

Precision Sports Turf Management: International Perspectives on Technology, Sustainability and Workforce Capability

Stephen Connolly

International VET Practitioner Fellowship, 2026

International Specialised Skills Institute

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01 Acknowledgements

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02
Executive Summary

Australia's sports turf industry is managing increasingly complex demands. Natural playing surfaces must remain safe, resilient and fit for purpose while organisations respond to climate variability, water constraints, rising participation, higher community expectations and rapid technological change. This Fellowship investigated how international and Australian organisations are using precision technologies, environmental information and professional judgement to improve sports turf outcomes.

This Fellowship investigated how organisations in New Zealand, Scotland and Australia are responding to that challenge. It began as an investigation into water conservation, precision irrigation, sensible chemical use and environmentally responsible turf management. As the work progressed, a more important theme became clear. The organisations achieving the best outcomes were not necessarily those with the most technology. They were those with people capable of using appropriate information well.

The international program examined community sports field management in Auckland, New Zealand, and elite stadium management at Murrayfield Stadium in Edinburgh, Scotland. These settings were deliberately selected to provide a vast array of surfaces with differing requirements for use. Auckland Council manages a large network of community assets across varied sites and levels of use. Murrayfield operates a nationally significant stadium where surface consistency, player safety, event schedules and commercial risk shape every decision. Despite these differences, the strongest finding was consistent: successful organisations were not defined by the amount of technology they owned. They were defined by how well knowledgeable people used appropriate information to make decisions.

In Auckland, precision management was supported through soil moisture assessment, irrigation monitoring, digital mapping, remote sensing and a broader asset-management approach. The Council's use of Kikuyu also demonstrated the value of selecting turf species according to climate, usage, maintenance capability and long-term resilience rather than convention alone. At Murrayfield, the selective use of soil moisture monitoring and on-site weather information challenged the assumption that leading venues must adopt every emerging technology. Technology was used where it delivered clear operational value; professional judgement remained central.

The Fellowship therefore moved beyond a study of equipment. It became an investigation into workforce capability. Soil moisture sensors, Global Positioning Systems (GPS) mapping, drone imagery, Normalised Difference Vegetation Index (NDVI), automated irrigation, artificial intelligence and other emerging systems can generate useful information, but they do not determine the response. Value is created by practitioners and sports turf managers who understand turfgrass, soils, irrigation, climate and facility demands, and who can interpret data in context.

The report recommends that Australian vocational education integrate digital capability and evidence-based decision-making throughout sports turf qualifications rather than treating technology as a standalone specialist topic. Students should learn to ask operational questions, collect reliable information, interpret data, justify decisions, monitor outcomes and communicate recommendations. Strong practical competence must remain the foundation, but it should be supported by environmental literacy, spatial awareness, critical thinking and confidence when engaging with emerging technologies.

While sports turf management provides the occupational context for this Fellowship, the findings have broader relevance across Australian vocational education. Many applied industries are responding to similar changes in digital technology, environmental accountability, automation and data-informed work practices. The Fellowship demonstrates the importance of integrating these developments into authentic vocational learning rather than treating digital capability as a standalone skill. This approach has potential application across sectors including horticulture, landscaping, arboriculture and other land-based industries where practical competence is increasingly complemented by digital literacy, sustainability and evidence-based decision-making.

The central conclusion is straightforward: better information supports better decisions, but knowledgeable people create better sports turf outcomes. Australia’s opportunity is not simply to purchase more technology. It is to develop adaptable professionals capable of selecting and applying the right tools responsibly alongside technological advancements.

03
Background of the Fellow

Stephen Connolly is the Education Manager for Sports at Melbourne Polytechnic (MP), where he leads vocational education programs across Arboriculture, Landscaping and Sports Turf Management. His career spans more than two decades working in elite sport, football, golf, education and international industry settings.

The Fellow began his career in sports turf management in the United Kingdom, working at Wolverhampton Wanderers Football Club before becoming Head Groundsman at Hibernian Football Club in Scotland. During this period he developed extensive expertise in the preparation and maintenance of elite natural turf playing surfaces while managing the demands of professional football clubs.

In 2005, the Fellow expanded his international experience through the Ohio State Global Turfgrass Program under the guidance of director Michael O'Keeffe. As part of this program, he worked at Pinehurst Resort in North Carolina during preparations for the 2006 U.S. Open Championship, gaining valuable insight into championship golf course preparation and international turf management practices.

Following his time in the United Kingdom and the United States, the Fellow continued to broaden his professional experience internationally before relocating to Melbourne, Australia. The Fellow now leads the sports turf-related vocational education program at MP, where he is committed to strengthening industry partnerships, developing workforce capability and ensuring teaching staff equip graduates of the Certificate III & Diploma programs with the practical and technological skills required by the modern sports turf industry.

The Fellow's professional interests focus on precision sports turf management, environmental sustainability, digital technologies, workforce development and applied vocational education. His International VET Practitioner Fellowship provided the opportunity to investigate leading international practices in New Zealand and Scotland and translate these findings into practical outcomes for the Australian vocational education and industry.

This Fellowship represents the culmination of a career spanning elite sports turf management, international industry experience and vocational education leadership. It reflects the Fellow's commitment to lifelong learning and to strengthening the capability of Australia's future sports turf workforce.

04
Fellowship Background

Fellowship Context

The management of natural sports turf is undergoing significant change. Across Australia, turf managers are expected to deliver safe, resilient and high-performing playing surfaces while responding to increasing environmental pressures, greater community expectations and advances in digital technology. Population growth, increased participation in organised sport, prolonged periods of drought, rising water costs, scrutinised chemical usage and heightened expectations surrounding sustainability have collectively transformed the operational environment in which sports turf professionals work (CSIRO & Bureau of Meteorology 2024, Jobs and Skills Australia 2025).

Historically, sports turf management has relied heavily on practical knowledge, visual assessment and professional experience to guide maintenance decisions. While these skills remain fundamental to the profession, rapid developments in digital technology are creating opportunities to improve the precision, efficiency and sustainability of turf management practices. Soil moisture sensors, automated irrigation systems, weather stations, drone imagery, GPS mapping and vegetation analysis now enable turf managers to evaluate surfaces with a level of accuracy that was previously unachievable (Carrow et al. 2010, Carlson, Gaussoin & Puntel 2022).

These technologies are changing more than maintenance practices, they are changing the skills required of the industry fundamentally. Modern sports turf professionals are increasingly expected to interpret data, evaluate technology, understand environmental performance and make evidence-based decisions that balance playing quality with responsible resource management. As technology becomes embedded within everyday operations, vocational education providers must ensure graduates are equipped with the knowledge and analytical capability required to work confidently in these evolving environments (Jobs and Skills Australia 2025).

Recognising these emerging challenges, this International VET Practitioner Fellowship was developed to investigate how international best practice could strengthen sports turf education and professional capability within Australia. The Fellowship sought to identify practical innovations that improve water efficiency, support environmental sustainability and enhance decision-making through the integration of digital technologies.

