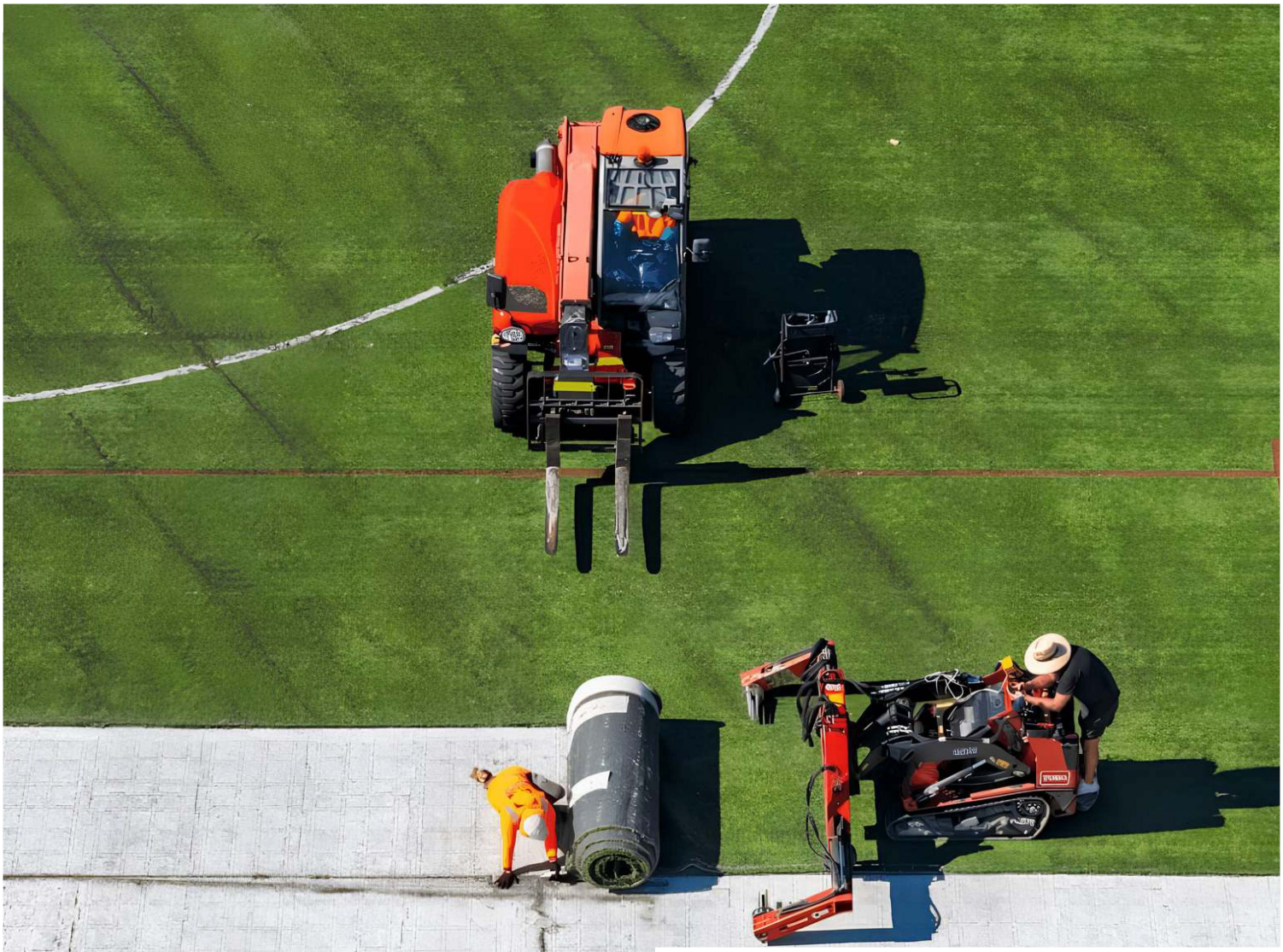
SPORTS&PLAY
INDUSTRY ASSOCIATION LIMITED

END OF LIFE, CIRCULAR ECONOMY AND ASSET STEWARDSHIP

Leadership in environmental management for future generations



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smart connection

End of Life, Circular Economy and Asset Stewardship

Purpose and Context

End of life is not the final stage of a synthetic sports surface project; it is a decision that should be planned from the first business case.
A well-managed approach protects the environment, supports circular economy goals, and avoids stranded assets or ad hoc disposal.

