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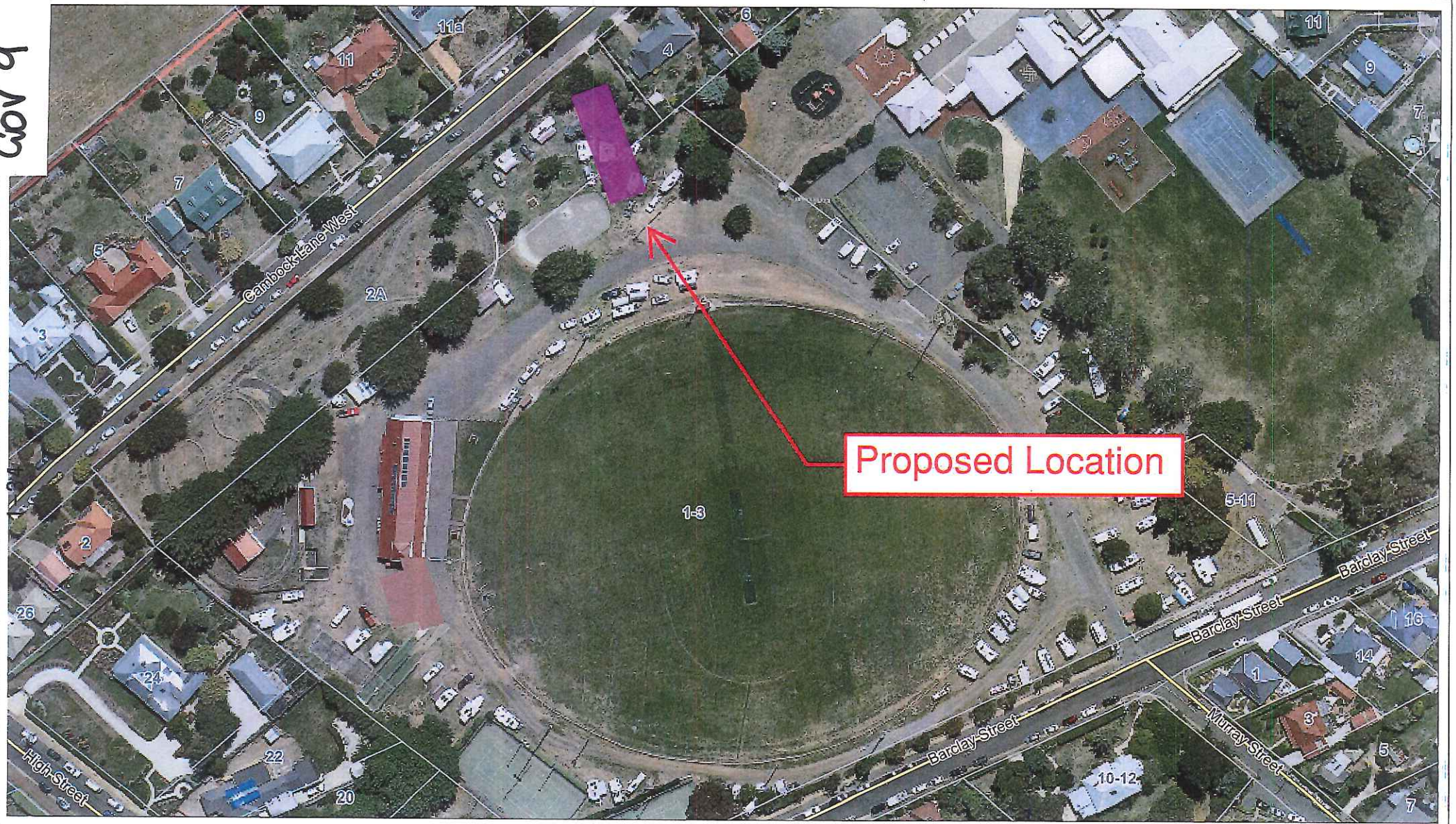

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Cricket Nets Option 1

24/06/2021

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Cricket Nets Option 2

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Cricket Nets Option 3

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Cricket Nets Option 4

24/06/2021

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LANGE design landscape architecture

NORTHERN MIDLANDS COUNCIL

Morven Park Recreation Ground

Barclay Street, Evandale

2025 Master Plan

27 November 2017

Client
Northern Midlands Council
13 Smith Street
Longford Tasmania

Consultant
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Disclaimer
This report has been prepared in accordance with the scope of services described in the contract between Lange Design and Northern Midlands Council. The report relies upon data, surveys and other information specified herein. Any findings, conclusions or recommendations only apply to the aforementioned circumstances and no greater reliance should be assumed or drawn by the client. Furthermore, the report has been prepared solely for the use by Northern Midlands Council, and Lange Design accepts no responsibility for its use by others.

Contents

1 Background

Northern Midlands Council has identified the redevelopment of the Morven Park Recreational Ground as a significant project within the open space and recreational fabric of the municipality.

This Master Plan will provide Council with information for the future planning, detailed design and construction of formalised internal traffic infrastructure, building works, optimal usebility of grounds, consolidation of maintenance facilities and additional community recreational activities.

The information contained within this report is a collaborative effort between the author, Northern Midlands Council and the key stakeholders from each user group that use the recreation grounds. Information has been sourced from Council documents and reports, stakeholder consultations, community surveys, site investigations and aerial photography.

Morven Park Recreation Ground is home to a number of current users including:

- Evandale Football Club (Senior and Junior)
- Evandale Cricket Club
- Evandale Light Rail and Steam Society
- Evandale Tennis Club
- Evandale Primary School

The oval is largely used for AFL and cricket matches by the Evandale 'Eagles' Football Club (Division 2) and Evandale 'Eagles' Cricket Club. Both clubs include men's, women's and junior football teams for games and training during the winter season (AFL), and the summer season (Cricket).

The grounds are currently in full use, all year round, with little time available for 'resting' between the ending of the football season and the beginning of the cricket season. This is a critical factor regarding the high level of maintenance required of the grounds, to ensure they are usable for all sporting and recreational groups throughout the year.

2 Context

The Morven Park Recreation Ground is located within the northern Tasmanian township of Evandale, in the Northern Midlands Council municipality (refer figure 1). Evandale is approximately twenty kilometres from Launceston and has a population of just over 2,000 (2016 Census).

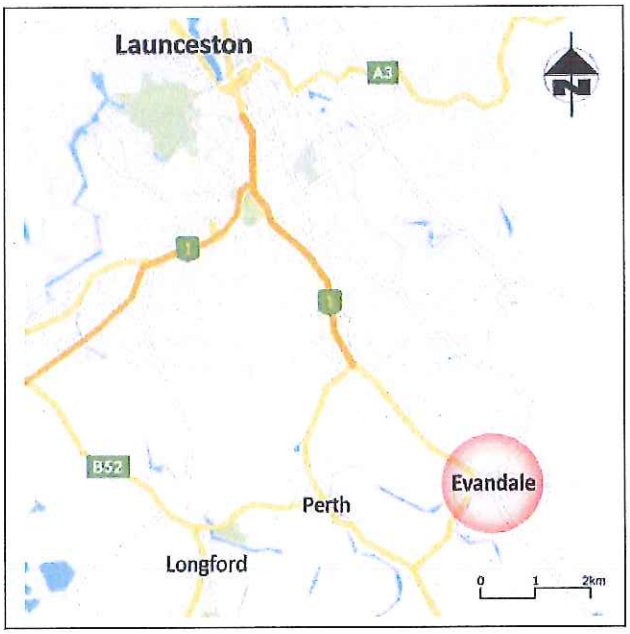


Figure 1 – Contextual Map of Evandale.

The Morven Park Recreation Ground covers an area of approximately 4.26 hectares and is accessed off Barclay Street towards the south eastern corner of the site. As illustrated in Figure 2, the grounds are centrally located on the northern side of Evandale and are easily accessible from all areas within the township, by either walking, riding or driving.

Figure 2 – Contextual Map of the Morven Park Recreation Ground (MPRG).

The recreation grounds are bound by Cambock Lane West to the north, Evandale Primary School to the east, Barclay Street to the south, and the Evandale Tourism Centre, tennis courts and residences to the west. The primary vehicle access to Morven Park is off Barclay Street towards the eastern corner of the grounds.

There are two informal maintenance access gates to the grounds. One off Cambock Lane West which leads directly into the light rail track area, and the other to the north-west side of the tennis courts, with access through the adjoining Evandale Tourism Centre grounds. Pedestrian access, however, is permitted from all four corners of the grounds.

Current built forms within the recreation ground include the clubhouse, light rail sheds, old change room building, the old pavilion and the existing storage shed.

The oval is also centrally placed within the site, with tennis courts and cricket nets to the south-west of the property. A large open space area to the north of the oval includes a skate park and exercise equipment. A dump point for visiting RVs is located behind the clubrooms.

Figure 3 – Site Map of the Morven Park Recreation Ground.

3 A Plan for the Future

The purpose of the Morven Park Recreation Ground Master Plan is to allow Council to gain an understanding of what the current user groups require for their sporting and recreational activities and to identify solutions for the future that can be integrated and consolidated within the grounds and within the existing infrastructure.

The primary issues, raised by user groups, focused on the following issues:

1. Upgrade the clubhouse facilities.
2. Upgrade of oval playing surface.
3. Management of traffic movement.
4. Better storage and maintenance facilities for all user groups.
5. Public recreation facility upgrades (skate park), and new pedestrian lighting and play area.

To gain a clear indication of the current status of these elements, a thorough site investigation was performed in conjunction with detailed consultations with Northern Midland Council representatives, recreation ground user groups, and a community survey delivered to all Evandale residences.

