tennis
Australia's Favourite

Tennis Australia

National Tennis Facility Planning and Development Guide

Planning your Place to Play

Contents

Foreword

Tennis is part of our national sporting and cultural heritage. The significance of tennis in Australia extends far beyond the pursuits of our elite tennis players. The sport contributes strongly to the social cohesiveness of our community and provides a safe and healthy sport and social environment for Australians of all ages and abilities. Tennis is truly a sport for life and a sport for all.

In September 2008, Tennis Australia introduced ***Tennis 2020: facility development and management framework for Australian tennis.*** The framework outlined Tennis Australia's initial vision and approach to nurturing and advancing the prospects of tennis and its facilities in partnership with our state and territory Member Associations, clubs, government and other stakeholders.

We are now excited to provide the National Tennis Facility Planning and Development Guide, building on our strategy to deliver sustainable and vibrant tennis facilities and clubs into the future.

We are now into the second phase of a robust community tennis strategy, backed by modern management practices, quality programs and coaching, to significantly grow participation in tennis over the next five to ten years. It is imperative that both our key stakeholders and infrastructure are well prepared to cater for and cope with these increased demands.

Tennis Australia and its Member Associations provide a variety of resources designed to assist with facility development. The National Court Rebate Scheme is one such resource that has invested more than $14 million in tennis infrastructure, resulting in over 1,500 new or redeveloped courts across the country. This Planning Guide is another valuable resource that will continue to strengthen partnerships and shape our approach to developing national tennis infrastructure and the services it provides.

We look forward to your continued support of our vision. Together we can grow the game and enhance the total tennis experience for all Australians.

Ready? Play.

Places to Play Operations Manager, Tennis Australia

About this guide

This National Tennis Facility Planning and Development Guide ('the Guide') has been prepared by Tennis Australia, in partnership with Tennis Victoria and the Victorian Government (Sport and Recreation Victoria) and seeks to provide guidance to tennis club operators and organisations and local councils regarding tennis facility development projects.

The Guide has been adapted from the very successful Victorian Tennis Facility Planning Guide (launched in January 2011 to all Victorian tennis clubs and Local Councils) in order to provide clubs, centres, operators and facility owners nationally with quality, consistent information regarding the planning and development of tennis facilities.

Improving community tennis facilities and places to play is a key focus area of Tennis Australia and one the sport views as vitally important to encourage more people to participate in tennis.

In addition, providing welcoming, sustainable and quality tennis environments, that are well managed and operated, is a key strategic driver of Tennis Australia's Places to Play team. Supporting clubs, facility owners and managers to deliver these environments is critical to their and our success.

The facility planning process is an essential element of providing quality tennis facilities that can continually meet the needs of club members, participants, administrators, coaches, facility operators, local councils and communities.

Planning the development of a new, or improving an existing tennis facility, is an involved process that will take time, effort and resources 'to get it right'. Involving stakeholders, communicating with local councils, combining club member skills and engaging professional services are all important steps to consider. This *Guide* provides an overview of the tennis facility planning process, and:

- identifies the key planning stages
- identifies facility provision principles
- highlights key resources available
- provides links to a range of industry sources, and
- identifies opportunities for project funding.

The purpose of the Guide is not to provide detailed technical information regarding every step in the facility design and construction process, but to provide clubs, centres, operators, facility owners and local councils with a common process and approach to tennis facility development.

Typical tennis facility projects

The National Tennis Facility Planning and Development Guide provides information and processes for a range of typical tennis club and centre facility projects.

The Guide will assist with:

- new facility development
- court construction or redevelopment
- court resurfacing and surface conversion
- water and sustainability initiatives
- floodlighting installation
- fence replacement, and
- clubhouse refurbishment or extension.

Development of the Guide is a key outcome of Tennis Australia's commitment to:

- improve the quality of the experience delivered by tennis facilities
- fund improvement of tennis infrastructure
- encourage and support the development of new facilities where they are needed most
- lead partnerships to develop multi-use community hubs
- monitor, maintain and improve court and equipment standards.

Strategic context

Tennis 2020 – Facility Development and Management Framework (June 2011)

Tennis Australia's Tennis 2020 framework clearly identifies two key foundations of tennis success; facilities and facility management.

Tennis 2020 provides a facility development and management framework for Australian tennis. The document outlines Tennis Australia's Community Tennis vision and approach to nurturing and advancing the prospects of tennis and its facilities in partnership with state and territory member associations, clubs, government and other stakeholders.

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Quality venues are vital to the continued growth of the sport. Importantly, these venues need to be commercially viable, and the key to this is through strong participation and usage.

Great quality venues need continual planning and investment. 'Places to Play' provides a vision and directive for government to invest in and for tennis venues to follow. The best performing tennis venues have a community focus with professional delivery of programs and services and Tennis Australia will continue to invest in these places to play, providing financial and management assistance.

Priorities:

- objectively understand and support club performance
- plan and build new venues according to relative supply
- partner with regional venues as premier destinations of tennis
- drive public/private partnerships to progress our largest tennis assets
- grow communities through tennis.

Places to Play (P2P)

Vision

Why we are here:

Tennis

To have the game of tennis clearly establish itself as the most popular sport and recreational activity in Australia and to ensure Australia has a pre-eminent position in world tennis.

P2P

To service tennis communities with the best planned, designed, managed and sustained places to play of any sport and recreational activity.

GUIDING PRINCIPLES

Places to Play should work towards models offering:

1. Professional management with community oversight.
2. Measurable objectives with time and personal accountability.
3. A collective approach with stakeholders to depreciation and facility upgrade/management.
4. Increased playing opportunities, with clubhouse facilities that service tennis and community needs.
5. Processes and contracts that maintain strong levels of governance, commercial and community responsibility.
6. Positive promotion of the game of tennis with program depth and scope to meet consumer needs.

Key resources and references

The following documents and reference material has been reviewed in the preparation of the Guide.

Information sources listed below provide an additional level of technical information to support planning advice provided in this Guide.

Tennis QLD Technical Manual

In 2007 the Tennis Queensland Technical Services Advisory Group produced a comprehensive Technical Manual for the design, construction and maintenance of tennis facilities. This manual provides technical detail on a variety of tennis facility development projects and is available via ***tennis.com.au/qld/clubs/facilities/technical-manual.***

Australian Standards

Many elements of tennis facility construction have relevant Australian Standards. Examples include lighting and fencing standards that guide design, construction processes, selection and use of materials and various management practices.

Reference is made throughout the Guide to specific Australian Standards that should be used in tennis facility construction projects.

More information on Australian Standards is available via ***www.standards.org.au*** and specific standards and documents are available for purchase via ***www.saiglobal.com.***

Tennis Australia Fact Sheets

Tennis Australia has developed a number of information fact sheets regarding facility development and provision, including guidance on court surfaces, fencing materials, lighting and clubhouse environments. Fact sheets are available via ***tennis.com.au/clubs.***

Artificial Grass for Sport Planning Guide

Sport and Recreation Victoria's Artificial Grass For Sport Planning Guide is targeted towards the broad and differing needs of sporting clubs and associations, the education sector and local government when installing artificial grass products.

Guide chapters are devoted to subject areas such as planning, design, project delivery, management, maintenance and replacement. The Artificial Grass for Sport Guide outlines proven processes that deliver quality outcomes, highlights outstanding case studies, and provides 'top tips' to achieve the best outcome when considering the use of synthetic surfaces.

Principles of facility provision

It is widely accepted by tennis industry professionals that two of the key foundations of tennis success are facilities and facility management.

The preparation of the Tennis 2020: Facility Development and Management Framework for Australian Tennis identified a number of key principles about tennis facility provision, development and management that should be embraced in order to achieve successful outcomes. These principles include:

1. aligned planning
2. efficient management
3. considered research and design
4. financial management
5. environmental sustainability.

An explanation of key elements of each principle is provided below. The consideration and application of these principles throughout your project planning and implementation will assist in ensuring successful delivery and positive long-term outcomes.

Aligned planning

All projects must be planned. For planning to be most effective, your project must align with the aspirations and overall strategic direction of your club/centre and be defined within a club/centre business plan or other relevant planning document.

To maximise the effectiveness of planning, it is advisable for your project plan to align with current local government, sport, recreation and community development and strategic plans.

Consultation with a range of individuals and organisations outside of your club/centre will help to identify an agreed project scope, and potential project partners, opportunities and mutual benefits. This may include partnerships with commmunity groups outside of tennis to deliver greater community benefit.

Efficient management

Consider the scale of your project and potential development. It is likely that a large redevelopment may require a change in the club/centre management or operational structure, which may have implications for your club/centre governance structure.

It is important to prepare a likely schedule of use for your improved facility that identifies all potential facility users (new and existing) and reflects management requirements needed to operate it.

Considered research and design

'Do your homework'. In particular, consider all available options to firmly identify the preferred course of action. Your preferred option or course of action should be documented and where possible, be prepared with the assistance of appropriately qualified professionals.

If your project is to include a change in court surface or inclusion of other sports/activities, select a range of suppliers and speak to other clubs and centre operators to find out the positives and negatives of each option. This will help to test their characteristics and suitability for your community.

Financial management

The short and long-term feasibility of all projects should be assessed. Lifecycle costs for key facility components should be considered in addition to the initial capital investment required. For larger scale projects such as the development of a regional tennis centre, this is generally done through a feasibility study. Feasibility may be enhanced by including a range of activities to meet community needs.

Clubs and centre operators should also be aware that as your facility grows, so will your requirements for management, administration and maintenance. This should be factored into future club/centre and facility operational budgeting.

Environmental sustainability

The challenges of drought conditions, extreme weather and increased scrutiny of the impact of human activities on the environment will further support the move towards more environmentally friendly club operations and enhance the need for water conservation plans at tennis clubs.

Tennis facility development projects should incorporate Environmentally Sustainable Design (ESD) principles where practical.

Being environmentally sustainable refers mostly to water, energy use and waste management. ESD principles will be particularly relevant for court construction and clubhouse projects, where drainage, water capture and reuse opportunities may be provided.

Environmental Policy Tips

It is important to consider Tennis Australia's Court Surface Policy and individual Member Association recommendations regarding court surface preference, and associated water use and ESD principles. Many state and local government authorities require facility funding applications to demonstrate the use and adoption of ESD principles through facility design aspects.

The facility planning process

In planning and delivering a successful facilities project, the following key phases (detailed in the following pages) of the facility planning process should be undertaken. Further explanation of each phase follows in Table 1.

The level of detail required in the planning and feasibility phases of your project will depend on the type and scale of your project.

For instance, the replacement of court enclosure fencing would require significantly less planning than the addition of new tennis courts, however, the key principles and processes remain the same.

Table 1: Facility Planning Process

PHASE 1	PROJECT PLANNING
Needs assessment What do we want to achieve, why and who for?	• Identify club/centre, tennis and community values • Complete a demographic analysis • Identify relevant trends • Analyse the local tennis market • Review the adequacy of existing community facilities • Consult with key tennis and community partners • Develop a club/centre business plan
Decision point	• Better utilise existing facilities OR • Upgrade existing facility OR • Develop new facility
PHASE 2	**PROJECT DEVELOPMENT**
Feasibility and site assessment What, where, how much and how do we make it work?	• Prepare a detailed description of the proposed project • Consult with key tennis and community partners • Identify and assess preferred sites/locations • Prepare draft concept plans • Prepare draft management plan • Assess capital, operational and life-cycle costs
Decision point	• Proceed, modify, postpone or stage development OR • Abandon proposal
PHASE 3	**PROJECT REFINEMENT**
Design What does it look like? What are the technical elements?	• Identify goals for project development • Prepare a project budget (seek/confirm funding) • Prepare design brief • Seek necessary approvals i.e. planning and building permits • Prepare detailed designs and budget estimates • Engage contractors
PHASE 4	**PROJECT DELIVERY**
Construction	• Facility construction and commissioning
PHASE 5	**PROJECT DELIVERY**
Management	• Project evaluation • Facility operational

Phase 1 – Club, centre, community and tennis needs

The first phase in the facility planning process is to undertake a club, centre and tennis needs assessment. Undertaking this process will assist stakeholders to verify actual stakeholder and facility needs.