Government, Councils and Sports clubs should understand the surface system, expected renewal timing, material composition, recovery pathways, and budget implications before committing to a new or replacement surface.

Why End of Life is Becoming the Most Important Stage of the Asset Lifecycle

Historically, sports surface procurement has focused on installation cost, playability and maintenance. Increasingly, however, governments, councils and sporting organisations are recognising that the most significant environmental decisions may occur at the end of an asset's useful life.

The transition towards a circular economy is fundamentally changing expectations around how sports infrastructure is planned, procured, managed and renewed. Communities now expect transparency regarding material composition, environmental impacts, carbon emissions, resource recovery and waste minimisation.

For synthetic sports surfaces, end-of-life planning is no longer simply a waste management exercise. It is a measure of environmental leadership, responsible procurement and intergenerational stewardship.
The Ellen MacArthur Foundation defines a circular economy as: "A system where materials never become waste and nature is regenerated."

Applying this principle to sporting infrastructure requires decision-makers to consider not only how a surface performs during use, but also how it will be recovered, reused, recycled or repurposed at the end of its life.

Moving Beyond Disposal

The traditional linear model of: Take → Make → Use → Dispose, is increasingly being replaced by a circular model of: Plan → Design → Use → Recover → Reuse → Regenerate

For sports infrastructure this means:

- Designing for disassembly.
- Extending asset life.
- Retaining infrastructure where possible.
- Maximising material recovery.
- Reducing landfill dependency.
- Creating markets for recovered materials.

The greatest environmental benefit may not come from recycling the carpet itself, but from retaining the pavement, drainage infrastructure and shockpad for multiple replacement cycles.
This approach can significantly reduce:

- Embodied carbon.
- Resource extraction.
- Transport emissions.
- Waste generation.
- Future replacement costs.

A council should treat end of life as an asset, environmental and procurement issue. The key risks are leaving decisions too late, not knowing what materials are in the surface, and allowing deteriorated products to shed fibres or be reused in unsuitable settings.

- Maintain a live asset register for each surface.
- Record installation date, system type, warranties and usage.
- Complete condition audits from mid-life onward.
- Plan renewal funding before the surface deteriorates.
- Avoid cutting up old fields and redistributing them without a verified recovery pathway.

End-of-Life Impacts Design

When planning and designing the sports surface, consideration should be undertaken as to how the field will embrace the circular economy level at each stage of the facility life expectancy. In simple terms, the design should consider the longest possible life of the asset, including:

- Base pavement and drainage design in excess of 30 years.
- Shockpad with a warranty of 25 years plus, and able to cope with the intensity of usage above 60 hours per week.
- Carpet and infill to be able to reach at least 30,000 hours of use, based on 60 hours per week for 10 years, by ensuring its durability.
- Design of the facility and turf system so that each component part can be identified as to its lifecycle and expected use each time,

including: Carpet and infill – recycled, cleaned and components reused (organic matter), recycled into other components, such as rubber bollards etc, can be recycled (yarn, carpet and rubber infill) repurposed easily to minimise impact of landfill on the planet, and drainage base and shockpad reused for 30 plus years.

- Ensure that each procured component of the turf system can be recycled, such as carpet, infill and shockpad, or reused, such as sand and organic infill.

Material Recovery Pathways

The best end-of-life outcome depends on the system installed and the condition of each component. In many projects, the performance carpet and infill will be renewed first, while the pavement, drainage and shockpad may be retained if they still meet performance, drainage and warranty requirements.

- Carpet: recycle into new turf products, plastics, furniture or construction inputs.
- Infill: clean, test and reuse where appropriate.
- Shockpad: retain for two or more carpet cycles were compliant.
- Base and drainage: inspect, repair and retain where performance remains suitable.
- Acrylic and rubber surfaces: resurface or mill back before full reconstruction is considered.

Australia now has its first Recycling and Recovery Centre with Re4orm in Barnawartha, close to the Victorian/NSW border. The recovery of the sand is being reused in concrete and new synthetic fields, the rubber is being repurposed for rubber patented products such as bollards. The gras is being repurposed into bricks, pavers, and outdoor equipment.

Leadership Questions for Decision Makers

At the planning and design stage for the synthetic sports surface the following questions should be considered:

- What percentage of this system can realistically be recovered?
- Can the shockpad remain for two carpet cycles?
- Can the drainage and pavement remain for three decades?
- What evidence exists that materials can be recycled locally?
- How will recovered materials be tracked?
- What are the carbon implications of replacement?
- Is there a verified chain of custody?
- What infrastructure will future generations inherit?