With the information gathered during these consultations and investigations, a master plan and implementation strategy was prepared which would allow Council to commence the redevelopment of the recreation grounds up to the year 2025. This report provides the background to the master plan and provides the detailed implementation strategy to roll-out the proposed works.

4 Site Investigations

Currently, the grounds are predominately used for the sporting activities of AFL, Cricket and Tennis. Recreational activities within the grounds, other than sport, include the miniature train rides and the skate park.

The primary method of gaining information, other than consultation with Council, user groups and the community user survey (Refer appendix 2), involved detailed investigations into the two components of the recreation ground, namely the open space and the built forms.

The open space areas include:

- Property boundaries;
- Access;
- Internal roadways;
- Parking;
- The Oval;
- Cricket practice nets;
- Tennis courts;
- Light rail;
- Outdoor gym;
- Skate park; and
- Trees.

The built forms include:

- The Clubhouse and change rooms;
- Old change room building;
- Old pavilion (grandstand);
- Storage building; and
- Light rail shed and station.

The following sections provide detailed information on the current use and state associated with each item mentioned above. The information expressed is a combination of consultation and site observations and will form the basis for the master plan recommendations shown later in the report.

4.1 OPEN SPACE

4.1.1 Property Boundaries

Southern Eastern Boundary (Barclay Street)

Figure 4 – Clipped hedging with inter-planted trees along the Barclay Street fence line.

Barclay Street forms the southern boundary of the recreation grounds and also provides the main entry into the site. From the main entry south, the boundary is defined by a low chainmesh fence with two stands of wire above to prevent people jumping over the fence.

The eastern side of the main entry consists of a decorative period style looped wire fence with timber posts. Just inside the fence is a clipped hedge inter-planted with trees to add amenity to the street frontage.

North-eastern Boundary (Primary School Interface)

Figure 5 – Open space interface between recreation grounds and the school.

The north-eastern property boundary of the recreation ground adjoins the Evandale primary school. The area between Barclay Street and the school drop-off and pick-up area is not defined by a fence, and is therefore an open grassed area with trees.

This area provides informal parking during games and training activities and parking for visitors partaking in passive recreational activities. Currently, there is no requirement to provide a definitive barrier between the primary school and the recreation grounds.

Figure 6 – School drop-off and pick-up area (the fence line shown here is the property boundary).

One-third of the current student drop-off and pick-up area is located within the recreation ground, approximately midway along the eastern property boundary. The bus turn around point for student drop-off and pick–up is located adjoining this car park within the recreation grounds.

This interface between the grounds and the school is fenced from the school car park through to Cambock Lane West. The northern portion of the eastern boundary appears to be encroached by the adjoining private residence. This encroachment may well be historical and does not pose intrusion onto the current or future use to this corner of the grounds.

North Western Boundary (Cambock Lane West)

Figure 7 – Medium size clipped hedge along the boundary fronting Cambock Lane West.

Other than two small pedestrian access openings and a maintenance access gate, the full length of the north western boundary is screened from Cambock Lane West by a medium height clipped hedge. The hedge encroaches right to the edge of both pedestrian entries and is considered a public safety issue as passive visual surveillance is restricted by the height and depth of the hedge itself.

South Western Boundary

Figure 8 – South western boundary consists of a variety of residential fences.

The south western property boundary is boarded by residential properties with predominantly timber paling fences. There is one yard that has a chainmesh fence with a section of the fence encroaching into the recreation grounds.

The southern end of this boundary accommodates the Evandale Tennis Club which has a small open grassed area which extends into the adjoining property. This adjoining property accommodates the Evandale Tourism and Information Centre.

4.1.2 Access

Figure 9 - Barclay Street main entry.

Vehicle and pedestrian access into the recreation grounds consists of both formal and informal entries. There are four vehicle access points into the grounds, with two formal entries and two informal entries being:

- Designated main entry off Barclay Street.
- Via Evandale Primary School driveway for student drop-off and pick-up.
- Narrow maintenance access point behind the tennis courts with access off Barclay Street and through the adjoining property.
- Cambock Lane West directly into the miniature train track area.

The Barclay Street main entry consists of masonry block columns, metal gates and a pylon sign which displays the name of the park.

Figure 10 – Cambock Lane West pedestrian entry.

There are several pedestrian access points into the recreation grounds:

- Gated access as part of the Barclay Street main entry.
- Informal access between the two tennis courts to the south of the site.
- Cambock Lane West at the western corner of the grounds.
- Cambock Lane West at the northern corner of the grounds.

All pedestrian entries are flanked by hedging which is deemed a hazard to public safety, as clear passive visual surveillance is heavily restricted as shown in Figure 10 and 11.

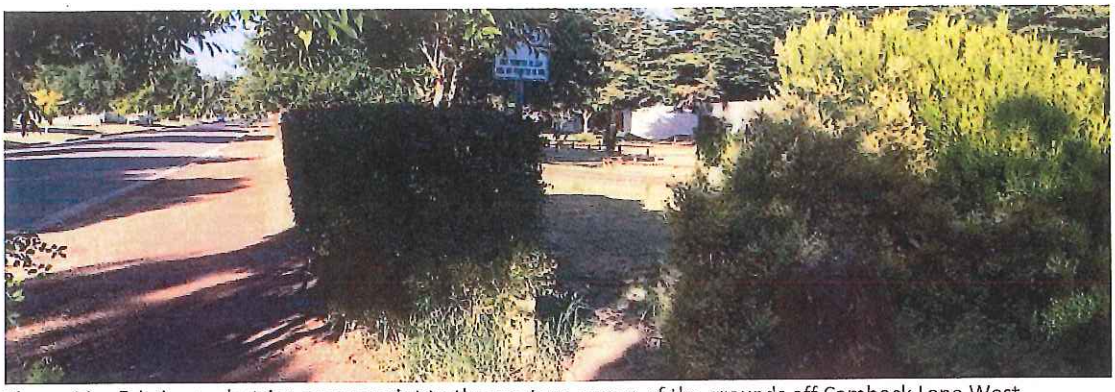


Figure 11 – Existing pedestrian access point to the western corner of the grounds off Cambock Lane West.

4.1.3 Internal Roadways

Figure 12 – Internal roadway between Barclay Street and the school car park area.

The recreation grounds are accessed off Barclay Street to the eastern side of the grounds, with the main access internal road traversing north around the oval to the northern side of the clubhouse. The internal road is an all-weather two coat bitumen seal pavement and terminates at the rear of the existing clubhouse. There is a large fully sealed area adjoining the north eastern side of the clubhouse for parking. The parking area is unstructured.

Figure 13 – Existing gate restricting access around the gravel loop road.

A single lane gravel loop road commences from the southern side of the clubhouse and traverses east around the bottom of the oval, then north to the Barclay Street main entry.

4.1.4 Parking

Figure 14 – Unstructured car parking.

There are no formalised parking areas within the park, however, there is abundant open space that allows for unrestricted informal parking opportunities. As there is no structure, cars are generally parked close to the building with no formal parking system occurring thereafter.

There is ample open space to each side of the clubhouse, around the oval, adjoining the main entry area and around the skate park area.

4.1.4 The Oval

Figure 15 – Oval with the existing perimeter fence in the foreground.

The playing surface of the oval is in relatively good condition and is typical for a division two playing field with the exception of a few drainage issues. The playing field is currently irrigated with a self-moving commercial grade sprinkler.

The cricket pitch consists of a concrete slab with a synthetic turf cover presented in a north – south alignment with a slight rotation to the west. The oval is enclosed by a low galvanised steel post and rail fence to provide a delineation barrier between the playing area and the spectator area.

Player access to the oval is concentrated to the front of the clubhouse, with maintenance vehicle access located to the western side of the clubhouse near the cricket practice nets.

The oval is currently used twelve months of the year, with the primary activities spanning from April to September (AFL), and October to March (Cricket). The surface is rested for approximately two weeks over the Christmas period.

Between the football and cricket season, the area around the pitch is prepared as soon as the football season is finished to allow the turf to recover. This includes removing the synthetic turf and rubber matting after the football season and replacing with the cricket synthetic turf cover.

Currently there is limited drainage under the oval, with several gully pits provided around the oval to capture overland flow during inclement weather conditions.

Lighting of the oval is solely for evening night training and is currently in the process of being upgraded.

4.1.5 Cricket Practice Nets

Figure 16 – Cricket practice nets.

The cricket nets are located along the south-western boundary between the tennis courts and the light rail area. The nets are generally in good condition and consist of two open bays with wire ring-lock fencing and galvanised posts and rail. The two pitches are concrete pavement with a synthetic turf cover.

The current alignment of the cricket practice nets is north-east to south-west, which differs from the cricket pitch in the centre of the oval which is north-south. The existing run up to the practice nets crosses over gravel pavement which forms part of the loop track that surrounds the oval.

4.1.6 Tennis Courts

Figure 17 – Tennis courts with tennis pavilion in the background.

Located in the southern corner of the recreation grounds are two tennis courts and a tennis pavilion, which is home to the Evandale Tennis Club. The infrastructure of the courts, lighting and surfaces are of good quality. The two courts are bound by clipped hedging to the oval side of each court.

The tennis courts are contained within this area, and do not impede on the function and or operation of the greater recreation ground activities, as access is confined to the southern end of Barclay Street via the adjoining property (Evandale Tousist and Information Centre). There are basic landscape elements within the vicinity of the pavilion and courts that are failing in their current form both aesthetically and functionally.

4.1.7 Light Railway Area

Figure 18 – Evandale Light Rail and Steam Society track area.

Located in the western corner of the recreation grounds is the Evandale Light Rail and Steam Society miniature railway park. The area consists of a variety of track lines, track control building, rail station and platform, with some areas cordoned off by a low timber picket fence.