The needs assessment should include discussions with the tennis community, local and state agencies (including Member Associations), your local council, local schools and other providers of tennis and recreation programs that may be influenced or impacted by your proposed development. It may also include discussing wider community needs including arts, culture and community services.

If a facility development appears necessary, the needs assessment will also provide clear direction regarding project scope, scale and preferred mix of facilities to be provided. It will also help all partners involved to develop key objectives around 'why you are undertaking the project and what it will aim to achieve?'

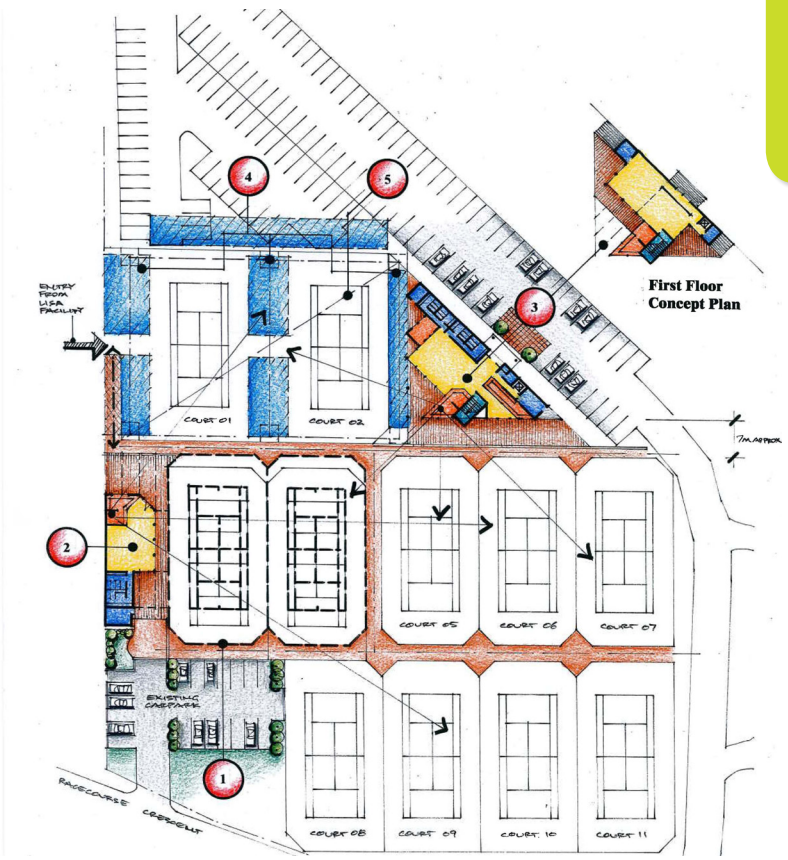
The key elements of a facility needs assessment include:

- identification of club/centre, member and user aspirations
- schedule of existing court usage
- identification of any local trends that may influence a facility development
- consultation with your community and people outside your club/centre and ask what they may wish to see provided
- review of existing on and off-court facilities and services provided
- assessment of current court and facility maintenance practices
- assessment of other local clubs or similar facilities to identify competitors and/or gaps in the market.

One effective way to conduct a needs assessment is to complete a club/centre business plan, where all needs, including programs, services, membership, communication, marketing, operations and financial management can all be addressed in detail.

In identifying key business planning needs, clubs and centres can conduct a Club Health Check using Tennis Australia's on-line benchmarking tool via ***tennis.com.au/clubs/management/club-health-check.***

Figure 1: Facility Concept Plan



Business Planning Tip

Tennis Australia and Member Associations each provide various resources to assist clubs and centre operators in developing business and club/ centre management plans.

The facility planning process - Phase 2

Phase 2 – Feasibility and site assessment

All facility development projects will require some level of site assessment and feasibility to determine whether they are viable and practical.

The primary purpose of preparing a feasibility assessment is to enable an objective decision regarding the longer-term viability of your proposed project.

The level of detail required in your feasibility assessment will differ depending on the scale of your project. For large scale projects, the appointment of an independent consultant may be required.

Your project feasibility should combine a range of input and advice from various planning and technical partners and may include:

- analysis of the local market for tennis, as well as analysis of other community needs.
- preparation of project success criteria and key objectives
- a technical analysis of existing facilities and/or the proposed new site or location
- concept plans and options
- likely project development and facility lifecycle costs
- impact of your project on the local environment
- a potential management and operations plan, including projected facility operating costs, governance structure and day-to-day management responsibilities
- identification of key partners to assist in project support, resourcing, delivery, future use and management.

Technical Tips

A technical analysis of your facility at this early stage may include a geotechnical assessment and site survey plan of the proposed land area. This will assist you to better understand the existing soil type and the implications it may have on construction.

Additionally, identifying any subsurface issues and the exact size and levels of the land area available will help to ensure concept options prepared are as accurate as possible. Addressing these items at a later stage in the process might incur additional costs and potentially require redesign if issues are not considered in advance.

Site services plans should be requested from your local council and service suppliers (i.e. water, drainage, sewerage, power, gas and telecommunications). *Note:* Some or all of these plans may be sourced via 'Dial Before You Dig'. For more information visit ***www.1100.com.au.*** It is also advisable to undertake a building condition audit should any redevelopment of clubhouse, pavilion, shed etc be part of your project.

Tennis Australia and Member Associations have a range of technical advisors available to assist clubs/centres and facility owners in preparing concept plans, design options and project cost estimates to help inform feasibility analysis.

The facility planning process - Phase 2

Budgeting

Once the decision has been taken to proceed with your project, you will need to set a realistic budget for the proposed scope of works - one that is also achievable to fund.

Capital replacement and lifecycle costs associated with your project will be considered in previous planning stages, but should be confirmed in your project budget. Allowance for cost escalations and contingencies are an important element to project budgeting as materials and labour costs can vary without notice.

Be mindful that from the time you commence planning your project to 'turning soil', it is likely that the cost of construction and materials will increase, particularly if your project planning spans a number of years.

Managing your project cash flow will be important to your success. Contractors will expect to be paid as they complete various stages of work and you will need to ensure that club or partner funding is available to pay out upon satisfactory completion of work.

Budget Tip

You should make allowances for GST within your project budget. Many prices are often quoted exclusive of GST, creating an unbudgeted additional 10% on top of your project costs. Regardless of whether your club/centre is registered for GST, you are obligated to pay GST for products and services.

Technical Tip

Tennis Australia has produced a lifecycle cost guide for tennis court surfaces and other associated facilities. This Guide is available at ***tennis.com.au*** and considers the long-term replacement and maintenance costs associated with various components of tennis court infrastructure.

Sport and Recreation Victoria has produced a Capital Replacement Program information sheet that will assist clubs/centres to budget for the eventual replacement of infrastructure. The information sheet is available via ***www.dpcd.vic.gov.au/home/grants/all-grants.***

The Western Australian Department of Sport and Recreation has published an Asset Management Guide for sport and recreation facilities that guides asset provision, maintenance and sustainability. This Guide can be downloaded via ***www.dsr.wa.gov.au/assetmanagementguide.***

The facility planning process - Phase 3

Phase 3 - Design

Should your feasibility assessment and project budget identify that your project is viable, the project then enters the design phase. This stage is critical to the overall success of the project and in achieving its objectives.

During this stage, the club/centre management committee or facility manager should be involved in all facets of the facility design process. Any facility design should consider two important facets:

- site and technical elements
- future management and operational requirements.

Site and technical elements to consider in facility design include:

- site details, topography and any identifiable constraints
- site plan showing the extent and scope of land available and ownership details
- plans and details of existing buildings, main services and ground/soil conditions
- schematic diagram of proposed development
- schedule of specific development or construction requirements
- details of any planning conditions to be considered in development (eg. car parking requirements, building height restrictions, floodlit spill)
- timeline for construction and project delivery and any climatic influences.

Most site and technical elements of project design are generally incorporated into drawings, layout plans and associated documentation. This collection of information is often referred to as a technical specification.

Management and operational planning will outline how the new or redeveloped facility will be used and managed and should consider the following key components:

- activities and user groups to engage
- key programs and services to be delivered
- pricing and usage costs
- court and facility schedule of use
- marketing and promotional initiatives
- proposed facility management structure
- capital replacement program (refer to technical tip on page 9)
- risk management
- operating budget.

Even if your facility development provides little change to your existing operations, the above areas of your club/centre should still be considered to ensure you are getting the maximum use and value from your facility.

Disability Standards for Access to Premises and Universal Design

The Disability Standards for Access to Premises set out the requirements for new and refurbished buildings to allow access by people with disability. It is expected that all new facility developments comply with the Disability Standards for Access to Premises as a minimum.

Please visit the 'Disability Discrimination' section of ***www.ag.gov.au*** for copies of the Standards and incorporate them into your building planning.

In addition, clubs and centre operators and facility owners are strongly encouraged to consider Universal Design elements in facilities. Universal Design is a philosophy that encourages building development beyond what is required by the Disability Standards for Access to Premises.

Universal Design encourages the development of facilities suitable for use by everyone including people with vision and hearing impairments, families with prams and young children, people with injuries, the elderly and people with mobility impairments.

Clubs, centre operators and facility owners should consider ways to ensure access in any facility development, not just for people with a disability but for the whole community.

Facility developments should consider:

- the number of accessible sanitary facilities
- circulation space in lifts, at doorways and in court enclosures
- passing or turning spaces along long pathways
- access to upper floors, either via a ramp or lift
- appropriate access to people with hearing and vision impairment
- signage and way finding.

Design consultants

Whilst an additional cost to your project, design consultants are highly recommended and are a valued part of your design team, particularly for medium to large scale projects. They bring specialist skills in defined disciplines and can ensure that independent design input is provided to meet project needs. They also ensure that appropriate design solutions are recommended and meet relevant industry standards and building codes, as well as keep project costs within budget.

Key design consultants to consider include:

- architect
- geotechnical engineer
- civil and structural engineers
- building and land surveyors

- electrical engineer
- lighting designer
- quantity surveyor or cost planner
- landscape designer or architect
- arborist
- acoustics consultant.

Phase 4 - Construction process

Technical Tip

When requesting quotations or tenders from contractors (for small, medium or large projects), always prepare a brief (design brief and/or technical specification) for contractors to base their price and scope of works on. This will help you to compare like for like prices and evaluate which companies are providing you with the best value for money.

Following the preparation of the design brief and technical specification, contractors can be sought to start project construction.

Your project manager or local council will be able to provide advice on the most relevant process to undertake when appointing contractors. Commonly, medium to large scale projects require formal tenders to be submitted, with smaller scale projects requiring a number of contractors to provide quotations. Industry benchmarks usually specify a minimum of three quotations to assist with price comparison.

Technical specifications are commonly used to define the project scope of works and the minimum standards or requirements by which the work is to be completed. You (or your project manager) will also use the technical specification to apply for planning and building permits, and to guide the contractor tender processes.

A construction timeline should also be developed to help monitor progress and to ensure your club can revise its operations and maintain member services through the construction phase. Be aware that various construction projects may be subject to weather conditions, which should be factored into the construction timelines.

Planning permits

A planning permit is defined as 'a legal document giving permission for land use or development.'

A planning permit may be specific to a person or operator and it is always subject to a time limit and expires under specified circumstances. The issuing authority (usually your local council) may impose conditions when granting a permit.

Planning permit requirements will vary between states and between local councils. You should always seek advice from your local planning department regarding planning scheme provisions and planning permits early in your planning process.

Building permits

You should seek clarification from your local council planning department on whether you require any building permits as part of your facility planning process.

Building permits relate to the method of construction of a building or development. If you have a planning permit you may still need to get a building permit.

It is common for floodlighting poles that exceed 8m in height (or other local height restrictions and planning overlays) to require a planning and a building permit prior to their installation.

Australian Standards

Many elements of tennis facility construction have relevant Australian Standards that guide materials, construction and installation methodologies and various management practices. More information on applicable Standards is provided in the following chapter – Facility Development Considerations.