Rather than examining technology in isolation, the Fellowship considered the relationship between innovation, workforce capability and vocational education. Throughout the research, a consistent theme emerged; successful organisations were not distinguished by the quantity of technology they possessed, but by their ability to understand and integrate appropriate technology into informed operational decision-making. This distinction became a central finding of the Fellowship and shaped the direction of the research.

Fellowship Aim

The aim of this Fellowship was to investigate international approaches to sustainable sports turf management and determine how innovative technologies, environmental management practices and workforce capability could strengthen vocational education and training within Australia.

Through international benchmarking and Australian case studies, the Fellowship sought to identify practical approaches that improve water conservation, enhance environmental sustainability and support evidence-based management of natural sports turf surfaces.

Importantly, the Fellowship aimed not only to investigate current industry practice, but also to examine how these innovations could be translated into curriculum development, applied learning environments and professional capability across the Australian VET sector.

Fellowship Objectives

The Fellowship pursued the following objectives:

- Investigate contemporary approaches to sustainable sports turf management through international benchmarking.
- Examine the application of precision technologies including soil moisture sensors, GPS mapping, drone imagery, remote sensing and digital monitoring systems.
- Evaluate how technology supports evidence-based decision-making within community sports fields and elite stadium environments.
- Investigate strategies that improve water efficiency, turf resilience and environmental sustainability.
- Identify the knowledge, skills and capabilities required of future sports turf professionals working within increasingly digital environments.
- Translate international and Australian findings into practical recommendations for vocational education, curriculum development and industry practice.

Why This Fellowship Matters

Australia manages thousands of hectares of natural sports turf across local government reserves, schools, golf courses, racecourses, universities and elite sporting venues. These facilities represent significant public investment and play an essential role in supporting community participation, health and eventually elite sporting performance.

At the same time, the industry faces unprecedented challenges. Climate variability, increased utilisation of sporting facilities, pressure on potable water supplies and expectations surrounding environmental stewardship require organisations to maximise the effectiveness of every management decision and stand up to public scrutiny (CSIRO & Bureau of Meteorology 2024).

While technology offers significant opportunities to improve resource efficiency, technology alone does not deliver better outcomes. Organisations require skilled professionals capable of collecting reliable information, interpreting data and implementing appropriate management responses.

This Fellowship recognises that workforce capability is becoming as important as technological capability. Preparing the next generation of sports turf professionals therefore requires vocational education to evolve alongside industry, ensuring graduates possess both the practical skills and analytical capability necessary to manage increasingly complex sporting environments in the real world.

The Fellowship was initially conceived as an investigation into water conservation, precision irrigation and environmentally responsible turf management. However, as the research progressed, a broader and more significant theme emerged. Across both international case studies and Australian examples, successful organisations consistently demonstrated that technology alone does not improve sports turf management. Instead, sustainable outcomes arise through the integration of digital capability, professional judgement, organisational learning and evidence-based decision making.

For this reason, the Fellowship extends beyond the investigation of individual technologies. It considers how innovation can be translated into education, professional development and industry practice to support a more sustainable and resilient Australian sports turf sector.

05
Global Context and Literature Review

The management of sports turf has evolved considerably over the past two decades as environmental pressures, technological innovation and changing community expectations have reshaped the profession. While maintaining safe and high-quality playing surfaces remains the primary objective, turf managers are increasingly required to demonstrate efficient resource use, environmental responsibility and evidence-based decision-making. These expectations have accelerated research into precision turf management, sustainable irrigation practices and digital technologies capable of improving operational efficiency (Carrow et al. 2010, Carlson, Gaussoin & Puntel 2022).

Internationally, governments, sporting organisations and research institutions are investing heavily in technologies that optimise water consumption, reduce chemical usage and improve turf resilience. Precision agriculture, which has transformed broadacre farming through the integration of sensors, satellite positioning and data analytics, is now influencing the management of sports turf and other urban green spaces. Although sports turf presents unique challenges due to its high-performance requirements and intensive use, many of the underlying principles of precision management remain directly applicable (Carrow et al. 2010).

This chapter reviews the contemporary literature surrounding sustainable sports turf management, precision technologies and workforce capability. It establishes the research context for the Fellowship and provides a framework through which the international case studies and Australian examples can be critically analysed.

Climate Change and Water Security

Water availability has become one of the defining challenges facing sports turf management in Australia. Extended droughts, increasing temperatures, population growth and competing demands for potable water have fundamentally altered the way sporting facilities approach irrigation management. Local governments, golf courses, universities and sporting organisations are increasingly expected to maintain high-quality playing surfaces while reducing overall water consumption. This shift has encouraged the adoption of technologies capable of measuring field conditions objectively rather than relying solely upon visual assessment or predetermined irrigation schedules (CSIRO & Bureau of Meteorology 2024).

Precision turf management

Precision turf management represents the application of data-driven technologies to improve decision-making across sports turf operations (Carrow et al. 2010, Carlson, Gaussoin & Puntel 2022).

Rather than managing an entire playing surface uniformly, precision management recognises that significant variation exists within individual fields. Soil properties, moisture availability, traffic intensity, shade, compaction and turf health often vary considerably across relatively small areas. Identifying and understanding this spatial variability enables turf managers to target maintenance activities more efficiently leading to a decrease in costs and a more sustainable approach overall (Kerry et al. 2023, Kerry et al. 2024).

Technologies supporting precision management include:

- GPS positioning
- Geographic Information Systems (GIS)
- Soil moisture sensors
- Weather stations
- Digital irrigation control systems
- Vegetation indices such as Normalised Difference Vegetation Index (NDVI)
- Spatial mapping software

When combined, these technologies provide objective information capable of supporting more informed operational decisions while reducing unnecessary resource inputs (Carrow et al. 2010, Carlson, Gaussoin & Puntel 2022).

Remote Sensing and Vegetation Analysis

Advances in unmanned aerial vehicles (UAVs) have significantly expanded opportunities for sports turf assessment (Parra et al. 2024).

Drone platforms equipped with RGB and multispectral cameras enable rapid collection of high resolution imagery capable of identifying changes in turf vigour before symptoms become visible from ground level (Parra et al. 2024, Hernandez et al. 2024).

Vegetation indices such as the NDVI utilise differences in reflected red and near-infrared light to estimate plant health and photosynthetic activity (Leinauer et al. 2014, Hernandez et al. 2024). Within sports turf environments, these technologies may assist in identifying:

- Moisture stress.
- Disease development
- Traffic resulting in wear and tear
- Optimal irrigation performance
- Establishment success
- Species variation

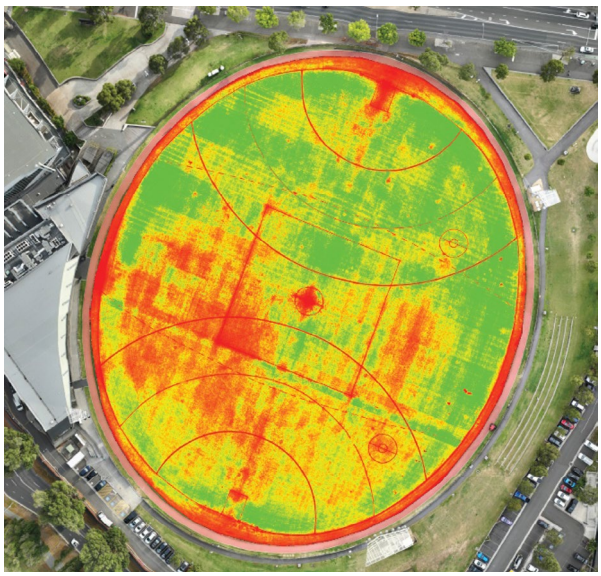


Figure 1. Example of NDVI mapping of Football Oval (photo courtesy of Cody Tucker).

