullane synthetic field on a 30°C day (AgEnviro, 2022)
- Cork infill fields can reach temperatures of more than 70°C
- Synthetic infill melted on players boots on a hot day 
- Heat stroke is of greater risk to young players who are closer to the ground

### 5 CLAIM TO BE ABLE TO HANDLE 60 HOURS PER WEEK OF USE

- Synthetic wears out in 5 years with 60 hours per week of use (said by synthetic turf expert)
- 99% of fields in the Sydney Basin receive less than 46 hours per week of use (AgEnviro, 2022). This is consistent with the limit by school, work and socially acceptable times to play:
  - 5 hours each weeknight (4:30 to 9:30 pm) = 25 hours per week
  - 9 hours on Saturday and Sunday (8 am to 5 pm) = 18 hour per week
  - School use 0 to 6 hours per week
- Not all hours are equal and cannot be counted the same. Fitness class, junior rugby training and adult soccer all cause very different amounts of damage to the field. Simply adding up all hours of use will over inflate demand

### 6 FLOODING RISK

- Synthetics constructed in flood detention basins cost an extra \$1 to 3 Million per soccer field
- Synthetics constructed in a 1 in 100 year (1% AEP) flood area have about a 1 in 5 chance of flooding over 20 years (claimed lifespan for synthetic shockpad). This is a major risk to the:
  - **Field:** March 2022 floods caused about \$1 Million in damage to a synthetic field in Brisbane (home of Mitchelton Football club). See Figure 1
  - **Environment:** March 2022 floods washed almost all the infill (X tonnes) off the flooded Brisbane synthetic field and into the environment



**Figure 1:** Impact of March 2022 floods on a natural turf and the adjacent synthetic field in Brisbane (Mitchelton Football Club located at Everton Park Qld). Insert shows minimal infill remaining as it was lost to the environment.

## NATURAL TURF FACTS

### 1 CARRY CAPACITY

Well-constructed and maintained (not expensive) natural turf fields can:

- Handle the demand, with examples of fields handling more than 50 hours per week of use
- Require minimal or no turf patching. If fields need frequent patching then problems other than wear need to be addressed.

### 2 DRAINAGE

- Well-constructed and maintained natural turf fields drain rapidly. In addition to elite stadiums (SCG, Bankwest, etc.) there are hundreds of well drained local fields
- Drainage system typically costs about \$100k per soccer field to install

### 3 FLOODING

- Couch can often tolerate more than two weeks of flooding
- One turf farmer cut turf for sale just 4 days after the floodwaters had subsided

### 4 WATERING

- Hundreds of sporting fields in the Sydney Basin (and in many other areas) do not even have a watering system yet perform well. These fields do not all die during a drought

### 5 SPRAYS

- Round up® is also used to spray weeds in synthetics (as per synthetic maintenance manuals)

### 6 ELITE PLAYERS PREFER NATURAL TURF

- Graze and friction burns are often reported by players
- Some elite players and/or teams refuse to play on synthetic fields
- Womens' premier league (WPL) players rated the condition of the away fields they played on. For the NSW playing field in 2018/19 season (pre-covid):
  - Natural turf fields had an average quality rating of 3.9 (0 is very poor, 5 is excellent)
  - Synthetic fields had an average quality rating of 1.6