Building Code of Australia

The Building Code of Australia (BCA) provides a nationally accepted and uniform set of technical requirements for all areas of building, from design to construction. The BCA was developed by the Australian Building Codes Board (ABCB) on behalf of the Commonwealth, State and Territory Governments, the BCA is referred to as the building regulation in all States and Territories.

Project management

If your project is of significant scale, you may wish to engage a project manager to assist you in the coordination of design and construction phases.

The project manager would be responsible for managing the activities and deliverables of the design team and the construction program. They would also prepare a

Project Management Tip

If you are managing your own construction project, ensure a representative attends the site each day the contractor(s) are working. Don't be afraid to ask questions or check what they are doing against your technical specification. It's your project and you should be in control.

project timeline that considers a range of external factors including, government budget cycles, grant funding cycles and acquittal procedures, lead time for ordering materials, implications of weather impacts and impact on existing club operations and court use.

If your project is not large enough to justify the services of a project manager, your local council may assist you in evaluating and appointing various contractors.

It is advisable if clubs are managing their own project to appoint an internal contact who will provide communication and liaison services between all project partners, including club committee, members, facility managers, contractors and local council representatives.

Phase 5 - Management

Throughout the planning, refinement and development phases of your project, staff and volunteers should be involved and consulted to provide practical and operational advice to ensure your facility can be managed efficiently. It will be important for this consultation to be undertaken prior to any construction taking place.

Following the construction stages of your project, getting your facility operating to its full potential begins, as does regular monitoring of its performance.

A key element to managing your club/centre and facility is the incorporation of risk management, and includes addressing potential financial risks, maintenance, safety and potential injury risks, resource availability etc. All identifiable risks should be documented, evaluated and addressed to assist in alleviating and/or managing them.

Management performance benchmarks

Tennis Australia, in collaboration with The University of South Australia (CERM ©) have developed a series of tennis club and centre performance benchmarks to assist Australian tennis facility operators to annually benchmark the performance of their tennis facility.

Providing benchmark indicators will assist clubs and centre operators in determining where best to allocate resources and regularly identify any operational issues in order to address them quickly.

How can the results be used?

- To analyse against like facilities around Australia.
- To help the club with planning for the future.
- To compare performance to the current Business Plan, or use to write or update a Business Plan.
- To put processes into place to increase secondary spend (canteen, court hire, club room hire, coaching opportunities).
- To engage the council and club in communication with its Member Association.
- To engage a coach or update an agreement with the coach.

What does council receive?

- A clear understanding of the performance of the tennis venue.
- Evidence approached to planning, including determining service/infrastructure priorities.
- Access to the National Court Rebate Scheme for its eligible venues.
- Leverage for stakeholder assistance.

Management guidance in terms of objectives and policies - What does the club receive?

- Data to assist with future planning.
- Guidance and planning assistance from their Member Association.
- Objective measures for goal setting.
- The ability to apply for eligible projects under the National Court Rebate Scheme.
- The ability to enter the national Club of the Year awards.

Club management and performance benchmarks can be accessed via ***tennis.com.au/clubs/management.***

Risk Management Tip

A number of Member Associations have developed a Risk Management Manual for Tennis Clubs that will help to identify and evaluate risks and create a policy to manage them within the tennis club environment.

HB – 2010 Guidelines for Managing Risk in Sport and Recreation provides those involved in sport and recreation with guidance on risk management principles, process steps and applications based on Standards Australia/ Standards New Zealand Joint Technical Committee for Risk Management. This Handbook has been prepared to enable better understanding and application of effective risk management within the sport and recreation sector. It supersedes HB 246—2004 - Guidelines for managing risk in sport and recreation.

It offers a national framework to guide the understanding and management of risk, and provides a common platform to support strategies and resources directed towards dealing with risk management issues.

Facility development considerations

The key facility development considerations included in this chapter include:

- site investigation
- court layout and orientation
- base construction
- court surface type
- court surface selection
- multi-use courts
- MLC Tennis Hot Shots courts
- floodlighting
- fencing
- court equipment and accessories
- grounds and surrounds
- clubhouses
- the environment.

All elements of a tennis facility are linked and often depend on each other to function effectively and be managed efficiently. Careful consideration needs to be given to the scale of each facility element to ensure it is aligned with its intended purpose and use. It is also important to ensure that off-court amenities can adequately support court related infrastructure.

Site investigation

All site specific conditions should be assessed prior to undertaking any construction works, and even better, prior to any quotes, tenders or contracts being prepared.

Site investigation should be conducted as part of your project planning, following the completion of your needs assessment. This phase is likely to require professional service contractors to undertake specialist or technical analysis tasks.

Your site investigation should address the following key elements:

- storm water flow and drainage conditions
- condition of sub-grade base
- location of existing services (eg. power, gas, water, sewerage, telecommunications etc)
- vegetation or remnants of tree roots
- site levels, orientation and wind exposure
- site access for construction machinery
- residential or urban development considerations that may be impacted by your development.

Soil conditions

In tennis court construction, proper grading and consistent compaction often determines the success of installation. To achieve this, knowledge of sub-grade and soil conditions is required.

Most sites will require an investigation of existing soil conditions, and it is recommended that no major construction commence without first obtaining a soil report from an appropriately qualified professional (e.g. geotechnical engineer).

Like many construction projects, tennis courts are susceptible to variations in soil type, the presence of moisture and changing environmental conditions.

A soil report will determine the stability of the proposed site and will inform engineering decisions around the most appropriate court base design, construction and infrastructure installation.

Technical Tip

A soil report prepared by a qualified geotechnical engineer will be the single greatest investment you can make into your project planning. The findings from this report will provide recommendations on the most appropriate design for court bases, drainage and floodlighting, fencing and building footings. Commonly, a geotechnical investigation would be less than 1% of your total project cost.

Court layout and orientation

Your court layout will be dependent upon the configuration of your existing courts, buildings and available land area. This Guide infers that most clubs and facilities are undertaking redevelopment and refurbishment projects rather than constructing new facilities on 'greenfield sites', although the principles are still relevant.

Court dimensions

The standard dimensions of a tennis court (Total Playing Area - TPA) are defined in the International Tennis Federation's Rules of Tennis.

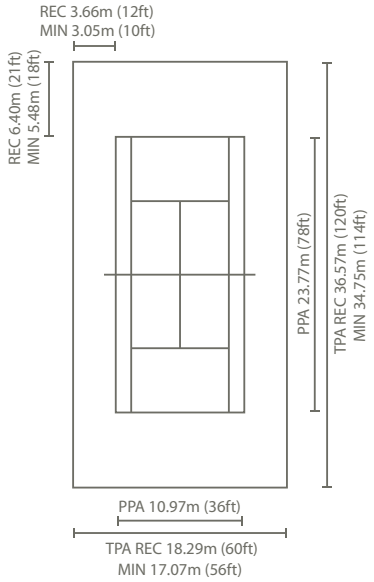
Although the game is best played on a full sized court enclosure (36.6m x 18.3m), the minimum recommended size (34.77m x 17.07m) can be suitable for social and club play.

It is recommended that all new tennis courts be built to full size requirements. This will assist in ensuring current standards are being met and may also reduce the likelihood of player injury.

Facility development considerations

The following diagram provides a guideline for minimum and recommended court dimensions for both recreational and club play.

Figure 2: Recommended tennis court dimensions



Playing Area

For international standard tournaments the overall area required is defined dependent on the event. A guide to minimum court area requirements (single courts) can be found in table 2.

Table 2: Recommended playing area

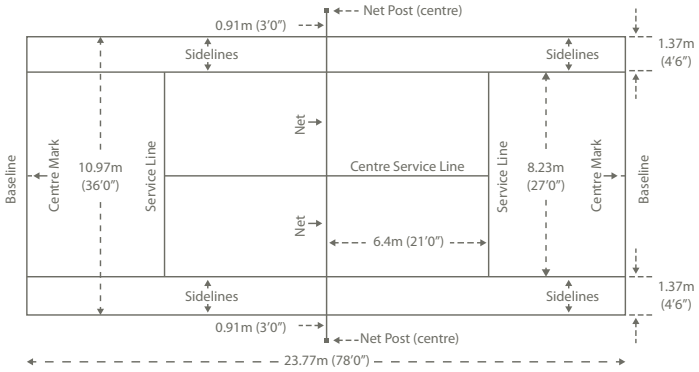
Court dimensions	Club/ Recreation	ITF (e.g. Davis/ Fed Cup World Group ties)	Stadium Court (e.g. Davis/ Fed Cup World Group ties)
Total Area	34.77m x 17.07m	36.6m x 18.3m	40.23m x 20.11m
Run-off at back of court	5.48m	6.4m	8.23
Run-off at side of court to fence	3.05	3.66	4.57
Minimum distance between two courts (unfenced)	3.66	5.48	n/a
Recommended distance between two courts (unfenced)	4.27m	n/a	n/a

Playing lines

The width of all lines on a tennis court should be a minimum of 2.5cm in width and a maximum of 5cm, except the baseline which may be 10cm. Centre services lines and centre marks should be 5cm.

The following diagram provides a plan for tennis court line markings. All measurements are to the outside of the lines.

Figure 3: Line markings for a standard tennis court



Court run-off

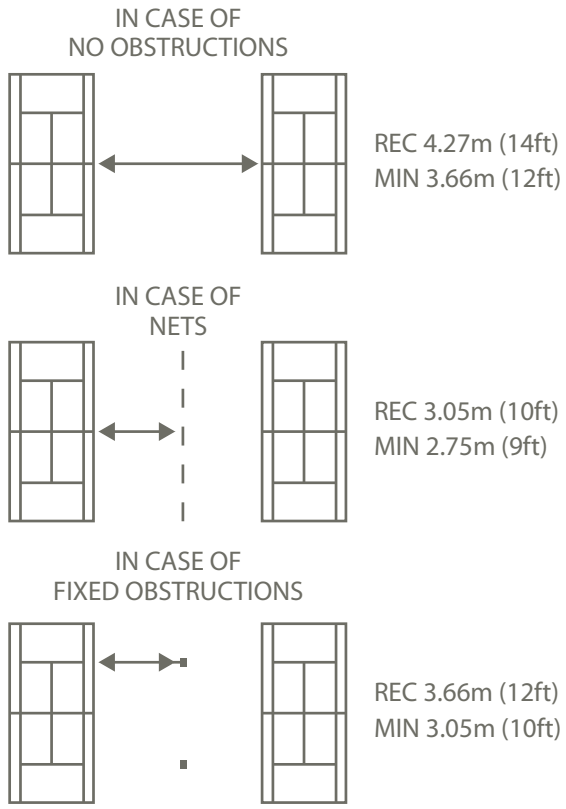
Suggested minimum dimensions and run-off areas between the Principal Playing Area (PPA) of a tennis court for club and recreational standard play is; 5.48m from each baseline to fence; 3.05m from sidelines to fence and 3.66m between courts that do not have a fence or other obstruction between them. For some tournaments different court run-off requirements are needed. Categories of tournament court playing areas are presented in table 2.

The following diagram provides a guideline for minimum and recommended court run-off areas between courts and other obstructions for both recreational and club play.

Please note: in the case that floodlight poles are installed in-line and between net posts, a minimum distance of 3.66m between courts is recommended.

Facility development considerations

Figure 4: Tennis court run-off



Orientation

The optimum tennis court orientation is north-south. This is preferred to minimise the effects of sun glare.

In some instances, depending on individual site conditions, achieving this orientation may not be achievable. If this is the case, consideration should be given to sun rotation behind buildings, wind conditions and/or the provision of additional shade trees. If possible, orientating courts north-south and east-west at the one venue should be avoided, particularly if courts run behind each other, creating a visual annoyance during play.

Facility footprint guidelines

Each tennis facility site provides its own unique opportunities for design and layout based on site conditions and available land area. As a guide, the following table provides an estimate of land area requirements to develop a facility that includes court enclosures, spectator areas, clubhouse and car parking.