Importantly, remote sensing does not replace field inspection. Rather, it enables managers to prioritise inspection and investigation by identifying areas requiring further attention (Isom 2024).

Sensors and Decision Support

The increasing availability of affordable environmental sensors has transformed the collection of real-time information within sports turf management (United States Golf Association 2025b).

Soil moisture sensors, weather stations and digital monitoring platforms provide continuous measurements that assist managers in understanding changing site conditions (Kerry et al. 2023, United States Golf Association 2025b).

Rather than replacing professional judgement, sensor technology supports better judgement.

- Irrigation scheduling to optimise performance
- Disease prediction
- Water conservation
- Resource allocation
- Renovation planning

The effectiveness of these technologies, however, depends upon the capability of staff to interpret information correctly and integrate multiple sources of evidence into everyday maintenance decisions (United States Golf Association 2025a).

Workforce Capability

While considerable research has examined technological innovation within sports turf management, comparatively less attention has focused on workforce capability.

Technology adoption is frequently constrained not by equipment availability, but by organisational capability, staff confidence and professional development opportunities (Jobs and Skills Australia 2025).

The modern sports turf manager increasingly occupies a multidisciplinary role requiring knowledge across: (Jobs and Skills Australia 2025)

- Turfgrass and soil science
- Irrigation engineering
- environmental sustainability
- GIS
- Remote sensing
- Digital technologies
- Data interpretation

Relevance to the Fellowship

This transition has important implications for vocational education and training providers responsible for preparing graduates for increasingly technology-enabled workplaces.

The literature demonstrates a clear international movement towards sustainable, data-informed sports turf management. However, significant variation remains in the adoption of technologies across organisations, reflecting differences in operational priorities, workforce capability and resource availability (Carlson, Gaussoin & Puntel 2022, Parra et al. 2024).

This Fellowship builds upon the existing literature by investigating how these technologies are being applied within real-world environments rather than under experimental conditions. Through international benchmarking and Australian case studies, the Fellowship examines not only what technologies are being used, but also why they have been adopted, how they support operational decision-making and what implications they hold for the future of vocational education in Australia.

06
International Engagement

The value of this Fellowship extended beyond the venues visited. Equally important were the discussions held with experienced sports turf professionals, local government practitioners, researchers and technology specialists throughout New Zealand, Scotland and Australia. These conversations provided practical context that complemented the literature and enabled the Fellowship to examine how innovation is implemented in day-to-day operations rather than under experimental conditions.

In New Zealand, discussions with Derek Ross and Latham Clark from Auckland Council provided valuable insight into the management of a large municipal sports field network, including the integration of soil moisture monitoring, irrigation management, asset planning and turf species selection. Additional engagement with Shane Maddren (Mexteds), Robbie Hodgkinson (Parkland) and Blair Cornthwaite (SSDM) broadened the Fellowship's understanding of irrigation technology, equipment innovation and practical implementation across the sector.

In Scotland, discussions with Alexander Latto at Murrayfield Stadium highlighted the importance of selecting technology according to operational value rather than technological novelty. This perspective became one of the Fellowship's most significant findings and reinforced the continuing importance of professional judgement within elite sports turf management.

Australian engagement also played an important role in interpreting and applying the international findings. Discussions with Cody Tucker, Sports Turf Data Analyst at Droneland, together with Stewart MacFarlane (Air2Turf), Justin Rankin (David Golf & Engineering) and Tim Bunn (Yarra Bend Golf Club), ensured that the Fellowship remained grounded in Australian practice while identifying realistic opportunities for future adoption.

Collectively, these professional exchanges reinforced that innovation is not driven solely by technology. It is driven by knowledgeable practitioners willing to share experience, challenge assumptions and continually improve industry practice.

07
International Observations

1. Auckland, New Zealand

When planning this Fellowship, I wanted to visit an organisation exposed to many of the same pressures experienced by Australian local governments. Auckland quickly emerged as a strong comparison. The Council manages a large and varied network of community sports fields while balancing participation, climate, maintenance resources, infrastructure and environmental expectations.

The value of Auckland was not one individual technology. It was the way field observations, monitoring information and asset-management thinking were brought together. That approach made the findings directly relevant to Australian councils and to the VET providers preparing the future national workforce.

New Zealand was selected as the first international case study because of its recognised leadership in sustainable sports field management and its willingness to adopt innovative technologies within local government operations. Auckland Council manages one of the largest municipal sports field networks in the Southern Hemisphere, supporting thousands of community sporting fixtures each week across football, rugby, cricket and other recreational activities.

Unlike many elite sporting facilities, Auckland's challenge is not centred on maximising television presentation or accommodating occasional international events. Instead, the Council must balance high participation rates, limited maintenance resources, changing climatic conditions and increasing expectations regarding environmental sustainability across an extensive portfolio of community sporting assets.

These characteristics make Auckland particularly relevant to Australia. Local governments across Australia face many of the same operational pressures, including increasing field utilisation, water conservation requirements, ageing infrastructure and community expectations for safe and resilient playing surfaces. Consequently, the practices observed throughout Auckland have direct relevance to Australian councils and vocational education providers responsible for preparing the future sports turf workforce.



Figure 2. The fellow at entrance to Colin Maiden Park, Home of the Auckland University Cricket Club (photo courtesy of Derek Ross).

Research Focus

The New Zealand component of the Fellowship investigated five interconnected themes:

- Sustainable water management
- Precision irrigation and soil moisture monitoring
- Kikuyu establishment and species selection
- Digital mapping and remote sensing
- Local government asset management

Rather than examining these topics independently, the Fellowship considered how each contributed to evidence-based decision-making and long-term sustainability.

Auckland Council's Operational Environment

Auckland Council manages an extensive and diverse portfolio of sports fields ranging from neighbourhood parks through to facilities capable of hosting international competitions. This diversity requires flexible management strategies capable of responding to varying levels of use, differing soil conditions and challenging environmental pressures. Discussion with Derek Ross highlighted the importance of Auckland Council's soil moisture monitoring to effectively and sustainably manage a wide variety of natural turf ground around the city (D. Ross, personal communication, 2025).

Unlike many Australian municipalities where maintenance programs may remain relatively uniform across multiple sites, Auckland increasingly recognises the need to tailor management practices according to site-specific conditions and desires. This philosophy underpins the Council's growing investment in monitoring technologies and precision management approaches to best manage these sites.