The area also includes an unloading/loading area for miniature trains and other equipment. A large four bay shed is positioned away from the station buildings under several mature Macrocarpa trees.

To the western corner of the site is an existing pedestrian access point which allows pedestrians to traverse through the railway area, including stepping over tracks and potentially accessing surplus loose items including sections of railway lines, timber, metal and other materials.

The rail lines meander throughout a grassed area that consists of shrubs and trees of varying ages that will eventually add amenity to the rail ride experience. A maintained mature hedge defines the north-western boundary of the light rail area.

4.1.8 Outdoor Gym

Figure 19 – Existing outdoor gym.

Adjoining the skate park is a small outdoor gym which consists of three items. The equipment is placed over a synthetic turf surface with no edging between adjoining grass and the synthetic turf. There is one immature Plane tree nearby that will provide eventual shade over the gym within 10 years.

4.1.9 Skate Park

Figure 20 – Existing skate park.

The skate park is located between the oval and the northern corner of the recreation grounds and consists of a large expanse of flat concrete pavement, a low grind rail, small pyramid shaped fun box and a curved ramp at the western end.

The skate park has three medium aged shade trees that only provide partial shading over the pavement during the afternoon.

4.1.10 Trees

Figure 21 – Existing trees.

Planted throughout the park are a variety of ornamental trees consisting of conifers and deciduous specimens. Most of the trees are concentrated to the north, north-eastern corner of the site and provide colour, form and texture to the landscape as well as shade and aesthetics for park users.

There is a row of mature Macrocarpa trees and recently planted trees scattered throughout the light rail area as previously mentioned. Although they provide great shade, the removal of the Macrocarpa trees will need to be considered before they get too big for the current and future uses of the area.

4.2 BUILT FORMS

4.2.1 Clubhouse and Change Rooms

Figure 22 – Existing clubhouse and change rooms.

The clubhouse for the Evandale 'Eagles' Cricket and AFL teams is the dominant building on the recreation grounds. The clubhouse was refurbished approximately nine years ago (2008), however, the building is now too small to accommodate additional separate change rooms men's and women's AFL and cricket teams.

The clubhouse is currently under review for the inclusion of additional change rooms, including a medical room and massage room. The review works are being carried out by LOOP Architecture and are separate to the scope of this report.

4.2.2 Old Change Room Building

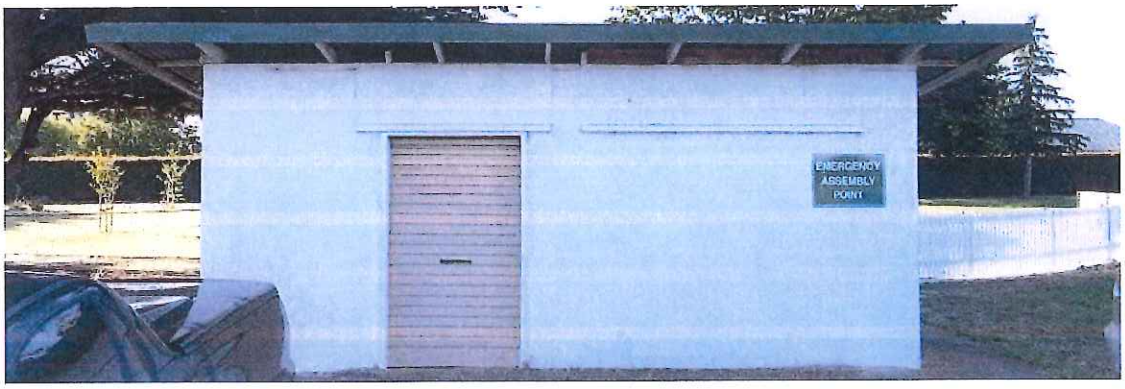


Figure 23 – Existing old change room.

With the recently upgraded clubhouse and the potential for that building to be increased in size, the remaining smaller buildings that surround the clubhouse are no longer required.

The existing old change room building for visiting teams is one of these buildings, and it no longer serves a purpose other than a storage facility.

4.2.3 Old Pavilion

Figure 24 – Existing old pavilion.

The old pavilion was once located closer to the oval, but was relocated when the oval was upgraded to its current form. Today, the pavilion is cordoned off as it is deemed unsafe to occupy.

There have been drawings prepared for the restoration of the pavilion in its current location, but this is considered by Council to be too cost prohibitive. Therefore, the opportunity for a community group to dismantle and relocate the pavilion to another site such as Falls Park off Logan Road is highly recommended.

4.2.4 Storage Building

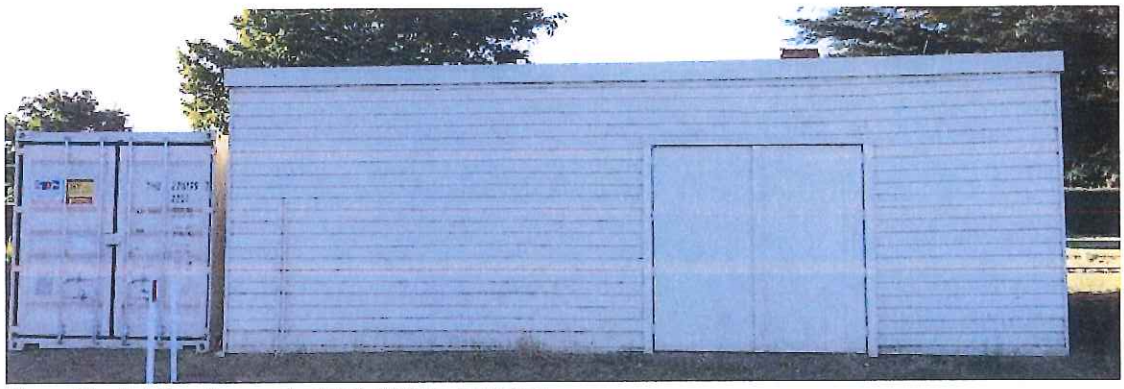


Figure 25 – Existing storage shed and shipping container.

The main storage facility on the grounds is located behind the clubhouse, and backs onto the adjoining miniature railway area. There is also a shipping container positioned next to the building for additional storage.

The building consists of a double access door to the front with a single door on the side. The building also includes a brick fire place and chimney.

4.2.3 Light Rail Buildings

Figure 26 – Existing miniature railway station and control building.

Located behind the clubhouse in the north western corner of the site are the built forms that support the Evandale Light Rail and Steam Society. There are three buildings contained within close proximity of each other being the station which includes a waiting room, ticket box and platform, and the rail control building also located on the platform just to the north of the station.

The large four bay maintenance shed for the light rail is located to the south west of the station with access gained via the loading/unloading area to the south of the station. Although the shed is quite large, there are still sections of rail track, various lengths of timber and other materials informally stored under the adjoining Macrocarpa trees.

The built forms are in good condition and adequately service the light rail area.

5 Proposed 2025 Plan

During the consultation process with Council and the user groups of the recreation ground, a list of objectives for potential works was prepared that would enable the current usability of the grounds to be advanced to accommodate future user group demand and the local community beyond the year 2025.

The key elements of these consultations that set the parametres for the 2025 plan include:

Oval:

- Upgrade oval playing surface, drainage and perimetre fencing.
- Upgrade cricket pitch to comply with Cricket Australia standards.
- Upgrade scoreboard.
- Install underground automated irrigation system.

Clubhouse:

- Upgrade clubhouse to cater for male and female teams.

Grounds Maintenance:

- Upgrade maintenance facilities for each primary user group.

Roadways:

- Formalise parking throughout the park.
- Installation of bollards to control traffic and parking.
- Seal loop road.
- Widen Barclay Street entry to eliminate traffic congestion.

Cricket Practice Nets:

- Realign and reconstruct two bay cricket nets.

Public Recreation

- Restrict pedestrian access through light rail area.
- Installation of a picnic shelter near skate park.
- Installation of pedestrian lighting.
- Installation of drink fountain with dog bowl.
- Upgrade skate park.
- Remove Macrocarpa trees.
- Relocated RV dump point.
- Increase park user regulations signage.
- Installation of play equipment near skate park.

The key elements above are described in detail below, including their placement within the overall program of works. Refer to the Master Plan (appendix 1) for the graphical illustration of the proposed upgrade works.

5.1 OVAL

5.1.1 Oval Refurbishment

Although the oval is in good condition during the summer months, due to poor drainage, it is susceptible to flooding in the south western corner and remains boggy for a period of time after heavy rain. This is compounded by both junior and senior AFL games during the winter months.

To improve the playing surface for future games including men and women's teams both junior and senior, the oval requires redevelopment. The ideal time to commence construction would be towards the end of the AFL season (August), to ensure construction occurs over the dryer months of the year and the turf receives the optimal growing conditions during the summer / autumn season.

During the earthworks and drainage installation phase of the redevelopment, irrigation main lines and feeder lines should be installed for future completion when funding becomes available.

5.1.2 Cricket Pitch

During the redevelopment of the oval, the cricket pitch would also be upgraded to comply with the current Cricket Australia standards for a synthetic turf pitch with the recommended dimensions by 25 – 28m long x 2.4 – 2.8m wide.

5.1.3 Oval Perimetre Fence

The existing galvanised pipe post and rail perimetre fence needs to be upgraded where required with an appropriate fence. Cricket Australia recommend fencing for a cricket ground of this nature, to consist of a galvanised chain mesh wire fence at either 900mm, 1050mm or 1200mm around the playing field. For the Morven Park Recreation Ground, a 1050mm high fence would be more than appropriate.

Cricket Australia also recommend that the fence ensures emergency vehicle maintenance machinery access to the playing field are provided. These requirements are illustrated on the master plan.