Table 3: Tennis facility land area guide

Number of courts	Estimated land area required for court enclosures	Estimated total land area required for full site development
2 courts	0.13 ha	0.32 ha
4 courts	0.25 ha	1.05 ha
6 courts	0.38 ha	1.20 ha
8 courts	0.51 ha	1.50 ha
12 courts	0.76 ha	2.20 ha
16 courts	1.02 ha	3.00 ha

Facility expansion

Where possible, consider future growth when planning and designing your court and facility layout. A design that can accommodate future growth will be more cost effective and will avoid the need to undertake major unnecessary development in the short to medium-term.

Please contact your Member Association or Tennis Australia for further design guidelines and guidance.

Base construction

The most important factor in tennis court development is undoubtedly its base and foundations. Even though court bases are generally not visible, they will have the most impact on the ultimate cost, playability and longevity of your tennis court.

Establishing the correct foundations and base construction specific to your site is essential to ensure the integrity and stability of what is built on top. Poor foundations and base construction will inevitably lead to court damage, surface imperfections, surface life reduction and ultimately large and often unnecessary rectification costs.

Selection of base and foundation materials will also influence your court surface selection, as not all surfaces can be laid on all bases.

Facility development considerations

The following typical base construction techniques are currently being used to support hard court and synthetic surfaces:

- reinforced concrete
- asphalt
- compacted earth.

An overview of each base construction method follows.

Natural grass, clay and red porous court construction requires more specialised and layered base preparation and do not require concrete, asphalt or compacted earth bases to be constructed. More details on natural grass, clay and red porous courts are provided under court surface types on pages 18-19.

Concrete bases

A **reinforced concrete slab** is a common form of base, consisting of a layer of concrete reinforced with steel mesh. The thickness of the slab will be determined by site specific conditions and technical specifications.

A well-constructed concrete base (built to appropriate specification and site conditions) is likely to provide the greatest longevity of all base types. Concrete bases are generally expensive to construct in comparison with asphalt and crushed rock materials and are the most costly to rectify if not built correctly.

Concrete bases are generally acceptable for the application of asphalt and acrylic surfaces, as well as sand filled artificial grass and synthetic clay.

Additional care through the concrete curing and preparation process must be taken if applying an acrylic surface to a concrete base. Most acrylic surface manufacturers publish technical information on court base construction suitable for their individual products.

Additional technical information on concrete construction and curing processes is available via the Tennis QLD Technical Manual for the Design, Construction and Maintenance of Tennis Facilities. The manual is available via ***tennis.com.au/qld/clubs/facilities/technical-manual.***

Technical Tip

It is preferable that acrylic surfaces are not applied to porous asphalt surfaces, primarily due to the incompatibility of acrylic surface application techniques and porous asphalt materials.

Asphalt bases

An asphalt base consists of at least two elements.

1. A **structural layer** (termed the 'granular layer'), which consists of a base of crushed rock. This layer provides the strength of the structure.
2. An **asphalt layer** covers the base of crushed rock. It provides a smooth surface for sound ball bounce, as well as acting as a moisture barrier to protect the structural layer from erosion and water penetration.

Asphalt bases are generally acceptable for the application of acrylic surfaces (cushioned and non-cushioned), as well as sand filled artificial grass and synthetic clay surfaces.

Important note

The introduction of porous asphalt has been seen in many surface conversion projects, particularly where red porous courts are being converted to synthetic surfaces. Porous asphalt is often used as a base layer (over red porous courts) in conjunction with needle punched synthetic carpets. This method allows for vertical draining, rather than reconstructing court bases to provide necessary drainage falls.

This method of reconstruction is only effective where both the underlying existing drainage system is functioning properly and the existing scoria pavement is sound enough to support the laying of porous asphalt.

Compacted earth bases

Compacted earth bases have traditionally been used in conjunction with the laying of sand filled artificial grass and synthetic clay surfaces. In some cases, the flexibility of the base has benefits where small amounts of ground movement occur.

Whilst a cost effective practice the technique can reflect any significant failure in, or movement of, the base construction through the playing surface by creating an uneven surface.

Use and application of compacted earth bases should be dependent on the full investigation of ground, soil and drainage conditions.

Compacted based are not suitable for acrylic surface application.

Base construction considerations

Some important considerations in all forms of base construction include the following.

- The investigation of soil, ground and drainage conditions within and around the site area should be conducted to inform preferred base construction method.
- Base construction design should be developed and guided by court surface choice (refer to Table 4).
- Install a moisture barrier or waterproofing membrane underneath concrete pavements.
- Ensure court fall ratios follow pavement specifications and are appropriate for the court surface and site drainage requirements.
- Ensure sub-surface and/or perimeter drainage is included in any base construction design.
- All bases will require ongoing maintenance dependent upon site specific conditions and expected design life.

The following table provides a comparison of the suitability of base construction methods with the range of suitable court surfaces.

Natural grass, clay and red porous surfaces require different court development and profiles than presented in this section. Please contact Tennis Australia for specific design advice on these surfaces.

Important note

In recent years Tennis Australia and Member Associations have acknowledged a range of issues that have raised some concern throughout the industry. In particular, some court conversion projects have had synthetic surfaces laid directly over existing red porous (or similar) surfaces after no or only minor rectification or stabilisation works.

While decision making and cost effective projects are both important to all court development projects, Tennis Australia recommends that all new courts provide appropriately designed and engineered base constructions, regardless of the surface provided. Qualified geotechnical and civil engineers may attract Tennis Australia funding.

Table 4: Court surface and base construction matrix

Court surface	Base Construction Method			
	Asphalt	Porous asphalt	Concrete	Compacted earth
Asphalt	✓	✓	✓	-
Cushioned acrylic	✓	×	✓	×
Non-cushioned acrylic	✓	×	✓	×
Sand filled artificial grass	✓	✓	✓	-
Synthetic clay	✓	✓	✓	-

✓ refers to generally appropriate base construction method

× refers to inappropriate base construction method

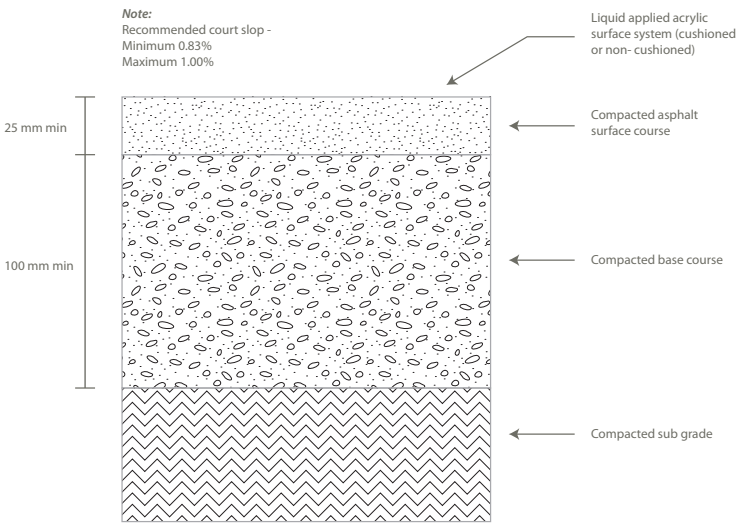
\- refers to an acceptable method if site, ground and drainage conditions support this type of base construction

Figure 5: Generic tennis court cross section

The following diagram provides a generic cross-section of the typical construction layers of a tennis court, including sub-grade, base construction/pavement and court surface layers.

Layers will differ depending on construction method, drainage requirements and surface selection.

Not to Scale



Court surface types

Tennis Australia classifies court surfaces according to type rather than brand. There are four surface type categories:

1. acrylic hard court
2. clay/red porous
3. natural grass
4. other variations; including Sand Filled Artificial Grass (SFAG), carpet and synthetic clay.

For each surface type category there are multiple brands within the tennis and leisure industry.

Surface and playing characteristics

It is difficult to generalise about the playing characteristics of surfaces, due to the number of variations available in the market place. Playing characteristics vary according to type of product, age, condition, original construction method etc.

Table 5 presented in the following pages provides a summary of typical surface characteristics for a range of surface types available in Australia.

The International Tennis Federation (ITF) also classifies specific surfaces into various pace categories. The ITF website – ***www.itftennis.com*** provides up-to-date information on individual surface products and their pace rating.

The lifespan of all surfaces referred to in this Guide are influenced by levels of usage, maintenance regimes and weather conditions. Budgeting for their ongoing maintenance and eventual rejuvenation and/or replacement will be essential for all surface related projects. Refer to ***tennis.com.au*** for examples of lifecycle costs associated with court surface maintenance and replacement.

Acrylic hard courts

Generally in Australia there are three types of acrylic surfacing systems:

1. non-cushioned
2. liquid applied cushion
3. mat laid cushion.

Non-cushioned surfaces

Acrylic coated tennis court surfaces are popular in Australia and can be either non-cushioned or cushioned. Acrylic courts are suited to all levels of coaching, training, social and competition play.

An acrylic surfaced tennis court is basically an application of multiple layers of acrylic material (e.g. resin, paint, etc) on a base surface, commonly concrete or asphalt.

There is a wide selection of proprietary acrylic surface systems available in Australia. In very basic terms an acrylic surface comprises of applying an initial (filler) coat(s) to the base surface then applying the final coloured coats. The composition and application method of the acrylic material have a direct influence on the playing characteristics of the court.

The performance, aesthetics and longevity of acrylic surfaces are dependent on conducting an efficient maintenance regime. The single most important factor in prolonging the useful life of an acrylic tennis court surface is keeping them clean.

Budget provision should be made for recoating acrylic surfaces every seven to 10 years (depending on use, maintenance and surface quality) at a cost of approximately 80% for the original acrylic surface cost (just the surface, not the whole of court costs).

Cushioned acrylic surfaces

Both liquid applied and mat laid cushioned acrylic surfaces provide the same acrylic surface layers as non-cushioned surfaces. The key differences in cushioned courts are the layers of cushioned properties built into the construction process. Cushioned courts are more likely to spin and also provide a level of comfort for players underfoot.

Liquid applied cushioning is provided in layers spread across the court area until the desired thickness is achieved. This method has the advantage of being able to adjust cushioning thickness based on preference and budget constraints.

Mat laid cushioning systems differ in that the cushion layer is delivered in pre manufactured rolls of a predetermined thickness. Rolls are laid out, placed in position and then adhered to the base.

Generally acrylic surfaces, particularly cushioned surfaces, are more expensive to construct than other surfaces, predominately due to more intensive base construction and drainage requirements, and the cost of cushioning materials.

Acrylic surfaces should only be applied to concrete or asphalt bases (that have undergone appropriate curing time, cleaning and have been specifically designed and built for cushioned acrylic surfaces) and only be applied by experienced professionals approved by the product manufacturer.

Clay/red porous

Across Australia clay courts are known by differing names. In Victoria clay courts are commonly referred to as **red porous** or **en-tout-cas** courts, however, these courts differ from European style clay surfaces.

Clay courts are a preferred athlete development surface of Tennis Australia.

Clay is a generic term used to describe a playing surface that has a clay-like natural material look and feel about it. The playing surface is made from a layer of material with cohesive properties, not unlike slightly moist natural clay; it can be a combination of natural and/or synthetic materials.

For details of supported surfaces see the National Court Rebate Scheme guidelines are available at ***tennis.com.au/clubs/funding.***

Clay surfaces are always permeable allowing surface water to drain vertically down through the court, facilitating play soon after rain, although should still incorporate a slight slope to assist with drainage.

Prolonged drought conditions and the availability of sustainable water resources have impacted the provision, retention and maintenance of clay and red porous courts in Australia. To ensure the longevity of courts, it is essential that an ongoing maintenance regime (including regular watering) is adhered to.

Several examples in clay court building have highlighted a variety of new, more environmentally sustainable techniques that will assist clubs to retain and/or rebuild their clay or red porous courts.

Natural grass

Natural grass courts remain prominent across Australia and popular on the local and regional tournament calendar. They also remain a preferred athlete development surface of Tennis Australia.

A variety of grass species are available and suitable for tennis court surfaces, although the success of certain species will be dependent on weather conditions.

The quality and retention of natural grass courts is heavily dependent on climatic and environmental conditions, in particular, access to a sustainable water source. The use of grass courts is generally limited to summer season play due to climatic conditions affecting grass growth and usage must be managed to protect the integrity of the surface.