The Fellowship observed that successful sports field management within Auckland extends beyond routine maintenance activities. Specifically, Field Operations manager Latham Clark explained that decisions surrounding irrigation, turf species, renovation timing and infrastructure investment are increasingly informed by objective data rather than solely relying upon historical practice or visual assessment (L. Clark, personal communication, 2025).



Figure 3. Colin Maiden Park – Home of the Auckland University Cricket Club. This field (known as B-block) or fields 3, 4 & 5. Is a full Couch 7 Bermuda C4 grass type, cricket in summer, football in winter sports pitch. Eight strip Rye grass clay cricket block. Very drought tolerant, no drainage in this site due to its scoria base, volcanic lava from nearby Mount Wellington volcano (photo courtesy of Derek Ross).

Precision Turf Management in Practice

One of the most significant observations arising from the Fellowship was the integration of multiple information sources into routine management decisions.

Rather than depending upon a single technology, Auckland Council combines practical field observations with digital mapping, irrigation monitoring, soil moisture assessment and asset management information to develop a comprehensive understanding of field performance.

This integrated approach reflects an important principle of precision turf management.

This does not replace professional judgement; rather, it strengthens judgement by providing objective evidence capable of supporting maintenance decisions.

Throughout the Fellowship, examples were observed where drone imagery, spatial mapping and irrigation analysis enabled managers to identify variability within sports fields that would otherwise remain difficult to quantify from ground level.

These technologies support targeted intervention, allowing resources to be directed towards areas requiring attention while avoiding unnecessary maintenance across otherwise healthy turf surfaces.

Kikuyu as a Sustainable Surface

An important component of the Fellowship examined the role of Kikuyu grass within Auckland's sports field network.

Kikuyu is recognised for its drought tolerance, rapid recovery from wear and divot injury, and ability to perform across a wide range of water conditions (Muscolo, Panuccio & Eshel 2013).

Within Auckland, Kikuyu was viewed pragmatically and often selected to complement the surfaces that require high level of use and sports that are notoriously tough on grass coverage.

Rather than considering individual turf species in isolation, managers focused upon selecting grasses capable of delivering safe playing conditions while reducing irrigation demands and improving long-term resilience.

The Fellowship demonstrated that species selection should be considered alongside irrigation management, maintenance capability, environmental conditions and facility usage rather than viewed as an independent decision.

This systems-based approach represents an important lesson for Australian sports turf managers.



Figure 4. Drone image of Kikuyu grass (photo courtesy of Cody Tucker).

Community Infrastructure Rather Than Individual Fields

Perhaps the most significant observation from New Zealand extended beyond technology itself.

Auckland Council does not simply manage individual sports fields; it manages numerous community sporting infrastructures across the city and the surrounding regions influencing decisions that manage both short- and long-term requirements from each surface.

Maintenance decisions are evaluated not only according to individual field performance but also according to participation outcomes, lifecycle costs, environmental sustainability and long-term asset resilience.

For Australian local governments facing increasing participation rates and constrained budgets, this broader asset management philosophy offers valuable insight into balancing community expectations with sustainable resource allocation.



Figure 5. The fellow at Michaels Avenue outside of the main club rooms. This inspection was looking at #2 field which was installed for the 2023 Women's World Cup. A sand-based pitch with 0.5m diagonal sand slits across the pitch (photo courtesy of Derek Ross).

Emerging Themes

Several consistent themes emerged throughout the New Zealand investigation.

First, sustainability was embedded within operational planning rather than treated as a separate environmental initiative.

Second, technology adoption was driven by practical management needs rather than the availability of new equipment.

Third, successful implementation depended upon experienced sports turf managers and organisational ability rather than technology alone.

Finally, data-informed decision-making was viewed as an enhancement to professional judgement rather than a replacement for practical experience.

Collectively, these observations reinforce the central argument of this Fellowship that sustainable sports turf management requires the integration of technology, environmental stewardship and skilled professionals capable of interpreting increasingly complex information.

Key Findings

- Sustainable turf management is strengthened when technology and objective data informs rather than replaces professional judgement.
- Precision technologies enable site-specific management and more efficient allocation of resources.
- Kikuyu demonstrates significant potential within integrated sustainability strategies when matched to appropriate operational contexts.

- Community asset management provides a broader framework for maintenance decisions than individual field management alone.
- Workforce capability remains fundamental to the successful implementation of digital technologies.

Implications for Australian VET

The observations from Auckland highlight several opportunities for Australian vocational education and training providers.

Training programs should expose students to integrated decision-making processes that combine practical turf management with digital technologies, environmental monitoring and asset management principles.

Future graduates should develop confidence not only in operating equipment but also in interpreting spatial data, evaluating environmental information and communicating evidence-based recommendations.

The Fellowship suggests that technology should be embedded throughout sports turf qualifications as a routine component of professional practice rather than taught as a standalone specialist unit of competency. As recent graduates of the Australian sport turf programs, both Cody Tucker and Justin Rankin opine that modern technology (particularly NDVI) is prevalent in the VET sector and is in many ways comparable to similar training partners in Europe and the USA. Furthermore, both sports turf professionals agree it is imperative that technology and its advances are intertwined with all applicable units within the sports turf management programs offered in Australia to keep pace with international developments (C. Tucker and J. Rankin, personal communications, 2026).

2. Murrayfield Stadium, Scotland

Murrayfield challenged one of the assumptions I carried into the Fellowship. I expected a national stadium to demonstrate the broadest possible range of emerging turf technologies. Instead, I found a disciplined approach based on operational value, reliability and the capability of the people using each system.

That distinction became one of the Fellowship's most valuable insights. Technological leadership is not measured by the number of systems in use; it is measured by whether the selected tools improve decisions in the specific environment where they are required.

Elite sporting venues are often perceived as leaders in technological innovation, adopting the latest equipment and digital systems to maximise playing surface performance. It is frequently assumed that the world's leading stadiums utilise every available technology, from drone imagery and GPS mapping to advanced remote sensing and artificial intelligence.

The Fellowship consultation at Murrayfield Stadium challenged this assumption.

Rather than demonstrating widespread adoption of every emerging technology, Murrayfield illustrated a more measured approach in which technology was evaluated according to operational value, reliability and workforce capability. Discussions with the Grounds Manager demonstrated that successful turf management depends less upon acquiring technology and more upon selecting appropriate tools that improve decision-making within a specific operational environment.

This finding became one of the most significant outcomes of the Fellowship.

Murrayfield Stadium

As Scotland's national rugby stadium, Murrayfield hosts international rugby union, concerts and major events while maintaining one of Europe's most recognised natural turf playing surfaces.

Unlike community sporting facilities, elite stadiums operate under different constraints:

- Team/club requirements from the surface.
- Surface consistency.
- Player safety.
- International broadcast expectations.
- Compressed event schedules.
- Commercial risk.
- Every maintenance decision carries consequences.

Consequently, technology is adopted only where it demonstrably improves operational performance.



Figure 6. The fellow at Murrayfield Stadium, Edinburgh, Scotland.

Professional Judgement Remains Central

One of the Fellowship's most significant observations was that experienced turf managers continue to occupy the centre of operational decision-making.