5.1.4 Oval Lighting

At the time of preparing this report, it is understood that the ground's current lighting is being upgraded. It is recommended that the current lighting infrastructure be relocated to Cressy Recreation Ground for reuse.

5.1.5 Scoreboard

The current scoreboard is manually operated from the designated scorer's box positioned on the second story of the existing clubhouse building. This location requires spectators either within the clubhouse and under the verandah have to walk towards the oval to look back to see the score.

A remote controlled electronic scoreboard should be positioned on the opposite side of the clubhouse as indicated on the master plan. It is recommended that the scoreboard should be selected to display both AFL and Cricket scores, with dimensions approximately 3.6m long x 1.96m high. A digital clock and team names should also be clearly displayed on the board. The scoreboard must be post-mounted and elevated off the ground.

5.2 TRAFFIC AND PARKING

5.2.1 Barclay Street Entry

The current the main entry into the ground is narrow and causes a bottleneck effect during training days and school drop-off / pick-up times. The masonry entry pillars are capable of being repositioned by mechanical means to allow for the widening of the entry as shown on the master plan, to accommodate a central median with a ticket box. The widened entry will provide better traffic flow in and out of the entry as the in / out lanes will be clearly defined and separated.

There is scope to completely rebuild the entry with a new feature masonry blade wall to match the height of the fence which would feature the ground's name, as well as the inclusion of the cricket club, AFL club and light rail and steam society logos to provide a better street presentation for the grounds.

Also, by realigning or reconstructing the entry area, pedestrian access can be improved to create a more defined and safer entry point off Barclay Street as illustrated on the master plan.

5.2.2 Driveway

Currently, the main driveway consists of a two-coat sealed bitumen pavement, which extends from the Barclay Street entry to the school drop-off / pick up area. From here, the two-coat seal terminates and an asphalt pavement commences and continues around the northern part of the oval to the rear of the clubhouse, terminating in line with the southern facing wall of the clubhouse.

The asphalt pavement widens out to provide an unstructured parking area adjoining the eastern side of the clubhouse.

To control traffic speed along this driveway, more speed humps need to be installed at 50m intervals, to prevent vehicles picking up speed. Bollards should also be placed along the driveway and parking areas to differentiate between trafficable and non-trafficable area as shown on the master plan.

5.2.3 Car Parking

Parking within the recreation grounds is informal and unrestricted. To provide a safer environment for pedestrians, car parking areas need to be defined and formalised, not only to increase parking opportunities, but also to provide safe areas for passive recreation without being impeded by vehicles.

As highlighted on the master plan, defined areas for parking are located at the school drop-off / pick-up area, fronting the skate park and proposed playground area, adjoining the northern side of the clubhouse to both sides of the driveway, and to the front of the light rail station behind the clubhouse.

The total number of structured car parking bays amount to forty-eight (48). In addition to the structured parking areas, informal parking is still accommodated around the oval as explained in the following section.

5.2.4 Car Based Spectators

Car based spectator areas around the oval, particularly on the north western side of the oval, should be retained. Where car based spectator areas are prone to ponding, drainage to those specific areas shall be enhanced, and where required, compacted gravel road base be installed to provide all weather access.

5.1.5 Oval Loop Road

The oval loop road is currently a compacted gravel pavement and should be upgraded to a permanent two-coat bitumen seal to provide all-weather access during game days. The loop road should also consist of speed humps at 50m intervals to keep speed to a minimum.

Vehicle access around the southern part of the oval will be restricted to non-game days by the placement of bollards and access gates as shown on the master plan.

5.2 GROUNDS MAINTENANCE

5.2.1 Maintenance Facility

The master plan drawing identifies the preferred location for the maintenance and storage facility which offers direct access to the western side of the grounds, clear from clubhouse activities and traffic flow.

The new facility, whether architecturally designed or pre-fabricated, should accommodate the grounds maintenance requirements as well as the football club and the cricket club. The facility should be one large shed with at least three large bays and include a large concrete hardstand area to the front to allow for parking and cleaning of equipment.

The shed facility should also be partitioned off for each user group, well ventilated and individually supplied with power and water. The grounds maintenance section should be the larger portion to accommodate the maintenance equipment (tractor, mower, etc), as well as storage of tools, chemicals and fuels. This section would also include a workbench and a work-safe safety area consisting of a shower and eye-wash station.

5.3 CRICKET NETS

As illustrated on the master plan, the existing cricket practice nets shall be realigned to suit the cricket pitch on the oval. The proposed location allows for two full size nets and a maintainable grassed run-up space for pace bowlers, without being obstructed by vehicle access.

The proposed cricket practice nets should consist of two 3.6 metre wide nets with 27 metre long side panels, and a chainmesh roof to cover a 6 metre long area over the batting crease in accordance with Cricket Australia's design guidelines.

For durability and longevity, the new cricket practice nets would incorporate galvanised steel posts, top and bottom rails, and heavy-duty chainmesh netting with a black PVC coating. The playing surface within the nets would consist of a concrete base slab with two grades of synthetic turf cover, one for the pitch and the other for the adjoining surface leading out to the 21 metre mark.

Ideally, one practice wicket should be gated for club use only, with the other allocated for club and public use.

5.4 SKATE PARK

This master plan proposes that the existing skate park is upgraded to provide more challenges for beginners and intermediate skaters. The current quarter pipe, low level grind rail and pyramid box should be complemented with an additional quarter pipe manufactured from steel, as well as a brick box and higher grind rail.

In addition to the skate components, additional seating in the form of 450 square concrete cubes over a coloured concrete pavement would also add to the enjoyment of the space both in the sun and under the tree as illustrated on the master plan.

5.5 OUTDOOR GYM

The small outdoor gym located next to the skate park shall remain, with the installation of a drink fountain nearby. To maintain a neat and kept appearance, a 200mm wide concrete edge flush with both adjoining surfaces should be installed to prevent grass encroaching into the synthetic turf area under the exercise equipment.

5.6 PLAYGROUND

As a result of the user group consultation and community feedback, there is a need to install a small playground near the skate park as illustrated on the master plan to cater for young children and families. The playground should consist of traditional play equipment such as a swing and a slide, but also a cubby house and climbing structure.

The play equipment should be made accessible to all abilities by installing wet pour rubber access where required.

5.7 PICNIC SHELTER

Where shown on the master plan, the provision of a simple skillion roof picnic shelter (4m wide by 5m long), will provide an all-weather shelter within close proximity to the playground, outdoor gym and the skate park. The picnic shelter shall consist of an accessible picnic table over a concrete slab.

5.8 LIGHT RAIL AREA

Currently, the light rail area is well maintained by the Evandale Light Rail and Steam Society. There is great opportunity to restrict access by the general public into the rail line areas by continuing the white picket fence around the designated area. This would not only provide a safer area, but also clearly define the space.

5.8 TENNIS COURTS AND PAVILION

The tennis court area and pavilion are in relatively good condition, however the building should be investigated to ensure the structural integrity is sound and to restore any materials that are failing.

The existing concrete unit paving that links the pavilion and the courts should be replaced with concrete pavement to provide a safer pedestrian area. The existing picnic table, treated pine furniture and garden edging should also be replaced with more appropriate durable materials.

The existing Golden Elm tree located between the two courts shall also be investigated to determine whether the tree and/or the root system may damage the tennis court fencing or surfaces as the tree continues to mature.

5.9 PEDESTRIAN LIGHTING

The local community requested the installation of pedestrian orientated lighting for people walking during the winter months of the year. It is recommended that a line of pole mounted lights provide an illuminated walkway from the northern pedestrian entry off Cambock Lane West and along the roadway through to the main entry area off Barclay Street.

6 Prioritising Proposed Redevelopment Works

This section identifies the priority schedule for the proposed redevelopment works of the Morven Park Recreation Grounds as described in the previous sections and in order of significance.

PRIORITY		BRIEF DESCRIPTION OF WORKS
1	Clubhouse	Upgrade building facilities including additional change rooms for female teams, additional rooms for first aid and player massage, inclusion of public toilets, and refurbish whole building for DDA compliance.
2	Oval	Reconstruct oval drainage, playing surface and cricket pitch, including reconstruction or perimetre fence and the installation of main lines for future irrigation works.
	Traffic	Reconstruct Barclay Street entry including demolition of existing booth, widening of entry, inclusion of central traffic island with ticket box, and upgrade pedestrian entry.
	Traffic	Install bollards to parking areas adjoining the skate park and future playground area.
3	Old Pavilion	Dismantle and relocate old pavilion off site.
	Playground	Construction of playground to include activities for all ages with access for all abilities, and park seating.
	Shelter	Installation of a 4 x 5m picnic shelter between playground and skate facility.
	Seating	Installation of park seating around the grounds.
	Maintenance Facility	Demolish existing storage and old change room building and construct new three bay maintenance shed with a concrete wash down pad to the front.
4	Lighting	Install pole mounted pedestrian lighting between Cambock Lane West pedestrian gate and Barclay Street main entry.
	Signage	Installation of park regulation signage at all entries.
	Traffic	Installation of asphalt pavement and two-coat bitumen sealed pavement to bus turn around area and new car parks, including the installation of speed humps along the roadway.
	Traffic	Upgrade oval loop road to two-coat bitumen seal.
	Traffic	Installation of bollards to control parking and traffic flow.
5	Trees	Fully remove Macrocarpa trees and clear trunk all other trees within the park to 2.4m.
	Dump Point	Relocate dump point to Translink.
	Fencing	Continue new heritage themed fence along Barclay Street south of the main entry.
	Light Rail	Full enclose light rail area with white picket fence.
	Oval	Installation of electronic scoreboard for cricket and AFL games.
	Water	Installation of water bubbler with dog bowl near main entry and picnic shelter.
	Skate Park	Upgrade skate park to include additional quarter pipe, grind rails, fun box and seating.