Much like clay and red porous courts, many natural grass courts are slowly being converted to alternative less water and maintenance intensive surfaces that can also provide for year-round and floodlit use.

Sand Filled Artificial Grass

Over recent years there has been an increasing trend of installing artificial grass court surfaces, more correctly referred to as Sand Filled Artificial Grass (SFAG).

An SFAG surface is basically a tufted synthetic carpet laid on a base usually constructed of concrete, asphalt or crushed rock. The carpet is then filled with sand to fill the space between the carpet fibres to within about 2mm of the top of the pile. The purpose of the sand is to hold the carpet in place, to provide a firm playing surface and to facilitate the drainage of surface water.

SFAG courts are a cost effective court surface that provide soft underfoot properties. If laid correctly, their efficient drainage and ability to be played on when damp make them an option for commercial centres and coaches.

Their playability is dependent on an effective maintenance regime, in particular the regular grooming of the surface and the rejuvenation of sand particles.

Budget provision should be made for resurfacing SFAG surfaces every 8 to 12 years (depending on use, maintenance and manufacturer warranties).

Synthetic clay

Synthetic clay is the collective term given to a range of products available in the market place.

Synthetic clay surfaces are SFAG carpets that are overfilled (by 1mm to 2mm) with a coloured sand product to simulate the appearance of a clay or red porous tennis court. The overfilling of the carpet requires sand to be brushed from lines on a regular basis, much like clay or red porous courts.

The surface does not require watering and provides similar cushioning and drainage properties as SFAG courts.

Synthetic clay courts are generally a more expensive product than SFAG surfaces, placing them in the middle range of surface development costs.

Their playing characteristics vary significantly between products as well as on wet or dry conditions. Their playability is dependent on an effective maintenance regime, in particular the regular maintenance and management of sand particles.

Budget provision should be made for resurfacing synthetic clay surfaces every 8 to 12 years (depending on use, maintenance and manufacturer warranties).

Contractors and suppliers

There are many different court surface products manufactured in, and supplied to, the Australian market. Contact Tennis Australia or your Member Association for info on finding suppliers, manufacturers and contractors known to operate within Australia or your State.

Additionally, the Sports Contractors Association can provide a listing of members that service the national and state based tennis industries via their website at ***www.sportscontractors.com.au.***

The following table provides a summary of characteristics of various court surfaces. The performance, aesthetics and longevity of surfaces are dependent on conducting an appropriate maintenance regime. Indicative costings for various court surfaces are available via ***tennis.com.au.***

Table 5: Comparison of court surface characteristics

Court surface	Speed of court	Height of bounce	Trueness of bounce	Topspin	Slice	Footing – sliding/firm	Traction – Slip/non-slip	Shock absorption
Cushioned acrylic	Variable	Medium – high	Consistent	Yes	Yes	Firm	Non-slip	Medium
Non-cushioned acrylic	Variable	Medium – high	Consistent	Yes	Yes	Firm	Non-slip	Medium-hard
Clay	Slow	Medium – high	Almost consistent	Yes	Yes	Sliding	Non-slip	Soft
Natural grass	Fast	Low	Variable	Little	Yes	Firm with partial slide	Slip	Soft
Red porous	Slow	Medium	Almost consistent	Yes	Yes	Sliding	Non-slip	Soft
SFAG	Medium – fast	Medium	Consistent	Little	Yes	Firm with partial slide	Mainly non-slip	Medium
Synthetic clay	Medium – fast	Medium	Consistent	Little	Yes	Firm with partial slide	Mainly non-slip	Medium

Source: Tennis Australia

Facility development considerations

Court surface selection

Selecting a surface or surfaces that meet all member, player and stakeholder needs and objectives is difficult. However, engaging them and other users in the selection and decision making process will help to make a well researched choice.

As it is difficult to generalise about the playing characteristics of all court surfaces available, the best way to inform yourself and your members of different surfaces is to play on them.

Other considerations that should be taken into account when selecting the most appropriate surface for your club include:

- member and user preferences
- intended use and level of play
- future club directions
- coaching requirements
- tournament requirements
- any requirement for similar surfaces or reasons to provide a mix of different surfaces
- site conditions
- cost of installation and replacement
- surface lifespan and warranty
- maintenance obligations and cost
- access to funding opportunities
- affordability and value for money
- environmental impacts
- potential for vandalism.

Appendix 1 provides a sample court surface assessment tool for clubs to adapt and use in their surface selection process.

Multi-use courts

Multi-purpose courts are a practical solution to supporting a range of sports, including tennis, and are more commonly used in school and recreation reserve environments. However, tennis facilities with a significant number of courts may also choose to have some muti-use courts to cater for wider community needs.

In all multi-use environments, some compromise will be required by all sports in surface and infrastructure provision, as it is difficult for one single surface to meet the different range of needs of all sports to be played on it.

Multi-use applications that include tennis courts are commonly provided with netball (hard court acrylic surfaces), hockey (SFAG surfaces) or soccer (acrylic and sand filled/rubber crumbed surfaces). Various products are available on the domestic market to suit multiple sports.

Some key considerations in providing multi-purpose surfaces and facilities that cater for tennis include:

- use more dominant line marking colours to suit the main intended use. For example, white lines for the main user sport, yellow lines for the secondary user
- the appropriateness of sleeves and caps for relevant goal and tennis net posts or the use of roll-away nets and goals
- lighting requirements for tennis are different to other sports. Floodlighting design should meet minimum Australian Standards for all intended users. Ensure one lighting system serves the variety of users
- court dimensions and run-off areas vary between sports
- the use of shock pads underneath hockey playing surfaces is not ideal for tennis ball bounce. A compromise position may be using a thinner shock pad than is ideal for hockey
- carpet pile length for SFAG surfaces should ensure they provide a playable length for tennis (generally not longer than 19mm)
- third-generation surfaces commonly used on soccer pitches are not suitable for tennis due to their longer pile heights of 60mm or more.

MLC Tennis Hot Shots Courts

MLC Tennis Hot Shots is the fun way for kids to learn how to play tennis. Smaller courts, nets, racquets and low-compression balls make learning easy and give younger players the chance to serve, rally and score right from the first time they play.

MLC Tennis Hot Shots courts can be provided using existing tennis courts, be configured in schools or public open space or be developed as dedicated courts within the club/centre environment.

MLC Tennis Hot Shot court dimensions are adapted from the ITF Play and Stay model (which is the cornerstone for MLC Tennis Hot Shots) where courts are generally 11m x 5.5m or more accurately 36ft x 18ft.

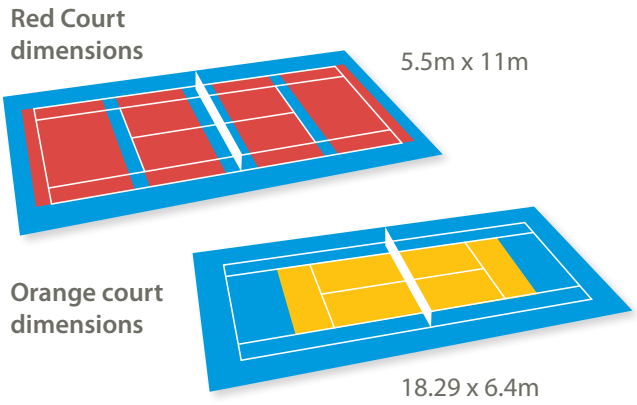
If adapting an existing full-size tennis court for MLC Tennis Hot Shots, the 10.97m length from doubles line to doubles line and the 5.485m width from service line to baseline generally meet MLC Tennis Hot Shots court requirements. Refer to Figure 6 on page 22.

It is recommended that venues seeking to develop permanent MLC Tennis Hot Shots courts consider blended lines on existing courts or permanent line markings when resurfacing.

Facility development considerations

Figure 6: MLC Tennis Hot Shots court area overlayed on a full-size tennis court

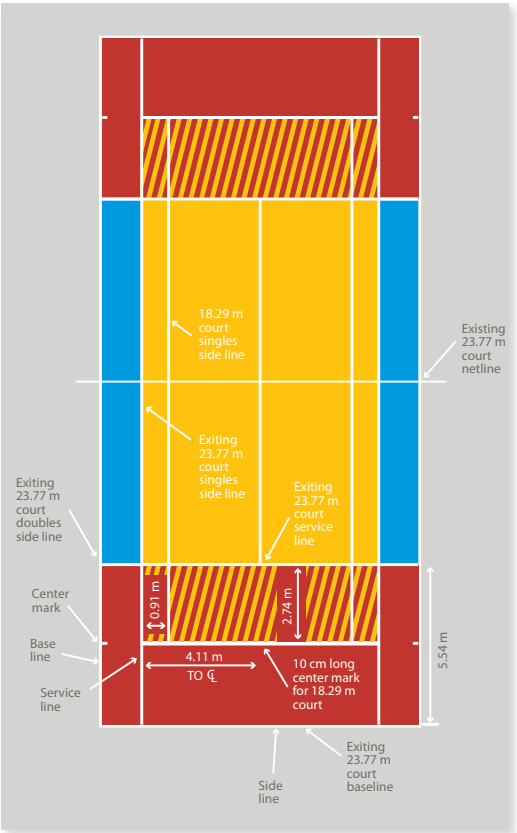
Further information on the ITF Play and Stay model or Under 10's can be accessed via ***tennisplayandstay.com.***



Blended Lines for MLC Tennis Hot Shots Courts

Blended Lines are permanent red court and orange court tennis lines on an existing full size (78') tennis court. Blended lines are always painted using the same colour family as the playing surface - in a lighter or darker shade, depending on personal preference - and are 4cm in width. Blended lines never intersect full size tennis court lines, as they stop 7.5cms away from all full size tennis court lines.

Figure 7: Full sized tennis court with 2 x red court and 1 x orange court blended line markings.



Two things to remember when painting permanent Hot Shots Lines on existing court:

1. The blended lines can NOT be white. They should be in the same colour family as the court itself.
2. The blended lines must stop 7.5cms before the white lines. They may not run up to, or over the white.

Recommended Safety Zones

Please remember when lining courts to allow for the recommended clearance for safe play!

- Red Courts – 3m behind the baseline and 2.5m from the sideline.
- Orange Courts – 4.5m behind the baseline and 3m from the sideline.

Do not put players back to back on adjacent courts if there is not enough room to play safely. Please refer to the MLCTHS Courts Development Guide for more information on dedicated MLCTHS courts and blended line markings.

Floodlighting

Floodlighting is an essential element to any tennis facility. Lighting has the ability to maximise court use, create diversity in club/centre activities and allow your club/centre to keep pace with the latest tennis participation trends.

There are a number of considerations and conflicting interests that should be addressed through every floodlighting installation. Planning and consultation discussions are encouraged with the following groups throughout the development of your floodlight project:

- club/centre members regarding potential uses, needs and costs
- your local council regarding planning requirements, permission and impact on the local environment
- electricity suppliers regarding existing service capabilities and potential upgrades required
- qualified persons regarding lighting design, installation options and equipment selection
- other tennis clubs/centres by visiting them to gain an appreciation of lighting demands and Lux levels
- Member Association Technical Advisors to seek specialist lighting design and installation advice
- other sports to determine their lighting requirements if it's a multi-use court or facility.

Technical Tip

Generally, planning permission is required for the installation of new floodlights. Early in your planning, seek advice from your local council regarding your obligations, restrictions and the information the council requires for a relevant planning application. This may include the provision of proposed lighting designs, engineered drawings, lighting spill diagrams and/or an environmental impact study. Light pole installations (over 8m in height) may also require a building permit, irrespective of whether planning permission is also required.