Despite considerable advances in monitoring technology, maintenance programs remain heavily influenced by professional interpretation and extensive practical experience.

This distinction emerged repeatedly throughout discussions at Murrayfield and represents an important consideration for organisations seeking to invest in digital technologies.

The effectiveness of any monitoring system ultimately depends upon the capability of staff to interpret information and determine an appropriate management response.

Appropriate Technology Rather Than Maximum Technology

Perhaps the most unexpected finding from the Fellowship was the relatively selective adoption of digital technologies within one of the world's premier sporting venues. Murrayfield was not routinely utilising drone imagery, NDVI systems nor GPS spatial mapping.

Instead, management relied upon technologies considered essential to operational performance, including soil moisture sensors and an on-site weather station. These systems provided reliable environmental

information that directly supported irrigation scheduling, disease prevention and day-to-day turf management. The ever-changing weather conditions in Scotland are extremely similar to what is faced in Victoria, providing an ideal platform for suitable comparison.

This observation challenged a common assumption that technological leadership is measured by the quantity of digital systems employed.

Instead, Murrayfield demonstrated that leadership may equally be characterised by disciplined technology selection, ensuring every system delivers measurable operational value.

Workforce Capability

Discussions throughout the Fellowship consistently returned to one theme.

Technology continues to evolve rapidly and subsequently; professional capability must evolve equally rapidly to keep pace with this development.

The Grounds Manager Alexander Latto identified artificial intelligence and digital literacy as areas likely to become increasingly important throughout the coming decade. However, these technologies were viewed as supporting the expertise of experienced turf professionals and not eventually replacing jobs on the ground (A. Latto, personal communication, 2025).

This perspective reinforces the importance of vocational education in preparing graduates capable of interpreting data, evaluating technology and making informed decisions rather than simply operating equipment to support future careers in the industry.

Sustainability Through Good Decisions

Interestingly, sustainability was not discussed as an isolated environmental objective; instead, sustainable outcomes emerged naturally through efficient long-term operational decision-making. This was done through:

- Maintaining appropriate soil moisture.
- Reducing disease pressure.
- Applying water only when required.
- Maximising turf health.
- Minimising unnecessary intervention.

These decisions collectively reduced resource consumption while maintaining elite playing standards.

The Fellowship therefore suggests that sustainability is not achieved through individual technologies alone but through a management philosophy supported by accurate information and informed professional judgement.





Figure 7. Hydroponic lighting at Murrayfield Stadium, Edinburgh, Scotland.

Comparison with Auckland

Although Auckland Council and Murrayfield Stadium operate within very different environments, several common principles emerged.

Both organisations:

- Relied upon objective information to support maintenance decisions;
- Recognised the importance of workforce capability;
- Viewed technology as a decision-support tool rather than an end in itself; and
- Integrated sustainability into routine operational practice.

The principal difference lay in the technologies selected to achieve these outcomes, reflecting differing operational priorities rather than differing attitudes towards innovation.

This reinforces an important Fellowship finding - there is no universal technology package suitable for every sports turf organisation. Successful implementation depends upon selecting technologies appropriate to organisational objectives, available resources and workforce capability.

Emerging Fellowship Insight

The Murrayfield case study fundamentally reshaped the direction of this Fellowship.

Initially, the research sought to identify emerging technologies capable of improving sports turf management.

Following consultation at Murrayfield, a broader conclusion emerged.

Technology alone does not create innovation.

Innovation occurs when technology, professional judgement and organisational capability are integrated into evidence-based management systems.

This insight forms one of the central conclusions of the Fellowship and provides an important framework for considering future developments within Australian vocational education and the wider sports turf industry.

Key Findings

- Technology adoption should be driven by operational need rather than technological novelty.
- Professional judgement remains the most important decision-making tool within elite sports turf management.
- Workforce capability determines the effectiveness of digital technology.
- Sustainability is achieved through informed operational decisions rather than individual technologies.
- Technology selection should reflect organisational objectives and available capability.

Implications for Australian VET

Australian vocational education providers have an opportunity to prepare graduates for workplaces in which digital technologies complement, enhance and inform rather than replace traditional practical skills.

Training should therefore focus upon developing analytical capability, critical thinking and technology evaluation alongside existing technical competencies to create sustainable practices within sports turf management in Australia. The VET sector in Australia must seize the opportunity to enhance curriculum design and implement management of technological analysis whenever possible.

Future graduates should understand not only how to operate digital technologies but also to examine if and when they provide genuine value and most importantly where traditional professional judgement remains the most appropriate management tool.

08
Reflections and Key Findings

The Fellowship began with technologies such as precision irrigation, soil moisture monitoring, drone imagery, GPS mapping and digital analysis at the centre of the investigation. Those tools remained important, but the international observations revealed a broader conclusion.

Successful organisations integrated appropriate technology with environmental stewardship, professional judgement and organisational learning. The strongest outcomes came from an overarching management system, not from devices and data. This chapter brings those findings together and considers what they mean for Australian industry and vocational education.

The purpose of this Fellowship extended beyond identifying innovative technologies used within international sports turf management. While precision irrigation, soil moisture monitoring, drone imagery, GPS mapping and digital analysis formed important components of the investigation, the Fellowship ultimately revealed a broader and more significant finding.

The successful organisations observed throughout this research did not distinguish themselves by the quantity of technology they possessed. Instead, they demonstrated an organisational capability to integrate technology, environmental stewardship and professional judgement into informed operational decision-making.

This distinction has important implications for Australian sports turf management and, more significantly, for the vocational education sector responsible for preparing the industry's future workforce.

Technology Is Not Innovation

One of the strongest conclusions arising from the Fellowship is that technology should not be confused with innovation on its own, innovation takes place when information leads to better decisions. This was evident through discussion with managers and through observations on the sports turf industry, experience plays a vital part in high-level decision making.

Across both New Zealand and Scotland, technology was selected because it addressed clearly defined operational challenges. Whether supporting irrigation scheduling, monitoring soil moisture, improving asset management or identifying variations in turf performance, digital tools were adopted to improve outcomes rather than simply modernise existing practices.

Similarly, the Australian case studies demonstrated that technologies such as NDVI, GPS mapping and drone imagery have little intrinsic value unless they contribute to practical maintenance decisions. Sports turf managers according to Derek Ross therefore must "learn to align with the technology provided to

them and use it to make increasingly beneficial decisions to get the best results" (D. Ross, personal communication, 2025).

This distinction is particularly relevant within an environment where emerging technologies continue to evolve rapidly. Organisations that invest in technology without developing workforce capability risk collecting increasingly sophisticated data while making little improvement or impact on operational performance.

Professional Judgement Remains the Critical Skill

Despite significant advances in digital monitoring systems, professional judgement remained central throughout every organisation examined during the Fellowship.

No technology observed during the research replaced the knowledge and experience of qualified turf managers.

Instead, technology supported the decision-making process by providing objective information capable of confirming observations, identifying trends or directing further investigation.

The Fellowship therefore suggests that the future role of the sports turf manager will become increasingly analytical as the data produced continues to expand.