The following sections unveil the costings associated with the above mentioned works and the scheduling of the roll-out of the works in relation to Council's capital works program.

7 Costings

In order for Council to assess and roll out the proposed redevelopment works, Core Construction Management (Quantity Surveyors), have been engaged to provide a cost estimate for the proposed works. The estimates are based upon the items shown on the master plan.

Below is a summary of each key item of the 2025 master plan, illustrating the estimated construction cost of each item. The estimates include a 20% contingency which is a standard percentage for master planning works. GST is not included in these prices.

PROPOSED WORKS	ESTIMATED COST
New building works to clubhouse	$ 1,500,000
Oval upgrade (drainage, irrigation main lines, playing surface, fencing)	$ 450,000
Redevelopment of main entry off Barclay Street	$ 16,500
Asphalt pavement (bus turn area and emergency vehicle parking area)	$ 83,500
Two coat bitumen seal to car parking areas	$ 48,000
Two coat bitumen seal to oval loop road	$ 42,000
Bollard placement to control parking and traffic movement	$ 116,500
Demolition of existing buildings no longer required	$ 10,500
New maintenance shed and pavement	$ 100,000
Realign light rail loading / unloading area	$ 3,500
New cricket net alignment	$ 40,000
Fencing to light rail area	$ 25,000
New fence along Barclay Street	$ 38,000
Removal of Macrocarpa trees	$ 50,000
Removal of Dump point	$ 2,000
Removal of hedges adjoining pedestrian entry areas.	$ 2,000
Restoration works to tennis pavilion	$ 15,000
Pavement and furniture works to tennis court area	$ 5,000
Pedestrian lighting	$ 65,000
New electronic scoreboard	$ 20,000
New picnic shelter and picnic settings	$ 20,000
New playground and park seating	$ 75,000
Outdoor gym enhancement works and drink fountain	$ 4,000
Park regulation signage	$ 5,000
Skate park additions	$ 50,000
Sub Total	**$ 2,786,500**
20% Contingency	$ 557,300
TOTAL	**$ 3,343,800**

8 Implementation Strategy

Each item identified within the 2025 master plan is an integral component of the overall redevelopment of the Morven Park Recreation Ground with each component requiring detailed planning, funding, project management and finally construction.

This implementation strategy outlines the potential staging program for works identified from 2020 through to 2025. This, however, is dependent on the sourcing of funds. The figures associated with each stage are determined by the scope of works required to construct that specific stage. Costing across all elements may be manipulated due to the progression of works required to achieve the construction of a particular stage.

The proposed staging of works from 2020 through to 2025 is as follows:

Stage One: 2020 – 2021
Estimated Cost: $ 1,858,200.00 (including 20% contingency of $309,700.00)
Associated Works:

1. Clubhouse upgrade.
2. Realignment of light rail loading/unloading area.
3. Realignment of cricket practice nets.
4. Installation of park regulation signage.

Stage Two: 2021 – 2022
Estimated Cost: $592,200 (including 20% contingency of $98,700.00)
Associated Works:

1. Oval upgrade including fencing and irrigation.
2. Upgrade Barclay Street entry.
3. Fence off light rail area.
4. Remove hedging to pedestrian entry points.

Stage Three: 2022 – 2023
Estimated Cost: $ 391,200.00 (including 20% contingency of $65,200.00)
Associated Works:

1. Demolition of old buildings.
2. New maintenance shed and pavement.
3. Bollard placement to parking and roadway areas.
4. New playground and park seating.
5. New picnic shelter and picnic settings.
6. Outdoor gym edging and drink fountain.

Stage Four: 2023 – 2024
Estimated Cost: $286,200.00 (including 20% contingency of $47,700.00)
Associated Works:

1. Asphalt to bus turn around and to the southern end of clubhouse.
2. Two-coat bitumen seal to car parking areas and oval loop road.
3. Pedestrian lighting.

Stage Five: 2024 – 2025
Estimated Cost: $ 216,000.00 (including 20% contingency of $36,000.00)
Associated Works:

1. Skate park upgrade.
2. Electronic scoreboard.
3. Removal of dump point.
4. Removal of Macrocarpa trees.
5. New fence along Barclay Street
6. Restoration of tennis club area.

9 Conclusion

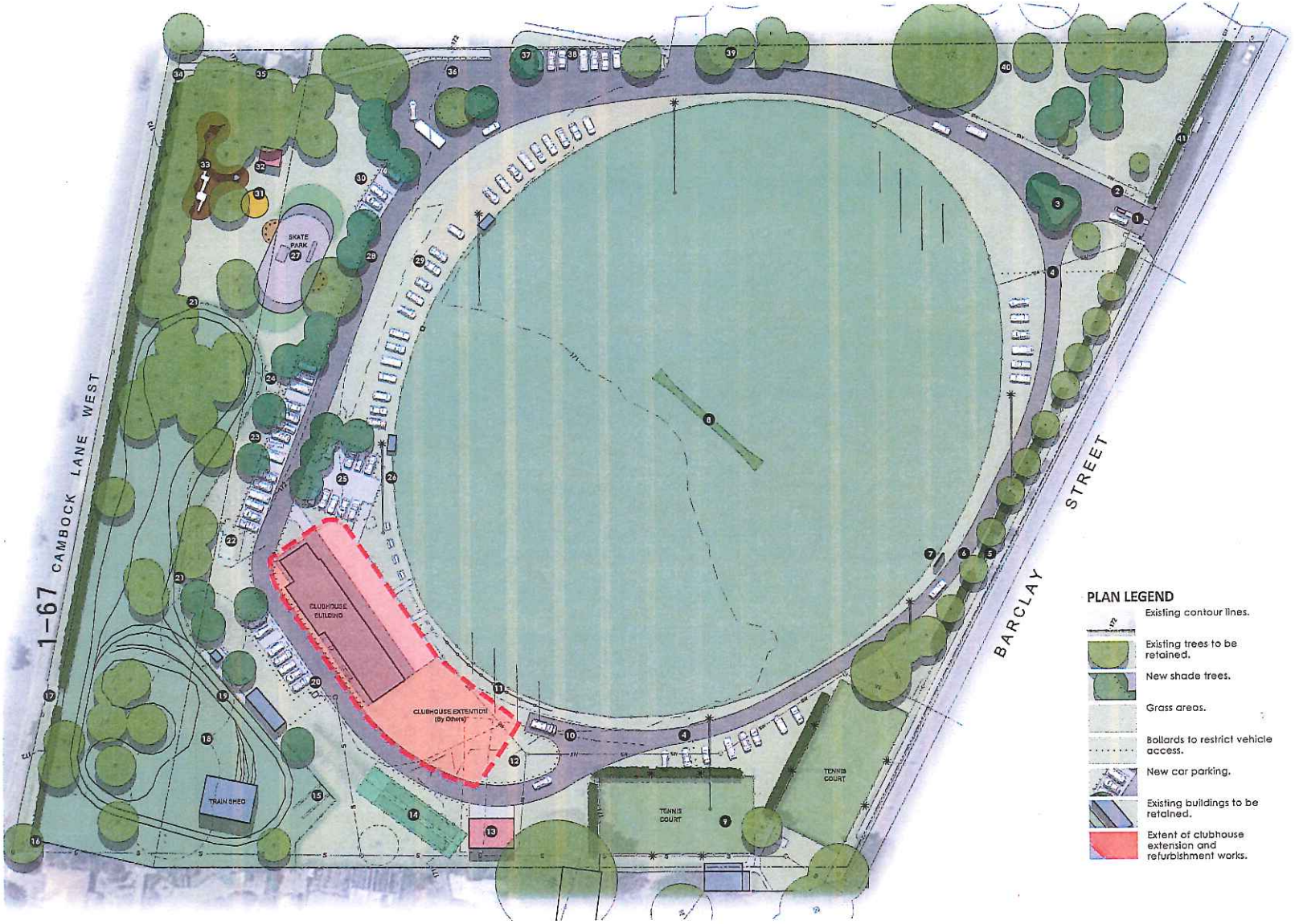
This master plan report was developed through detailed background research, consultations with Council and user group representatives, a user survey mailed to the Evandale community, and extensive on the ground site investigations. Consultations with Council, the user groups and the community survey resulted in an understanding on how the grounds are utilised by sporting clubs, the local community and visitors.

Many of the discussions and the feedback from the various stakeholders resulted in a broad suite of enhancement projects that would provide a greater recreational space for the sporting clubs and the community for another fifty to sixty years at least.

Detailed research combined with the needs and wants of the community resulted in the development and delivery of the master plan, by ensuring every aspect of the current and potential recreational uses were explored. The master plan produced many items that together, will deliver significant enhancements to the function and aesthetic quality of the grounds.

The implementation strategy in the previous section relies heavily on the availability of funding from local, state, and federal governments, and the relationship that the key components have in providing a better recreational experience for the community.

Appendix 1 Morven Park Recreation Ground Master Plan



PLAN LEGEND

- Existing contour lines.
- Existing trees to be retained.
- New shade trees.
- Grass areas.
- Bollards to restrict vehicle access.
- New car parking.
- Existing buildings to be retained.
- Extent of clubhouse extension and refurbishment works.