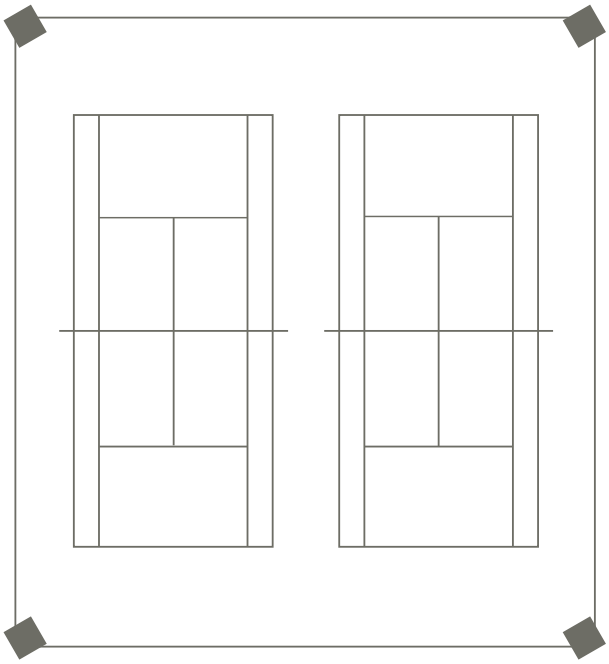
Lighting configurations

Tennis court lighting systems generally consist of two main types. High-tower corner lighting and low-level side lighting.

Corner lighting systems are typically used for double court configurations, with high-tower lighting masts located just outside each corner of the court enclosure. Towers are generally no higher than 15m in height.

Figure 8 provides a standard 2-court light pole configuration for high tower corner lighting.

Figure 8: Standard 2 court corner lighting design

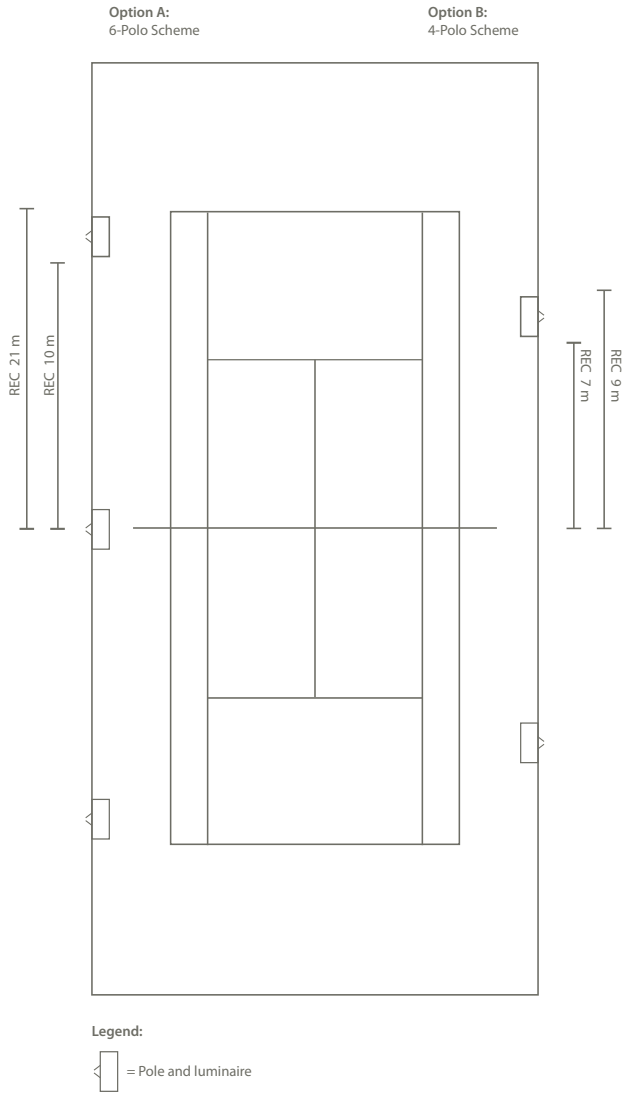


Both corner and side-lighting systems can and should be designed and installed to meet Australian Standards AS2560 Guide to Sports Lighting and AS2560.1 - Part 1 General Principles and AS2560.2.1 – Part 2.1 Lighting for Outdoor Tennis for design luminaries, z levels, uniformity and pole heights.

Recent lighting trends have seen an increase in the number of side-lighting configurations. A vast range of pole configurations exist for side-lighting systems, but they typically include four to six lights and poles per court, ranging from 8m to 12m in height.

Figure 9 provides a typical four and six pole floodlighting configuration.

Figure 9: Four and six pole side lighting design options



Court lighting levels

While meeting the standard Lux levels are important in lighting installations, the consistency of light is critical and is measured by uniformity. Where uniformity is poor, the eye struggles to follow the flight of the ball and predict its speed.

Tennis court lighting levels should be developed based on the intended standard of play. The following table provides an extract from AS2560.2.1 regarding recommended lighting levels suitable for the various levels of play.

Table 6: Recommended maintained horizontal illuminance values (from AS2560.2.1)

Level of play	Minimum Horizontal Illuminance	
	PPA (Lux)	TPA (Lux)
Recreational	250	150
Club competition	350	250
International & National	1000	800

PPA – refers to the Principle Playing Area
TPA – refers to the Total Playing Area

Considerations of lighting provision

A range of design, equipment and fitting selection and installation options and alternatives should be considered in your floodlighting project.

- Assess the adequacy of your existing power supply to accommodate new or more court lighting. Budgeting for power upgrades can significantly add to your project costs.
- Future expansion. If you are not installing lights on all courts, consider making an allowance for the wiring and power supply for other courts if you wish to add more lights at a later date.
- Geotechnical assessment of ground conditions for pole installations and footings, and certification of lighting poles by a structural engineer may be required.
- Risk management issues will be exacerbated by placing lighting poles within court enclosures. This installation methodology should be carefully evaluated through floodlight system design.
- Providing access to a secure light control system external to clubrooms may help to maximise their use and minimise facility management requirements.
- Various coin, key and pin coded operated mechanisms are available to ensure a user pays system is available.
- Provide adequate safety lighting to exit courts when lights are switched off.
- Consider how the power cost and replacement of globes will be paid for and undertaken.

Fencing

Fencing performs a number of functions, all of which should be considered in your facility design. Key functions include:

- the retaining of balls on court
- dividing courts
- providing access to courts
- safety and security
- windbreak support
- signage display.

Whilst fencing provides basic functionality to the tennis court, it can also be provided in a variety of ways to suit your budget, the intended use of your facility, the local environment and site specific conditions.

Important considerations include:

- top and bottom rails to provide longevity, stability and maintenance, safety and visual enhancement
- visual amenity can also be improved by using black poles and mesh (rather than galvanised finishing) and also provides good background contrast to ball colour
- reduced side fencing heights to enhance spectator viewing
- ensuring gates are wide enough for accessible entry and for maintenance equipment
- proximity of trees and overhanging branches
- windbreak planting in adjacent areas
- wind and sight screening and signage loads are incorporated into structural design
- future court expansion
- where practical, truncate fence corners, allowing for shade structures and increased viewing areas.

Australian Standard AS1725.2

Australian Standard AS1725.2 Tennis Court Fencing (2010) – Commercial recommends standard tennis court enclosure fence heights of 3.0m or 3.6m for club and public court environments.

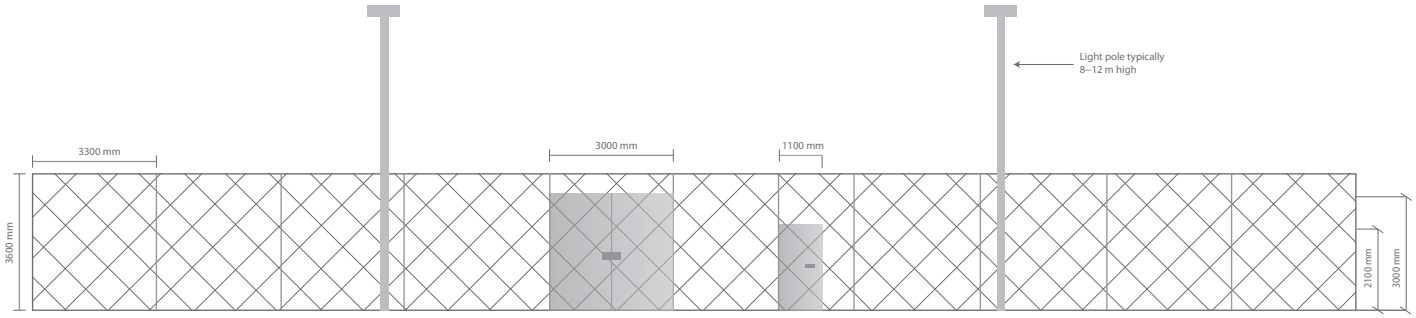
Tennis Australia recommends that a preferred height of 3.6m be met in club environments and elsewhere wherever possible.

Technical Tip

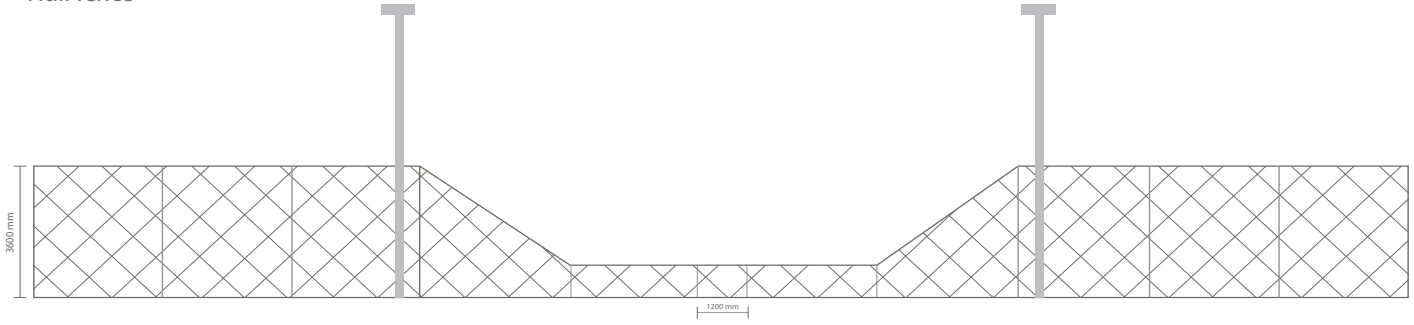
Reduced side fencing heights are fast becoming a trend in new facility design and development, particularly where club and court security is provided by existing boundary fencing. Figure 10 provides an example of a typical alternative side fencing profile that enhances spectator viewing and promotes visual appeal. Tennis court fencing should be designed and built considering local conditions. Where relevant, fencing should be designed to support additional weight loads that wind screening and signage may require. This should be a particular consideration in windy areas.

Figure 10: Alternative side fencing profile

Full fence



Half fence



Facility development considerations

Court equipment and accessories

The type and use of court equipment and accessories will be dependent on the type of facility you operate, the way in which it is managed and your choice of court surface.

The most common need for court equipment is for **net posts, nets and centre straps**. These can make a significant difference to the visual appeal of your courts, functionality of play and use and safety to players.

The ITF's Rules of Tennis 2009 specifies the requirements for net posts. In the club environment, two important net post considerations include:

1. The selection of **internal or non-obtrusive winding mechanisms**. Winders that protrude present a safety hazard for players rounding the net post, particularly where they are at head height for children.
2. The **use of sleeves** in net post installation will allow for post replacement without having to dig posts out of footings. This may prove helpful and more cost effective where concrete or asphalt base constructions are used or in multi-purpose applications.

Grounds and surrounds

The management of grounds and surrounds, as well as court maintenance, should be considered in your project. Do not underestimate the power of visual appeal and atmosphere on current and prospective members and in creating vibrant tennis facilities and welcoming places to play.

Consider the following key items in your planning.

- Create a strong entry to your venue and your clubhouse. Ensure connectivity between buildings and playing areas using thoroughfares between court enclosures (taking into account all standards for accessibility).
- Cater for spectators and court viewing, through the provision of covered areas, seats, accessible toilets and access to food and beverages.
- Landscape areas that have limited function but opportunity for visual appeal with manageable and easy to maintain vegetation or other materials and products.
- Environmental benefits and potential for inclusion of water reuse and recycling initiatives.
- Ensure car parking is adequate to meet your local council's planning scheme guidelines, as well as cater for expected volumes. Parking within close proximity to courts and clubhouse is highly recommended.
- Provide an outdoor area for social gathering and functions and/or an area for children to play safely.
- Venue security and potential for vandalism and graffiti.