Professionals will continue to require strong practical skills in turfgrass management, irrigation, nutrition and renovation. However, these competencies will increasingly be complemented by the ability to interpret environmental data, evaluate emerging technologies and justify management decisions using objective evidence.

Sustainability Through Better Decisions

Environmental sustainability emerged as a consistent theme throughout the Fellowship.

Interestingly, sustainability was rarely discussed as a separate objective.

Instead, sustainable outcomes resulted from improved operational decisions.

Applying irrigation only where required.

Reducing unnecessary chemical applications.

Monitoring moisture before disease develops.

Targeting maintenance activities towards specific problem areas.

Selecting turf species appropriate for local conditions.

Each of these actions reduced environmental impact while simultaneously improving resource efficiency.

The Fellowship therefore proposes that sustainability should be viewed as an outcome of evidence-based management rather than an isolated environmental initiative.

Implications for Vocational Education

Perhaps the Fellowship's most significant contribution lies within vocational education and training.

The Australian sports turf industry is entering a period in which graduates will increasingly work alongside digital technologies capable of generating substantial volumes of environmental information.

Consequently, vocational education providers face an important challenge.

Students must continue developing practical competency while simultaneously acquiring the analytical capability required to interpret data and support evidence-based decision-making.

The broader significance of these findings extends beyond sports turf management. Across vocational education, many occupations are being reshaped by digital technology, automation, environmental expectations and increasingly data-informed work practices. The challenge for VET is therefore not simply to introduce learners to new technologies, but to determine how these technologies can be meaningfully integrated into authentic vocational practice.

The Fellowship suggests that practical competence must remain the foundation of vocational education. Digital tools should complement rather than replace the occupational knowledge and hands-on skills that underpin competent practice. Learners should experience technology within real workplace activities, developing the ability not only to operate equipment or software, but to interpret the information produced, question its relevance and apply professional judgement when determining an appropriate response.

This also has implications for educators. Maintaining contemporary training requires teachers to remain connected with industry, understand emerging workplace technologies and continually consider how these developments influence their own teaching practice. Stronger partnerships between VET providers, employers and industry specialists can support educator currency while ensuring that technological change is translated into meaningful learning rather than introduced as technology for its own sake.

This represents a shift in educational emphasis.

The objective is no longer simply producing competent operators.

The objective is to produce reflective practitioners capable of integrating technology, sustainability and professional judgement throughout their careers.

The Future Sports Turf Professional

The Fellowship suggests that tomorrow's sports turf professionals will require competencies extending beyond those traditionally associated with grounds maintenance.

Future practitioners may routinely engage with spatial mapping and environmental monitoring systems which include:

- Digital irrigation systems;
- Remote sensing;
- Sustainability reporting;
- Artificial intelligence;
- Data interpretation;
- Asset management; and
- Stakeholder communication.

Importantly, these emerging competencies complement, rather than replace traditional practical skills. Successful turf managers will continue to require extensive knowledge of turfgrass science, soils, irrigation and machinery operation. However, these competencies will increasingly be applied within technologically enabled workplaces requiring broader analytical capability.

From Reactive to Predictive Management

Another significant observation arising from the Fellowship was the transition from reactive maintenance towards predictive management.

Historically, maintenance activities were frequently initiated after visual symptoms became apparent.

By contrast, digital technologies increasingly enable managers to identify developing issues before they become visible. Soil moisture monitoring can identify irrigation deficiencies before turf stress occurs. Remote sensing may detect declining vegetation vigour before discoloration becomes apparent. Weather stations support disease prediction rather than disease response (Kerry et al. 2023, United States Golf Association 2025b, Isom 2024, Hernandez et al. 2024).

This transition has significant implications for resource allocation, operational planning and environmental sustainability.

Rather than responding to problems, organisations can increasingly anticipate them and act accordingly.

A New Model for Australian VET

The findings suggest that Australian vocational education should progressively evolve towards a learning model integrating practical experience with digital literacy and analytical thinking.

Future curriculum development should encourage students to:

- Ask operational questions;
- Collect objective information;
- Evaluate multiple sources of evidence;
- Justify management decisions;
- Monitor outcomes; and
- Continuously improve practice.
- This educational philosophy reflects the Precision Turf Management Cycle introduced in the previous chapter and positions evidence-based decision-making as a core professional competency.

Discussion Summary

Collectively, the Fellowship demonstrates that the future of sports turf management depends less upon technological advancement itself than upon the capability of professionals to interpret information and make informed decisions.

These three elements - technology, sustainability and workforce development - form the foundation of a future-ready sports turf industry.

Key Findings

- Technology alone does not improve sports turf management but can significantly improve it.
- Professional judgement remains central to effective decision-making.
- Sustainability is achieved through better operational decisions.
- Workforce capability determines the value derived from technology.
- Vocational education has a critical role in preparing the future workforce.

Implications for Australian VET

Australian VET providers have an opportunity to lead the next stage of industry development by embedding digital capability, sustainability and evidence-based decision-making throughout sports turf qualifications.

Rather than treating emerging technologies as specialist topics, curriculum should integrate them into everyday maintenance activities, ensuring graduates develop confidence in applying technology within practical workplace contexts. Implementing modern technology where applicable into suitable units within sports turf management units of competency is imperative.

This approach will strengthen graduate capability while supporting a more sustainable, resilient and technologically informed sports turf industry.

09

The Future of Sports Turf Management in Australia

Australian sports turf management is entering a significant period of change. Climate pressure, higher utilisation, new technology and increasing expectations for environmental accountability are reshaping the profession. Traditional knowledge will remain fundamental, but future practice will require stronger digital capability, analytical thinking and communication.

Australia's greatest opportunity is not to adopt every new technology as it appears. It is to prepare people who can determine what is useful, interpret the information correctly and apply it in a way that improves surface performance, resource efficiency and sustainability. The future of the profession will therefore be influenced as much by education as by innovation.

The sports turf industry is entering one of the most significant periods of transformation in its history. Environmental pressures, technological innovation and changing community expectations are reshaping how natural turf surfaces are designed, managed and maintained. While traditional knowledge of turfgrass science, irrigation and machinery operation will remain fundamental, the future profession will increasingly rely upon digital capability, environmental stewardship and evidence-based decision-making.

The findings of this Fellowship suggest that Australia's greatest opportunity does not lie in adopting every emerging technology, but in preparing a workforce capable of selecting, interpreting and applying appropriate technologies to improve sustainability, operational efficiency and playing surface performance.

The future of sports turf management will therefore be determined as much by education as by innovation.

Climate Change Will Continue to Shape the Profession

Climate change is no longer a present afterthought or a future consideration for sports turf managers; it is a current operational reality that must be addressed and planned for.

Increasing temperatures, prolonged dry periods, more frequent extreme weather events and changing rainfall patterns are already influencing turf performance, irrigation demand and maintenance planning across Australia (CSIRO & Bureau of Meteorology 2024).

These pressures will require organisations to become increasingly adaptive.