1. Widen existing entry by designating in and out lanes divided by a raised traffic island with ticket box. Reconfigure pedestrian access gate and provide drink fountain.
2. Demolish existing ticket booth.
3. Formalise driveway intersection with grass and feature trees.
4. Restrict access to loop road with bollards and rail gate.
5. Upgrade fence fronting Barclay Street.
6. Upgrade gravel loop road to a two coat bitumen seal surface.
7. New remote operated electronic scoreboard.
8. Refurbish oval including Division One playing surface, regulation cricket pitch, irrigation and drainage.
9. Existing tennis courts to be retained as is.
10. New asphalt surfacing with bollards to control traffic and to provide a designated emergency vehicle parking area during game days.
11. High chainmesh fence behind the goal posts to protect new building works and emergency vehicle.
12. Vehicle free area adjoining additional clubrooms for pedestrian access and informal activities.
13. New three bay maintenance and storage shed with concrete entry with direct access to the oval.
14. Cricket nets to be realigned to reflect the oval pitch alignment, and to allow for building extension works.
15. Evandale Light Rail and Steam Society loading area to be reconfigured to allow for the realignment of the cricket nets and run up area.
16. Existing pedestrian access from Cambock Lane West to be blocked off to prevent access through the miniature train area to reducing risk of injury.
17. Existing maintenance access gate and hedging to be retained.
18. Existing Macrocarpa trees to be fully removed.
19. Evandale Light Rail and Steam Society Railway station area to be retained.
20. Existing Dump Point to be reconsidered and potentially relocated to TRANSLINK to alleviate congestion during training and game days with RV's.
21. Install a 900mm (h) timber picket fence to define the railway park.
22. Existing storage building to be demolished.
23. Existing old timber pavilion to be relocated off site.
24. Existing building to be demolished.
25. New carpark with shade trees, bollards and concrete pavement access paths to the clubhouse.
26. Upgrade existing oval perimeter fence.
27. Upgrade existing skate park with another ramp and fun box.
28. Existing asphalt road to be retained.
29. Vehicle based spectator area to be retained.
30. Bollards to restrict access to skate park, shelter and playground.
31. Existing outdoor exercise equipment to be retained.
32. New picnic shelter with picnic table setting under.
33. New playground with cubbies, slides and double swing set.
34. Existing hedge to be reduce around the pedestrian entry to provide greater visual surveillance to enhance public safety.
35. Pedestrian lighting installed between Cambock Lane West and Barclay Street to increase public safety at night.
36. Upgrade existing gravel turnaround to an asphalt surface.
37. Shade tree planting with bollards under to restrict vehicle access.
38. Formalise existing car park with asphalt and line marking.
39. Existing trees with branches down to the ground to be either clear trunked or fully removed to enhance public safety.
40. Existing trees to be retained.
41. Newly planted hedge to be retained.

MORVEN PARK RECREATION GROUND

Barclay Street Evandale Tasmania

Preliminary Master Plan

0 5 10m

September 2017
Issue B

NORTHERN MIDLANDS COUNCIL

LANGE design

Appendix 2 Morven Park Recreation Ground User Survey

Morven Park Recreation Ground User Survey

Council has contracted Lange Design to develop a masterplan for the Morven Park Recreation Ground to guide future development of the facility. Residents who use the Recreation Ground are encouraged to complete and return the following survey. Your honest feedback is greatly appreciated.

Please rate the following items you see as a priority for further development at Morven Park Recreation Ground:

(1=high priority 2=some priority 3=neutral 4=low priority 5=no priority)

OVAL:

- Upgrade of oval playing surface to alleviate boggy areas ☐
- Rectification of oval perimetre fencing to include steel tubing and ringlock wire ☐
- Installation of an electronic scoreboard ☐
- Installation of automated, underground, watering system ☐

CLUB HOUSE UPGRADE:

- Renovation to include second storey with viewing deck, functions area, bar, meeting room ☐
- Additional change room facilities to accommodate mixed teams ☐

MAINTENANCE / STORAGE / GRANDSTAND:

- Removal of existing, dilapidated grandstand ☐
- Replacement of grandstand with storage and grounds maintenance facilities under ☐
- Installation of public toilets ☐

ROADWAYS:

- Formalise parking around club house ☐
- Installation of bollards to control traffic and parking ☐
- Installation of speed humps to control speed limits ☐
- Provision of two-coat bitumen seal to oval loop road ☐

PUBLIC RECREATION:

- Installation of covered picnic / seating shelter near skate park / recreation area ☐
- Lighting of grounds for night walking / exercise ☐
- Installation of a water bubbler with dog bowl fitting ☐
- Designated pathway and continuation of picket fencing to restrict access behind train tracks ☐
- Upgrade of skate park facility with contemporary fittings ☐
- Investigation of vehicle access issues caused by location of dump point ☐
- Continuation of replacement external fencing along Barclay Street frontage ☐
- Removal of Macrocarpa trees ☐
- Installation of more defined signage regarding dogs on leads only ☐
- Installation of play equipment for children of all ages ☐

Other suggestions

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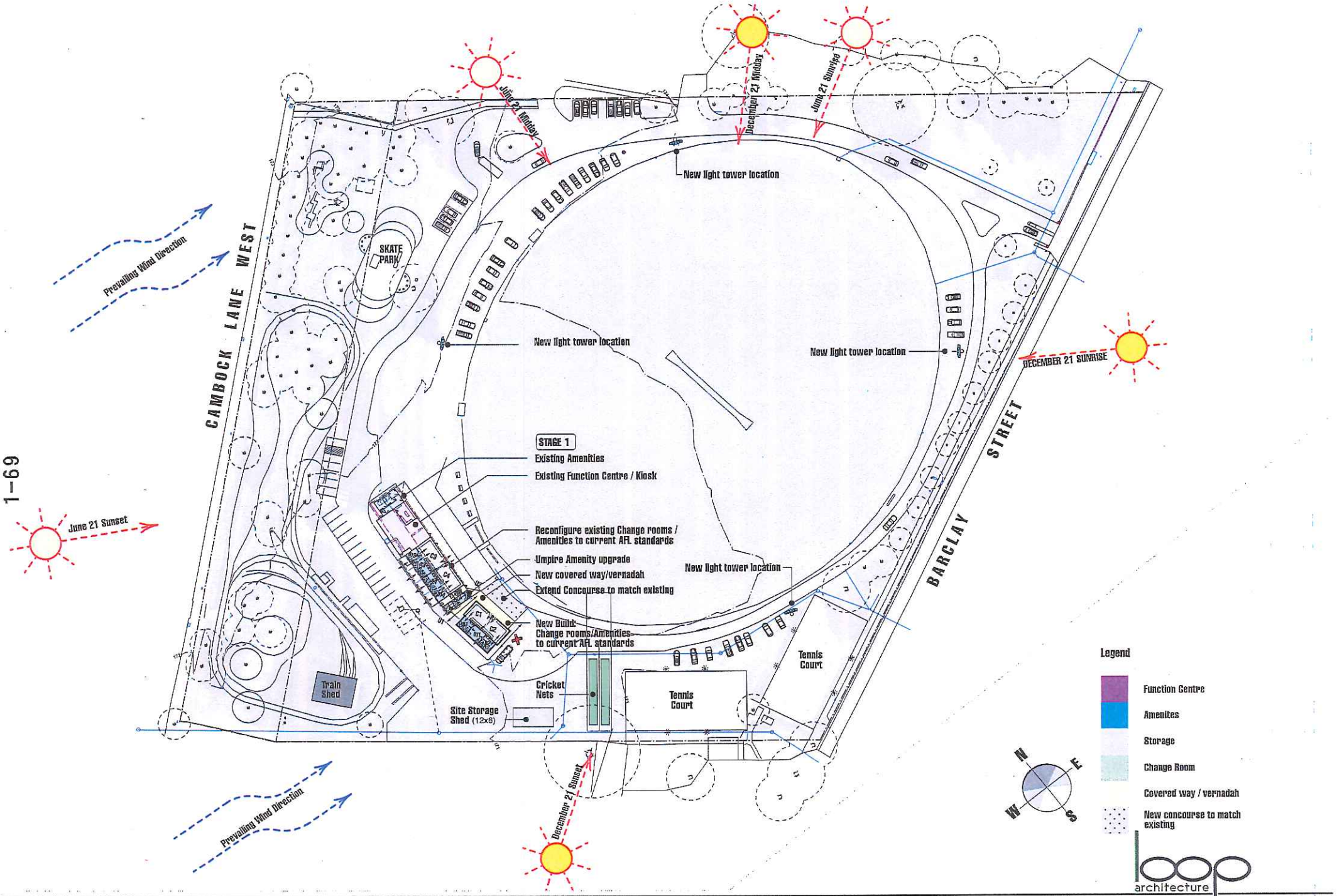