Clubhouses

A clubhouse plays a vital role within the facility. The clubhouse is often the visible face of the club and has the ability to create a lasting impression. It is a major factor in attracting and retaining members and participants.

Player, participant and community expectations are continually increasing, as are building regulations and requirements. Keeping pace with expectations and change can be challenging for clubs/centres in providing quality and welcoming facilities that meet community needs.

The size, location and layout of your clubhouse should be commensurate with the number of courts provided, the intended use of the facility and the preferred management model of your club/centre.

Clubhouses that do not meet member and usage needs may restrict the viability of the facility, and those that are too large become cumbersome to manage and maintain.

Club members, users, your local council, local community groups and stakeholders should all be consulted to help determine the most appropriate clubhouse facility for your club/centre.

If contemplating clubhouse refurbishment, improvement or replacement, the principles and processes highlighted in this Guide will assist you to achieve your goals.

Facility development considerations

Clubhouse design considerations

Professional building, project management and architectural expertise should be engaged if you are considering a clubhouse improvement or development project. The following should be given specific consideration through the design phase of your project.

- Conduct a building condition audit to understand what areas of your existing clubhouse may be retained and what areas must be changed.
- Any change to an existing building structure must accommodate and promote the current Standards for Accessibility and should include Universal Design and Environmentally Sustainable Design principles.
- Consider future court, facility and clubhouse expansion plans in your design.
- Incorporation of ESD practices including water recycling and reuse, energy efficient materials and products, use of natural light and insulation, building orientation etc.
- A central location close to courts and car parking is preferable, with views across as many courts and playing areas as possible.
- Adequate storage areas for court, coaching and maintenance equipment. Storage areas away from the clubhouse may be required where fuel operated equipment or chemicals are to be stored.
- Provision of an office if you intend to provide on-site management, tournaments and events.
- Kiosk, canteen or café that provides both an internal and external servery, along with plenty of storage space.
- Retail display, storage areas and point of sale system for pro-shops.
- Open area large enough to cater for intended number of players and members. Providing this area as a flexible space may increase your ability to use it for a range of other tennis and non-tennis related activities.
- Opportunities for shared and/or community use.
- Toilets, showers and change rooms that meet Building Code requirements.
- Adequate heating and cooling to maintain comfort levels.
- Shade and outdoor spaces to cater for family friendly activity.

The environment

State Governments and a range of Member Associations across Australia have produced guidelines to assist sports clubs and facility operators to be more aware of environmental impacts in the planning and management of their facilities. In particular, guidelines are designed to assist clubs and operators to work towards being more environmentally sustainable in relation to water and energy use and waste management.

All levels of Government encourage the inclusion of ESD elements in facility related projects. Environmental sustainability should be considered throughout all phases of facility development. Alternative environmentally friendly options are often available in many areas of design, operation and management of your facility.

We all play a role in environmental management and in achieving environmental sustainability and efficiency. Court surface choice, maintenance practices, water reuse, plumbing fittings and fixtures, floodlight use and design, waste recycling, building materials, mulching gardens etc all have an impact on the environment.

Tennis Victoria provides an Environmentally Friendly Tennis Clubs Guideline available at ***tennis.com.au/vic*** that may assist you in incorporating initiatives in your next club/centre project.

Funding for your facility project may come from a number of different sources, including the tennis and local community, government and/or private sector.

Funding programs, guidelines and levels change regularly, so research your options and opportunities for each project you undertake.

Project funding

National Court Rebate Scheme

Tennis Australia's national funding program aimed at stimulating court growth and improving facilities around the country.

Affiliated clubs are eligible to submit applications via their Member Association for funding to develop or upgrade court surfaces and associated infrastructure, including base preparation and development, lighting, resurfacing, fencing, water saving initiatives and ancillary items (please confirm with your Member Association what surfaces will be funded under this scheme).

Guidelines and application forms are available via ***tennis.com.au.***

Facility Loan Scheme

The Tennis Australia Facility Loan Scheme is available to financially assist affiliated clubs, centres and associations to upgrade, replace or improve their tennis facilities by providing low interest loans and more recently, to assist in supporting the appointment of a club/centre manager or administrator.

A club, centre or association will often embark on a project utilising grant monies from local and/or state government, as well as their own funds. The Tennis Australia Facility Loan Scheme is designed to assist with shortfalls that applicants may have in project funding after other funding avenues have been determined. Loans of up to $80,000 are available.

Guidelines and application forms are available via ***tennis.com.au.***

Australian Sports Foundation

The Australian Sports Foundation (ASF) was established by the Australian Government to assist community organisations raise funds for the development of Australian sport.

The Foundation is supported by the Australian Sports Commission and provides sporting clubs, sporting organisations, schools, local councils and community groups around Australia the opportunity to offer tax deductible donations for potential donors towards facility development projects. More information is available via ***www.asf.org.au.***

State/Territory Government

State Government's across Australia provide funding assistance to support local community clubs and organisations through a range of grant programs.

Community facility funding programs generally contribute to the provision of high quality and accessible community sport and recreation facilities across each state. Funding programs, timelines and specific criteria vary from state to state, so contact your State Government sport and recreation department for more detailed information.

Project funding

Local Government

Availability of funding varies between local councils and it often requires a contribution from the applicant (i.e. your club or centre), either a financial commitment or in-kind contribution.

Local government commitment is usually required to attain state government and/or Tennis Australia and Member Association funding and project support.

Your local council may also be able to provide you with other local funding sources, so they are often a good place to start.

Local community

Community funding can be sourced through a range of different avenues, including fundraising activities, through volunteer labour (supervised by qualified contractors) and by donations and project sponsorship activities.

Don't underestimate the power of your local community to support your project. It is likely that they may want to see it succeed just as much as you do.

Education sector

If your facility is located within or near a school facility, opportunities for joint funding through your State's school and education department may be available. Funding opportunities are likely to be treated on a case-by-case basis and consultation with school personnel would be essential.

Private sector

Private interests such as local businesses, centre operators, coaches, developers, key users or major local employers operating within your local community may contribute financially or by providing in-kind services and materials towards your project. All levels of support will count towards getting your project up and running.

Other agencies and funding programs

Grants may also be available from time-to-time through government agencies and funding bodies. Organisations may include state and federal government departments, regional agencies, service providers (e.g. water and power) and ad-hoc community development programs.

Stay in touch with your Member Association, your local council and/or regional sports association/assembly for up to date information on available grant and funding programs from the philanthropic sector.

Further Resources and Information

Tennis Australia has a range of fact sheets and technical information that should be sourced throughout the various phases of your project. Information can be provided on the following topics and is available via ***tennis.com.au.***

- Court and enclosure dimensions.
- Court surfaces.
- Clubhouses.
- Floodlighting.
- Fencing.
- Foundations and bases.
- Funding.
- Maintenance and equipment.
- Management.
- Nets.
- Outside amenities.

Member Associations can also provide further information on the following topics:

- best practice guidelines for clubs/centres
- business plan and club development templates
- management and performance benchmarks
- local contact and supplier listings
- risk management guide for clubs.

The above information can be accessed via ***tennis.com.au*** or by contacting your relevant Member Association.

Key contacts

Please refer to the following Member Association contact details for more information about your state/territory.

Tennis ACT

PO Box 44, Dickson ACT 2602
T: +61 2 6160 7800
F: +61 2 6247 2029
W: tennis.com.au/act

Tennis NSW

PO Box 6204, Silverwater NSW 2127
T: +61 2 9024 7600
F: +61 2 9763 7655
W: tennis.com.au/nsw

Tennis NT

Unit 1, 90 Ross Smith Ave, Fannie Bay NT 0820
T: +61 8 8981 5609
F: +61 8 8981 5616
W: tennis.com.au/nt

Tennis QLD

PO Box 2366, Graceville, QLD, 4075
T: +61 7 3120 7900
F: +61 7 3120 7929
W: tennis.com.au/qld

Tennis SA

PO Box 43, North Adelaide SA 5006
T: +61 8 7224 8100
F: +61 8 8212 6518
W: tennis.com.au/sa

Tennis TAS

GPO Box 115, Hobart TAS 7001
T: +61 3 6108 8200
F: +61 3 6108 8215
W: tennis.com.au/tas

Tennis VIC

Locked Bag 6001, Richmond VIC 3121
T: +61 3 8420 8420
F: +61 3 8420 8499
W: tennis.com.au/vic

Tennis West

PO Box 116 Burswood WA 6100
T: +61 8 6462 8300
F: +61 8 9361 1500
W: tennis.com.au/wa

Glossary and Definitions

The following definitions are provided for generic terms referred to throughout the Guide.

Acrylic
Material used for surfacing courts that provides colour and texture in the court surface.

Base
The part of a court structure on which the playing surface is applied.

Business Plan (Club/Centre)
A formal statement of club/centre goals and an action plan for reaching those goals.

Capital replacement program
A statement of all the required tasks, responsibilities and costs that should be taken into consideration for the future replacement of infrastructure.

Clay
ITF: Unbound mineral aggregate.

TA: Tier 1 Italian Clay (Terre Davis), Har Tru and Raw Courts. See the TA website for further information. ***tennis.com.au/clubs***

Cushioned acrylic
Acrylic surface that includes cushioned properties.

Geotechnical report/engineer
A ground condition report prepared by an appropriately qualified engineer for a specific site. It reports such factors as soil type, compaction, moisture levels, and potential for ground movement and moisture level change. A Geotechnical Engineer is a specialist qualified to prepare a geotechnical report.

Greenfield site
An undeveloped site earmarked and suitable for future facility development.

Illuminance
The total amount of visible light illuminating a point on a surface from all directions above the surface. The standard unit for illumination is Lux.

Lifecycle cost
A comparison of not only the initial capital cost for specific facility elements, but an analysis of ongoing usage, maintenance and replacement costs.

Luminaire
The housing that contains a floodlight lamp. The term includes the lamp, reflector and the lens.

Member Association (MA)
Peak body responsible for tennis development and administration in each state and territory of Australia.

Principle Playing Area (PPA)
The area of the court bounded by the baselines and the doubles side lines.

Project manager
A suitably qualified expert who is engage by a client to oversee the design and construction phases of a project.

Pavement
A term used to describe an asphalt or concrete court base.

Pile/pile height
The fibre material that forms the playing surface in synthetic grass and synthetic clay courts. Fibres are available in a range of colours. Pile height refers to the length of the pile.

Red porous
Commonly referred to as en-tout-cas, red porous is the term given to clay courts that are generally found across metropolitan Melbourne in Victoria.

Schedule of use
A document that details the intended use and occupancy of a facility and is sometimes compared to the existing use of a facility.

SFAG
Sand filled artificial grass.

Standards Australia
Australia's peak non-government Standards organisation. It is charged by the Commonwealth Government to meet Australia's need for contemporary, internationally aligned Standards and related services.

Synthetic clay
Collective term applied to outdoor carpet products that provide similar playing properties of red porous or clay courts.

Synthetic grass
Collective term applied to outdoor carpet products used in tennis court and other sports facility surfacing.

Top and bottom rails
Horizontal rail supporting the chain mesh at the top and bottom of court enclosure fencing.

Total Playing Area (TPA)
The total court area including the principle playing area and the court surrounds to the edge of the court surfaces (usually all that is enclosed within the court enclosure fencing).

Uniformity
This is a measure of light on a tennis court. It is important as it measures the difference (and consistency) between the bright and dark areas.

Appendix 1 – Club assessment tool - court surface selection

The headers in each column are transferable based on club objectives and key selection criteria. Provided above is a sample matrix of what clubs would generally evaluate court surface choice against.

Court surface and product choices can be further refined and evaluated by adapting the 'court surface column' and using specific surfaces or products when you have decided on the type of surface your club may wish to install.

For each column, develop a scoring system from 1 to 5 (1 being least compatible with club objectives and 5 being most compatible) and score each surface within the matrix. The surface or surfaces with the greatest score(s) will be easily identifiable and your decision quantified against a set of agreed selection criteria.