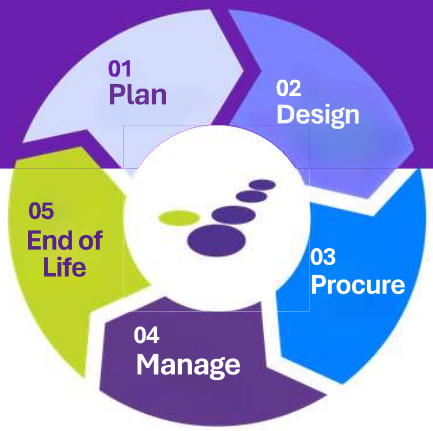
Leaving a Legacy Rather Than a Liability

The ultimate measure of a sports surface is not how it performs on opening day. It is whether future generations inherit an asset, a resource, or a waste problem.
The most sustainable sports facilities are those that:

- maximise participation
- minimise environmental impact
- embrace circular economy principles
- reduce embodied carbon
- recover materials responsibly
- leave behind valuable infrastructure for future users

End-of-life planning should therefore be considered a leadership responsibility rather than a technical exercise. When integrated from the earliest stages of planning and procurement, end-of-life thinking can transform sports infrastructure from a linear asset into a regenerative community resource that delivers environmental, social and economic value long after the first game is played.

Replacement should be based on evidence rather than age alone. Surfaces may require renewal when performance testing fails, seams open, fibres break down, infill levels become unstable, drainage performance declines, safety complaints increase, or repeated patching no longer provides value. Independent condition assessments around years seven to eight for many synthetic grass systems can help councils decide whether to repair, rejuvenate, resurface or replace.



Recommendations

The Sports & Play Industry Association (SAPIA) brings together the organisations that create the places where people of all ages and abilities can play, move and participate. Through professional standards, industry leadership and innovation, we are building and maintaining better places for a more active world.

To provide these SAPIA Insight Notes, we have partnered with Smart Connection Consulting to provide the latest technical knowledge on the issues that the community are keen to understand better. These notes are based around the NSW & SA Governments Frameworks for Decision Making for Synthetic Sports Fields.

Plan

Build end of life into the feasibility study and business case. Confirm the expected life of the carpet, infill, shockpad, pavement and drainage separately, because each component may have a different renewal cycle. Establish a sinking fund, renewal trigger points, and a preferred recovery hierarchy: retain, repair, reuse, recycle, then dispose only as a last resort. Include likely removal logistics, truck access, temporary storage, wet-weather controls and community communication.

Design

Design for deconstruction rather than demolition. Specify separable layers, accessible edges, capped sleeves, robust drainage inspection points and reusable shockpads where the sport and system allow. Avoid designs that make carpet, infill and pad difficult to separate. A 30-year civil and drainage strategy can reduce waste by enabling multiple carpet cycles over one well-built base. Whole-of-site design should also consider how recovered materials, soil, tree canopy and landscape rehabilitation will be managed.

Procure

Procurement should make end-of-life obligations measurable. Tender documents should require take-back or recycling pathways, product composition details, evidence of local processing capacity, warranty conditions, recovery certificates, and a method statement for removal. Ask tenderers to explain how carpet, infill, shockpad, sand, packaging and offcuts will be managed. Avoid vague claims such as recyclable unless the supplier can identify the pathway, location, output product and reporting process.

Manage

Good management extends life and improves end-of-life outcomes. Match maintenance to usage intensity, keep infill levels stable, clean drainage and gate capture systems, prevent contamination from litter and organic debris, and record repairs. High-wear zones should be rotated where programming allows. Annual condition reviews should track safety, performance, drainage, seams, fibre wear and recoverability, so replacement can be planned before deterioration creates environmental or user-risk issues.

End of Life

When renewal is required, dismantle the surface in layers. Capture loose infill and fibres before lifting the carpet. Separate and bag materials cleanly, protect stormwater pits, avoid cutting material into untraceable fragments, and transport components to a verified recycler or approved facility. Re-test retained shockpads and bases before reuse. At completion, collect certificates showing material weights, recovery destinations and final outputs, then update the asset register and lessons learned for the next procurement.

To understand how SAPIA can assist you in making a difference to your projects and the community understanding of this technical subject please contact the SAPIA office at office@sapia.org.au or on our website www.sapia.org.au.

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