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Site Masterplan Stage 1

MORVEN PARK RECREATION GROUND

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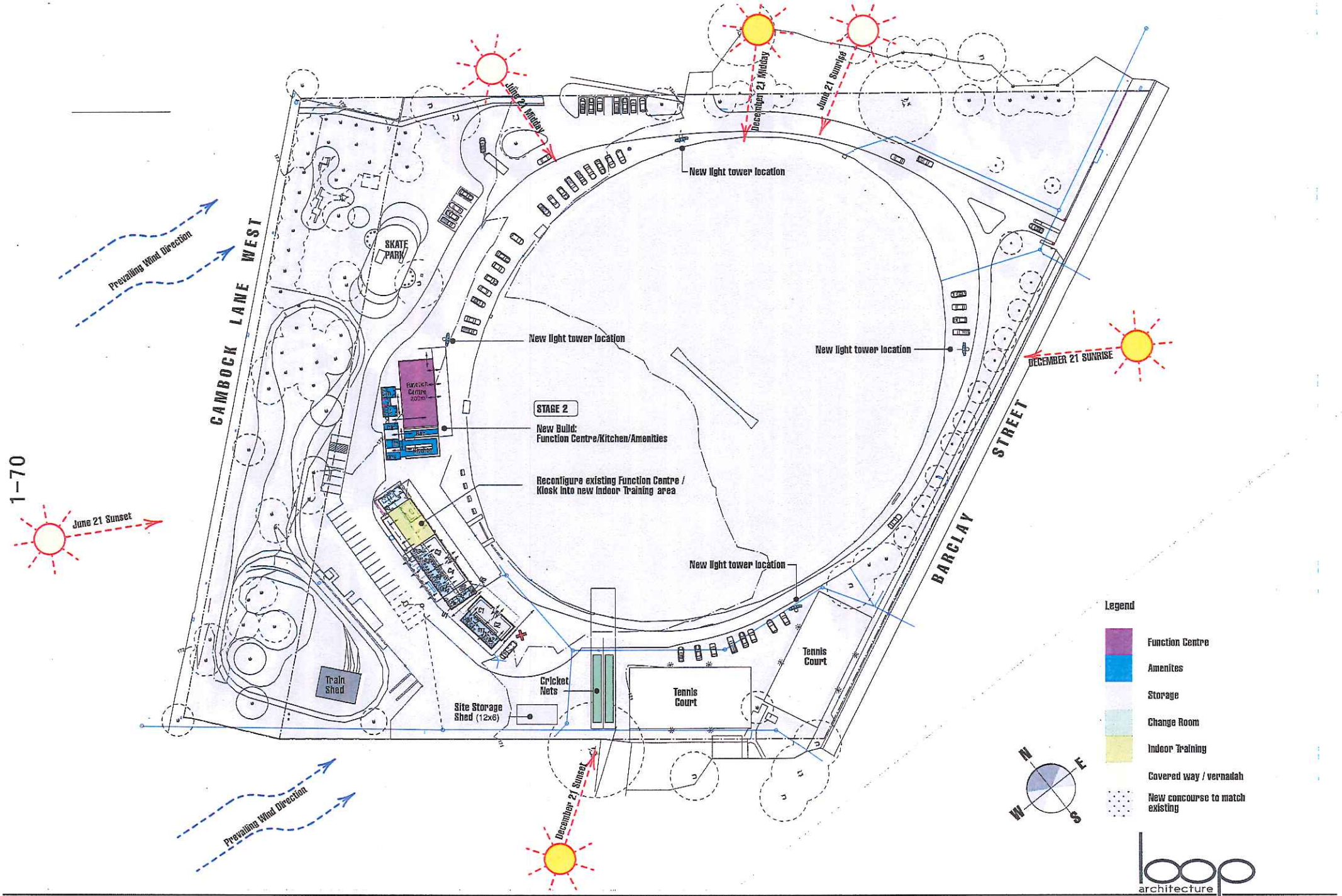

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Site Masterplan Stage 2

MORVEN PARK RECREATION GROUND

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Stage 1 masterplan

MORVEN PARK RECREATION GROUND

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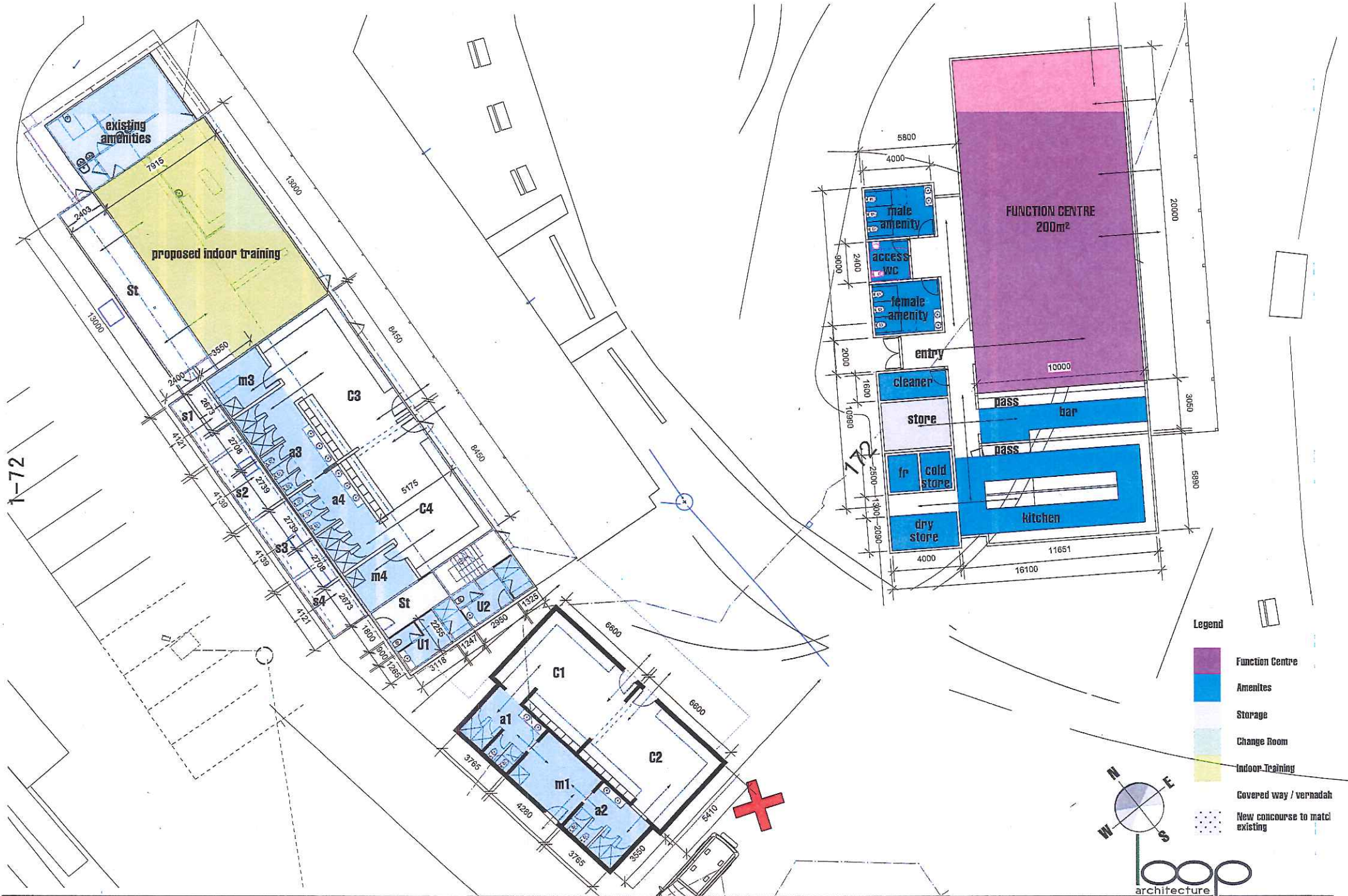

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Stage 2 masterplan

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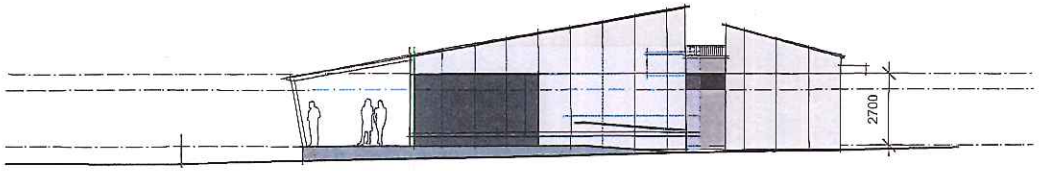