A Court Surface Selection matrix tool developed in Microsoft Excel format is available to assist clubs in developing a similar model to what is presented in the above table. Please contact your Member Association for a copy.

Court surface	Usability/ functionality	Meets member needs	TA Player development surface	Maintenance obligations	Environmental sustainability	Capital costs	Replacement costs	Total score
Cushioned acrylic								
Non-cushioned acrylic								
Clay								
Natural grass								
Red porous								
SFAG								
Synthetic clay								

Appendix 2 – Case Studies

Bundoora Tennis Club (VIC)

"Hard work, but very rewarding" is how Bundoora Tennis Club's President, James Copes, described their facility development project. With a total project cost in excess of $240,000, 18 months of research, meetings, budgeting and tender evaluations has resulted in the Bundoora Tennis Club having two new Plexicushion courts, new baselines on four red porous courts, upgraded fencing and new floodlighting across four courts (providing the club with eight lit courts).

"We saw our courts and infrastructure slowly deteriorating and for years we weren't quite sure what we needed to do and how to do it," said Copes.

"It was evident from talking to our local council (Banyule City Council) and Tennis Victoria that without a plan or clear directions and objectives, we weren't going to develop into the future."

The first step for the club was to prepare a strategic plan that engaged with members to identify the key issues and shortfalls with the club's existing facilities. It also highlighted the areas where the club had not been successful previously in attracting funds and support to develop their facilities.

"Through the development of a strategic plan we identified that member preferences were different, but this also presented some different opportunities," said Copes.

"We believe the Plexicushion surface will help attract a good body of coaching pupils and provide a surface to assist with their future development."

"We were also aware of the need to satisfy our older member preferences and to expand the number and quality of our Victorian Pennant teams. By retaining our red porous courts and improving them, we could accommodate all the preferences."

The strategic plan became the catalyst for all future planning, and was the backbone to the development of successful partnerships with the Banyule City Council and other funding bodies. The Council contributed $60,000, Sport and Recreation Victoria $60,000 and Tennis Australia (via its court rebate scheme) $30,000 towards the project. The remainder of project funding was contributed by the club.

It was vital for the club to have early communication with its local council at the planning stage, prior to submitting funding proposals. It was also important to make sure that any planned works aligned with the Council's strategic plan and project priorities. This was successfully achieved with this project, as the Bundoora Tennis Club had clearly communicated to the Council what they were aiming for early on and together, grant submissions were written to obtain additional funding and support.

The club had a number of hurdles to overcome along the way, including tree root invasion and a lack of power supply for additional floodlighting. Having a dedicated and independent project manager helped the club through these issues with little impact on overall project budgets and timing.

Mr Copes believes that a project manager should be considered by every club undertaking a sizeable facility project.

"It helped us greatly in liaising with contractors and with the assessment of the various project tenders that were presented," said Copes.

Some further words of advice from the club looking back on their project planning include:

1. Do your own research and homework – it is amazing what you can learn.
2. Use your available resources and partners and work with them.
3. Get an independent project manager (Tennis Victoria can assist you in this area).
4. Communicate what you are doing to your members through all project phases.

One final thought from Bundoora Tennis Club's Vice-President, Matt Testolin, is to understand the timeline for construction and the impact it may have on your existing operations.

"Our courts were out of action for approximately 15 weeks during which time we hired courts from surrounding clubs and centres," said Testolin.

This may have an impact on your overall project budget and needs to be well communicated to your members."

Southport State High School (QLD)

After many years of planning, collaboration and hard work, the $555,990 Challenge Tennis Centre, new home to the long standing Labrador Tennis Club, was officially opened at Southport State High School. This was no small achievement for the Labrador Tennis Club as it marked the end of a long journey since their facilities were first resumed by State Government years earlier.

The Labrador Tennis Club was served with a compulsory acquisition order over their 2 court facility from the Queensland Main Roads Department in 2006. Although both the Club and the Gold Coast City Council received financial compensation for this acquisition, the club was understandably devastated and finding a new home proved to be a huge stumbling block due to the lack of available land in this well established part of the Gold Coast.

Appendix 2 – Case Studies

The Club identified the possibility of upgrading the 8 badly dilapidated tennis and multi-purpose courts at the nearby Southport State High School and engaged Tennis Queensland-Court Tech in March 2008 to investigate this option further. As these existing courts were in such poor condition they were underutilised even by the students and staff, however as Tennis Queensland Facility Manager, Michael Blomer describes the site did hold promise and "everyone agreed the opportunity this site presented not just for the Club, but also for the School and the wider community was worth investigating further".

The Queensland Government supported this idea through their Sport & Recreation Infrastructure Funding Grant Program that would see existing School facilities developed and made accessible to the general public outside of school hours. The Queensland Government had recognised many Councils' were struggling to find or purchase "green-field sites" in built-up areas for new sporting facilities and that many of their schools had facilities that could potentially be utilised by the public outside of school hours.

Tennis Queensland – Court Tech was officially appointed as the Project Manager and an application for funding was submitted to the Queensland Government's then Department of Sport and Recreation for the balance of the funds required. The proposed funding split for this $550,000 + GST project was approx. $270,000 by the Queensland Government, $170,000 by the Gold Coast City Council and $110,000 by the Labrador Tennis Club with an additional $24,000 from the Tennis Australia National Court Rebate Scheme.

After some initial setbacks, the project was completed within budget in late December 2010 with the Coach/Manager commencing their operations shortly thereafter. This first-class tennis facility consists of four Plexipave tennis courts, two Plexipave multipurpose courts, two synthetic grass courts and lighting upgrades. Sport Minister Mr. Phil Reeves was an honourable guest at the opening ceremony and his speech highlighted the collaboration and effort from the tennis stakeholders that resulted in a fantastic venue for not only the school but also the wider Gold Coast community. All stakeholders were extremely pleased with the results. The Coach/Manager's business is also going from strength to strength with continued growth in their coaching programs and an increasing number of fixture teams in local competitions based at this facility.

Some advice for similar projects planning facility upgrades include:

1. A key element of any successful application for funding programs is identifying how the facility is to be managed on completion. In this situation Tennis Queensland–Court Tech proposed a model whereby a Coach/Manager would be appointed by all stakeholders through an open tender process to manage the facility on a commercial basis, with the Labrador Tennis Club in place as the resident tennis club. The appointed Coach/Manager's annual access rights fee for these courts would be paid to the school and deposited into a facility maintenance account established specifically to ensure these courts could be kept in top condition for the remainder of their serviceable life. These funds would be used to cover such maintenance costs as resurfacing of the courts every 7-10 years, periodic servicing of the light fittings and fencing mesh replacement.
2. Always factor contingency costs into a project. This project had some unexpected earthworks problems and the cost of rectifying this situation consumed most of the construction contingency allowance set aside for any problems arising during construction. Due to Tennis Queensland–Court Tech allowing for contingency costs in their planning they were still able to complete this project within the available budget.
3. When deciding on a builder, don't just go for price. Tenders for this project were assessed against the stated criteria 50% price, 25% recent project experience, 25% products and warranties offered. This ensures product quality and can ultimately save money in the long run longer warranties.

The final piece of the puzzle to complete this facility is the Clubhouse. Plans have been developed and quotations obtained to allow funding applications to be lodged through a number of funding sources to allow this project to proceed in the near future.

Appendix 2 – Case Studies

Port Lincoln Tennis Association (SA)

Port Lincoln Tennis Association (PLTA) worked with Tennis SA and the City of Port Lincoln for a period of five years in an effort to secure funding and actualise their vision of upgrading their sub standard facilities. The PLTA committee with the dedicated leadership of their President, Julie Polkinghorne, was driven to implement a facility upgrade which could service their regional community for many years to come. Although this project took much time and dedication from the association, the results speak for themselves. Not only did the PLTA secure funding to upgrade its existing facilities but with the assistance of Tennis SA and the City of Port Lincoln it was able to acquire and redeveloped a second site, which means that PLTA now operates from two first class venues.

In 2009, PLTA was in a position where its facilities were aging and the courts were in an unsatisfactory playing condition. The PLTA played an integral role in the local community and set about building a partnership with Council that would ultimately benefit all stakeholders and align their strategic priorities of all stakeholders. Adam Renfrey, Tennis SA Community Manager, clarified this direction in 2009 stating, "We have taken the line that we see the upgrade, operation and ongoing maintenance of the association headquarters as a strategic partnership between Council, the Association and Tennis SA."

In 2010, the association's eight courts were upgraded with an overall project cost of $280,000. This project was funded by the City of Port Lincoln, Tennis Australia (National Court Rebate) and the PLTA. In recognition of the great work that the PLTA had completed within the Eyre Peninsula community, Tennis Australia and Tennis SA identified the complex as a centre of excellence and recognise them as a Tennis Australia Regional Partner. The facility upgrade drew much media attention in South Australia. Sam Stosur as the ambassador for Places to Play paid the association a visit and over 300 local school kids attended the official opening day.

Charged with its recent success, the association didn't stop there. Despite the recent upgrade the PLTA indicated that additional courts of improved quality are still required to accommodate their current and growing membership and court utilisation. The PLTA set up a Tennis Working Party aimed at furthering tennis opportunities within the region and continuing tennis facility development. The Tennis Working Party included selected staff and elected members of the City of Port Lincoln as well as member s of the PLTA management committee. The City of Port Lincoln soon recognised that the conditions of its community tennis facilities and playing surfaces had deteriorated to sub-standard conditions and in some cases could be considered unsuitable for use. A five year strategy for improving tennis infrastructure in the City was developed by the Port Lincoln Tennis Future Directions Working Party.

This collaboration of stakeholders and strategic planning saw the Council commit $700,000 over a three year period for the development of a second site with the construction of eight tennis courts across an underutilised netball site. This eight court complex underwent full site redevelopment inclusive of fencing, base preparation, resurfacing and lighting. With court construction now complete, these two projects have given the Pork Lincoln Tennis Association sixteen Plexipave (AO True Blue) courts to ITF specifications. The Association will now have the ability to host both national and international events over their two sites with further upgrades to amenities and lighting to be completed over the coming two years. Not only will this benefit PLTA and the tennis community but also the wider Port Lincoln and Eyre Peninsula region through the economic gains these events will bring.

The opening of the new facility was a great success with former local boy, Davis Cup Captain and Grand Slam champion, John Fitzgerald, on hand to help with the opening celebrations. Given the new capacity of PLTA, they now provide a range of tennis activities and programs through their qualified coach. These activities range from social night tennis programs, talent squads for local juniors and MLC Tennis Hot Shots both in a club and school capacity. A firm focus has been given towards introducing local school children to tennis via established links between local schools and the association.

A few key messages from this project include:

1. Aligning project goals with those of the local community and council are essential in building key relationships and receiving financial assistance.
2. The value of a long term facilities plan is not to be understated. It will not only help the club plan for the future and ensure sustainability but also hold much weight with council.

The future for tennis looks extremely bright within Port Lincoln and the Eyre Peninsula region.

Checklist

When undertaking your next tennis facility development project, please ensure that you have:

- ✓ Conducted a needs assessment and/or business plan for your project in conjunction with club/centre members and key users.
- ✓ Consulted with your local council, Member Association and other key stakeholders.
- ✓ Conducted an assessment of your site, soil and/or associated building conditions (depending on the type of project).
- ✓ Comprehensively budgeted for your project, including securing of grant monies and provision for cost escalation and contingencies.
- ✓ Involved professional designers, technical experts and a project manager (where applicable).
- ✓ Evaluated your project to ensure you have achieved your original objectives.
- ✓ Ensure that all phases of the facility planning process are followed in accordance to this guide.

Acknowledgements

The National Tennis Facility Planning and Development Guide has been developed using information provided within the Victorian Tennis Facility Planning Guide, with the support and endorsement from the Victorian State Government (Sport and Recreation Victoria) and Tennis Victoria.

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- Bundoora Tennis Club
- Southport State High School/Labrador Tennis Club
- Port Lincoln Tennis Association

For further information regarding tennis facility development planning, please visit Tennis Australia's website ***tennis.com.au*** or contact your Member Association.

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