Future management decisions will rely upon:

- Continuous environmental monitoring;
- Improved water-use efficiency;
- Resilient turfgrass selection;
- Predictive maintenance;
- Integrated resource management; and
- Long-term planning based upon climatic data rather than historical assumptions.
- The profession will therefore become increasingly proactive rather than reactive.

Artificial Intelligence Will Support Decision-Making

Artificial intelligence (AI) is likely to become an important decision-support tool within sports turf management over the coming decade (Jobs and Skills Australia 2025).

Rather than replacing turf managers, AI systems will increasingly assist professionals by analysing large volumes of environmental and operational data.

Potential applications include irrigation scheduling and disease prediction through:

- Weather risk analysis;
- Resource optimisation;
- Maintenance scheduling;
- Performance benchmarking; and
- Asset lifecycle planning.

Importantly, the Fellowship suggests that AI should complement professional judgement rather than replace it. The responsibility for interpreting recommendations, understanding local conditions and making final management decisions will remain with experienced practitioners.

Robotics and Automation

Automation is already transforming many areas of landscape and agricultural management (Jobs and Skills Australia 2025).

Autonomous mowing systems, robotic line marking, automated irrigation control and sensor networks are likely to become increasingly common within sporting facilities management.

These technologies will allow organisations to improve consistency through;

- Reduction of repetitive manual tasks;
- Collection of continuous operational data;
- Improve resource efficiency; and
- Redirect skilled staff towards higher-value decision-making activities.
- Rather than reducing the importance of turf professionals, automation is likely to elevate the importance of technical knowledge and management capability.

The Digital Playing Surface

The Fellowship proposes that future playing surfaces will increasingly operate as digitally monitored environments.

Information from multiple sources may be integrated into a single management platform, including:

- Irrigation controllers;
- Weather stations;
- Soil moisture sensors;
- Drone imagery;
- GPS mapping;
- Satellite imagery;
- Machinery telemetry;
- Maintenance records; and
- Artificial intelligence.

This integrated approach has the potential to provide managers with a comprehensive understanding of playing surface performance while supporting more informed operational decisions. The future sports field may therefore become one of the most closely monitored environmental assets managed by local government and sporting organisations.



Figure 8. Example of drone mapping for Poa grass coverage (photo courtesy of Cody Tucker).

Sustainability Will Become Business as Usual

Environmental sustainability is unlikely to remain a separate initiative.

Instead, it will become embedded within everyday management practice.

Future organisations will increasingly evaluate performance through indicators such as:

- Energy consumption;
- Water efficiency;
- Chemical reduction;
- Biodiversity enhancement;
- Soil health;
- Carbon management; and
- Community outcomes.
- These measures will become routine indicators of organisational performance rather than optional environmental objectives.

The Future Sports Turf Professional

The findings of this Fellowship indicate that the future sports turf professional will require a broader range of competencies than ever before.

In addition to traditional technical expertise, future practitioners will increasingly require capability in:

- GIS and spatial analysis;
- Environmental science;
- Digital literacy;
- Remote sensing;
- Sustainability reporting;
- Artificial intelligence;
- Communication;
- Leadership;
- Project management; and
- Stakeholder engagement.

This does not diminish the importance of practical skills, instead it expands the profession to include analytical, technological and strategic capability.

The Role of Vocational Education

Vocational education will play a critical role in preparing the industry's future workforce (Jobs and Skills Australia 2025).

Training programs should continue to develop strong practical capability while progressively integrating emerging technologies throughout the learning experience.

Graduates should leave training with the ability to:

- Interpret environmental information;
- Evaluate digital technologies;
- Justify maintenance decisions;
- Communicate technical findings;
- Understand sustainability principles; and
- Adapt to rapidly changing workplace technologies.

Education must therefore evolve alongside industry rather than responding after technological change has already occurred.

A Vision for Australia

Australia has an opportunity to become an international leader in sustainable sports turf management. The country possesses:

- Internationally respected sporting organisations;
- Progressive local governments;
- Strong vocational education providers; and
- Increasing investment in environmental sustainability.

By integrating technology, research and education, Australia can develop a workforce capable of leading international best practice rather than simply adopting it. The Fellowship demonstrates that achieving this vision will depend less upon technological investment than upon the willingness of industry and education providers to develop people capable of applying innovation responsibly and effectively.

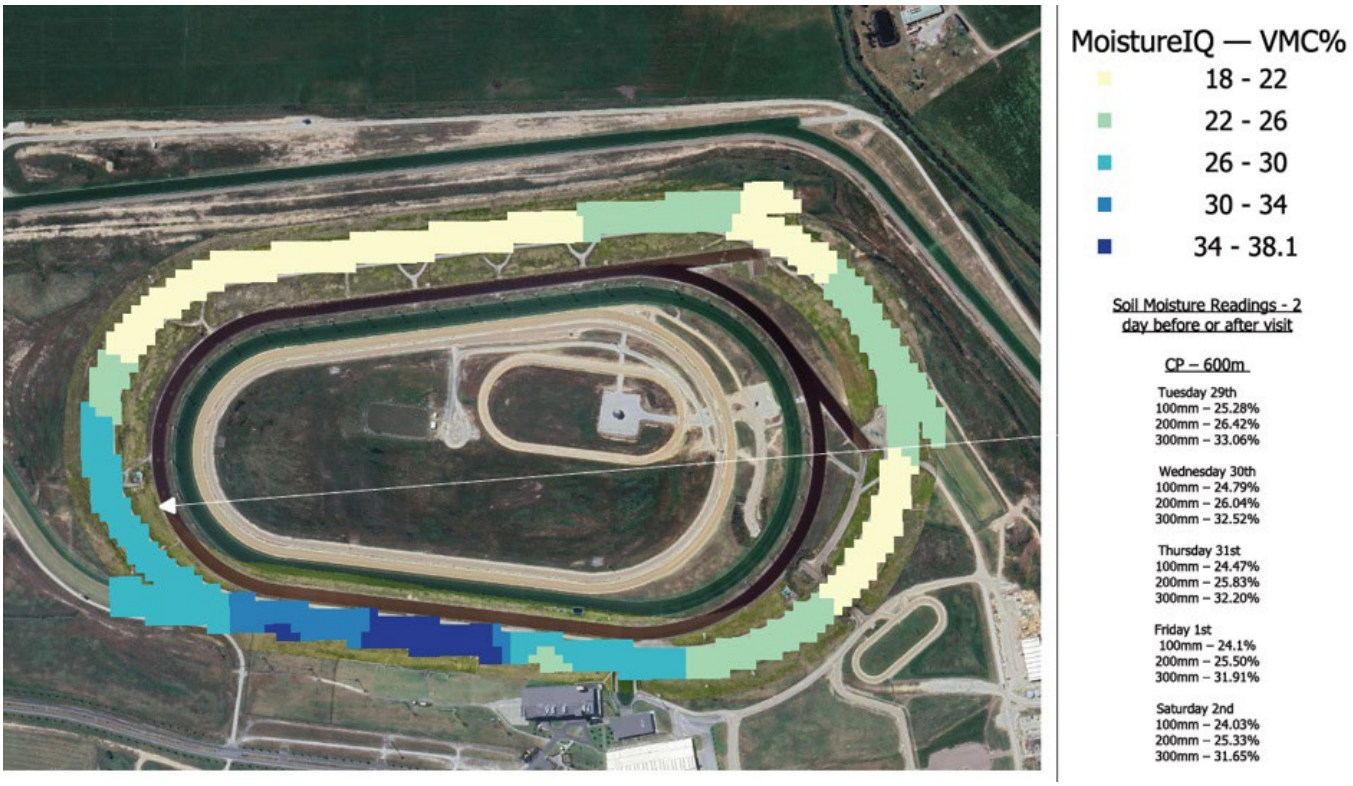


Figure 9. Example of soil moisture mapping (photo courtesy of Cody Tucker).

Vision Statement

The future of Australian sports turf management will not be defined by the technologies we purchase, but by the professionals we develop.

Technology will continue to evolve, climate conditions will continue to change, community expectations will continue to increase.

The profession's long-term success will depend upon developing adaptable, knowledgeable and evidence-based practitioners capable of integrating sustainability, innovation and professional judgement into every maintenance decision.

This Fellowship proposes that vocational education should become the catalyst for that transformation.

Key Messages

- Climate adaptation will increasingly influence sports turf management.
- AI and automation will enhance rather than replace professional expertise.
- Integrated digital systems will improve operational decision-making.
- Sustainability will become embedded within routine practice.
- Workforce capability will determine Australia's success in adopting emerging technologies.
- Vocational education will play a central role in preparing the future sports turf workforce.

10 Recommendations and Implementation

The Fellowship findings point to a practical program of work for vocational education providers, industry and employers. The recommendations below are intended to strengthen existing sports turf training rather than replace the practical foundations of the trade.

1. Embed digital capability across sports turf qualifications

Digital technologies should be introduced within normal turf management activities and units rather than isolated in a single specialist unit. Students should encounter soil moisture data when learning irrigation, mapping when assessing site variation, and environmental monitoring when planning maintenance. This makes technology part of professional practice rather than viewed as an optional extra.

2. Teach a repeatable evidence-based decision process

Students should learn to define an operational question, collect reliable information, compare that information with field observations, select a response, document the decision and review the outcome. This process is transferable across grass species selection, irrigation, nutrition, renovation, disease management, wear and asset planning.

3. Protect practical competence as the foundation

Digital literacy cannot compensate for low levels of knowledge relating to turfgrass, soils, machinery, irrigation and workplace safety. Technology should strengthen practical judgement, not compete with or replace it. Training design should continue to place students in realistic field environments where they can connect data with and sufficiently assess the condition of the surfaces under their care.

4. Build educator and industry capability

Teachers require professional development and access to current industry systems if they are to deliver contemporary training with confidence. Partnerships with councils, stadiums, contractors, technology providers and industry associations should support demonstrations, applied projects, guest presentations and workplace-based assessment.

5. Use accessible technology before specialist equipment

Training providers do not need to purchase every available system. A staged approach using portable soil moisture meters, weather information, GPS-enabled mobile devices, basic GIS platforms and shared

drone datasets can build the core skills of interpretation and decision-making before larger investment is considered.

6. Strengthen communication and reporting

Future turf professionals will increasingly need to explain resource decisions to managers, clubs, councils and communities. Graduates must practise the presentation of findings, mapping problem areas, justifying interventions and reporting outcomes in clear language in anticipation of increasing pressure from outside sources on sports turf management practices and how they affect the wider community.

7. Evaluate technology against operational value

Students and employers should be encouraged to ask what problem technology solves, what information it provides, who will interpret it, how it will alter a decision and how success will be measured. This disciplined approach reflects the strongest lesson from Murrayfield and prevents technology adoption becoming an end in and of itself.

8. Create applied demonstration projects

MP and industry partners should develop field-based projects that compare visual assessment with sensor, mapping or imagery data. Projects could examine irrigation uniformity, soil moisture variation, wear patterns, Kikuyu establishment, renovation outcomes or seasonal change. These activities would provide students with authentic evidence and build industry confidence in VET capability.

9. Extend Fellowship Learning Across Australian VET

The principles identified through this Fellowship should be shared beyond sports turf management through educator professional development, VET networks, industry forums and cross-disciplinary applied projects. While the technologies examined during the Fellowship are specific to sports turf management, the broader challenge of integrating digital capability, sustainability and evidence-based decision-making into practical vocational training is relevant across many industries experiencing technological change.

Greater collaboration between TAFEs, other training providers, industry bodies, employers and technology specialists would enable successful approaches to be shared and adapted across different occupational contexts. This would extend the impact of the Fellowship beyond an individual qualification or training provider and contribute to broader discussion about how Australian vocational education prepares learners and educators for increasingly technology-enabled workplaces.

Initial Implementation Priorities

- Review current sports turf delivery to identify where data interpretation, mapping, environmental monitoring and technology evaluation can be integrated without adding unnecessary assessment conditions and/or over-assessing.
- Establish a small technology demonstration kit and a bank of real industry datasets for use across classroom and field activities.
- Develop at least one annual applied project with an industry partner, with students collecting information, recommending an intervention and reviewing the result.
- Provide professional development for sports turf educators and create opportunities for teachers to maintain direct exposure to current industry practice.
- Share Fellowship findings through industry presentations, professional networks and curriculum discussions so the outcomes extend beyond one training provider.

Measures of Progress

Progress should be measured through practical evidence: the number of units incorporating digital decision-making, educator participation in professional development, industry projects completed, student confidence in interpreting environmental information, and employer feedback on graduate capability. The objective is not to count devices. It is to demonstrate better learning and better decisions.

11
Final Reflection

When I began this Fellowship, I wanted to understand how technology was changing sports turf management and how international practice could inform Australian vocational education. I expected the strongest lessons to come from the most advanced equipment and the largest technology platforms.

The Fellowship changed the questions I was asking. Auckland demonstrated how monitoring, mapping and asset-management thinking can support a large community sports field network. Murrayfield demonstrated the value of restraint and selecting technology only where it improves operational decisions in a real-world context. Australian practitioners and organisations reinforced that the industry already has considerable expertise and innovation; the challenge is connecting it more consistently with education and workforce development.

I returned convinced that technology is only one part of the story, albeit a vital one at that. The organisations achieving the best outcomes were not defined by what they owned and could afford to purchase. They were defined by people who understood the playing surface, weather patterns, interpreted information in context and were prepared to keep learning and evolving alongside technological advances.

That lesson will influence the way I lead sports turf education at MP, influence curriculum re-writes, the way I work with industry partners and the way we prepare future sports turf professionals. Graduates must still be able to mow, renovate, irrigate, diagnose and maintain a surface to increasingly high standards. They must also be able to work with information, question assumptions, explain decisions and adapt as technology develops.

Australia has the infrastructure, industry knowledge and vocational education capability to lead in sustainable sports turf management. Reaching that potential will depend on collaboration and a clear focus on people. Better information and technology support better decisions, but knowledgeable people create better sports turf outcomes.

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