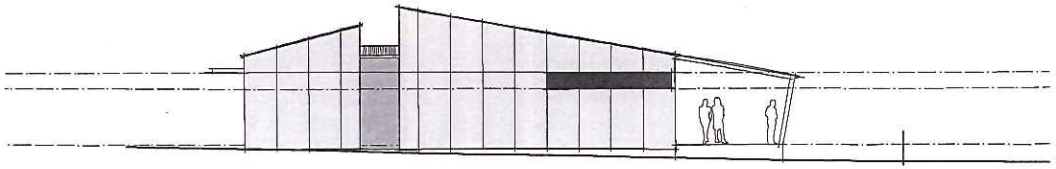

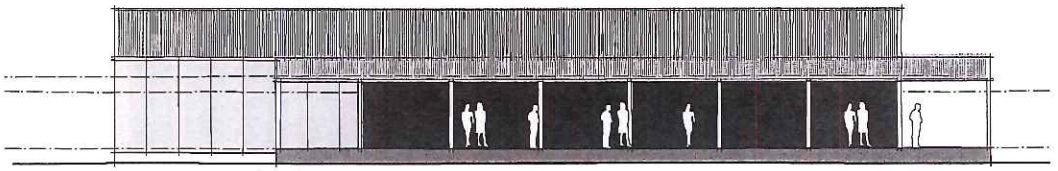

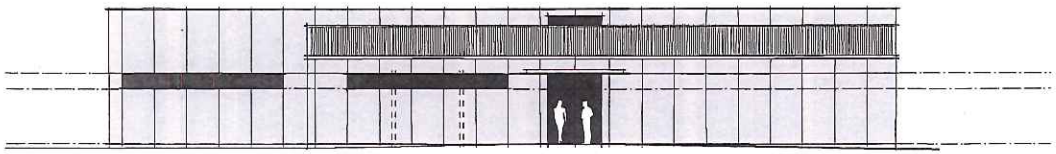

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Function Centre

MORVEN PARK RECREATION GROUND

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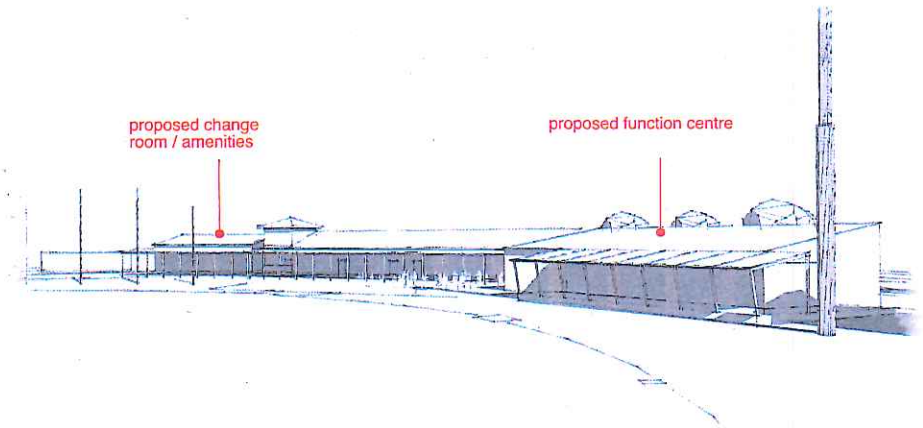
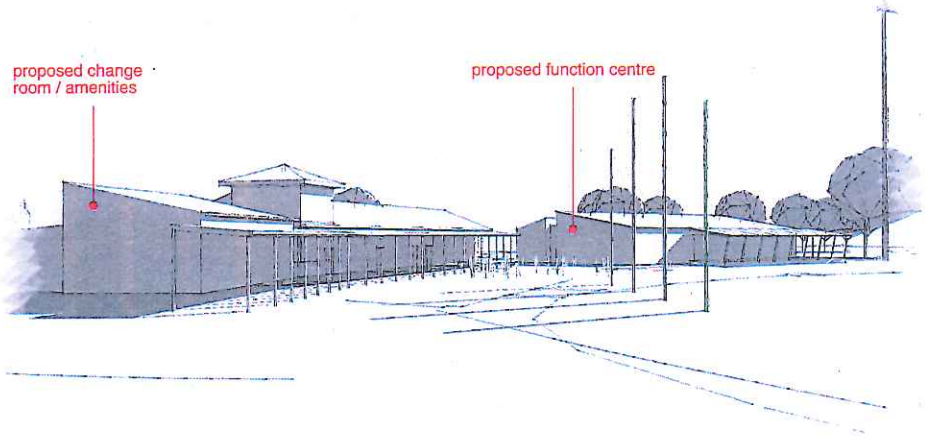


Artist Impression - View looking South West



Artist Impression - View looking North West

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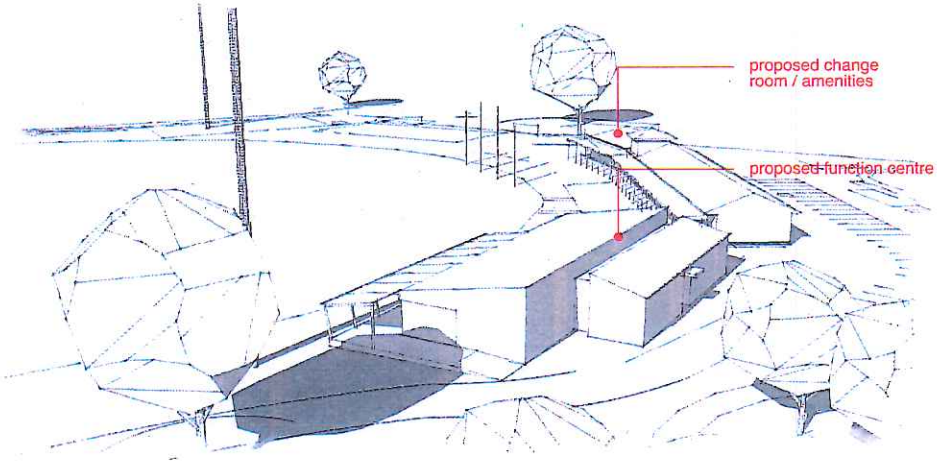
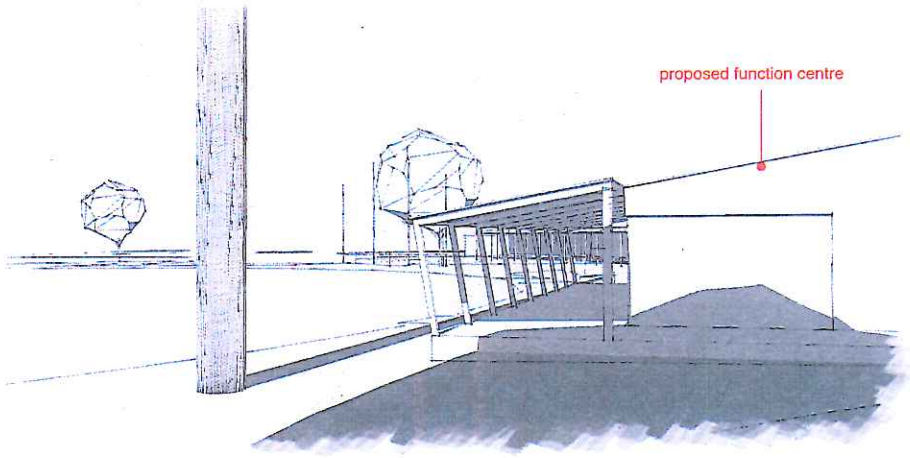


Artist Impression - Aerial view looking South West



Artist Impression - View looking South

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Artist Impressions
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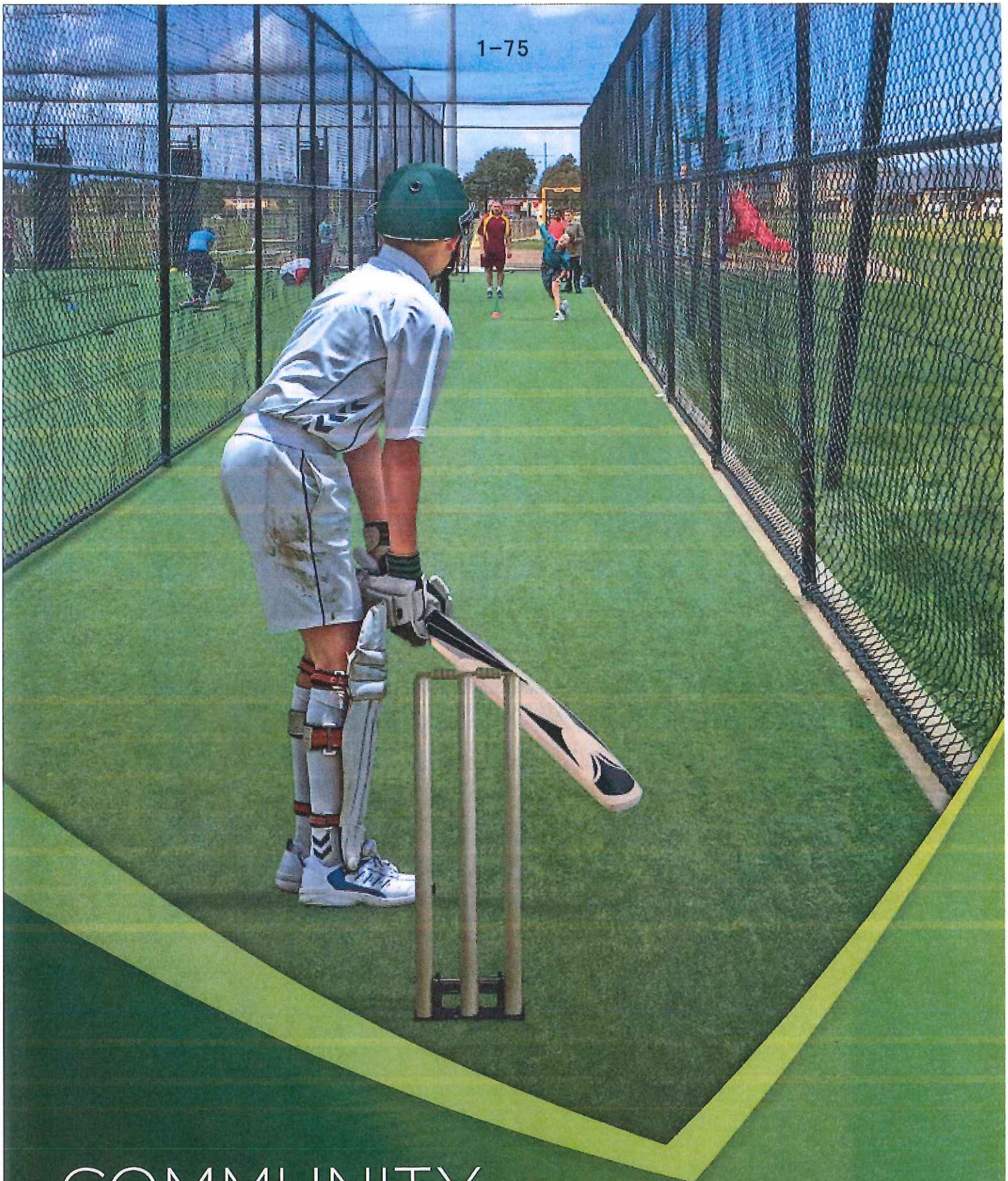

COMMUNITY CRICKET FACILITY GUIDELINES

HELPING LOCAL COMMUNITIES CREATE QUALITY CRICKET FACILITIES

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AUSTRALIA

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COMMUNITY CRICKET FACILITY GUIDELINES

HELPING LOCAL COMMUNITIES CREATE QUALITY CRICKET FACILITIES

community.cricket.com.au/facilities

Table of Contents

Foreword

It is my pleasure to introduce you to Cricket Australia's *Community Cricket Facility Guidelines* – a document that details Cricket Australia's recommendations and preferred requirements and resources for the provision, improvement and enhancement of community cricket environments across Australia.

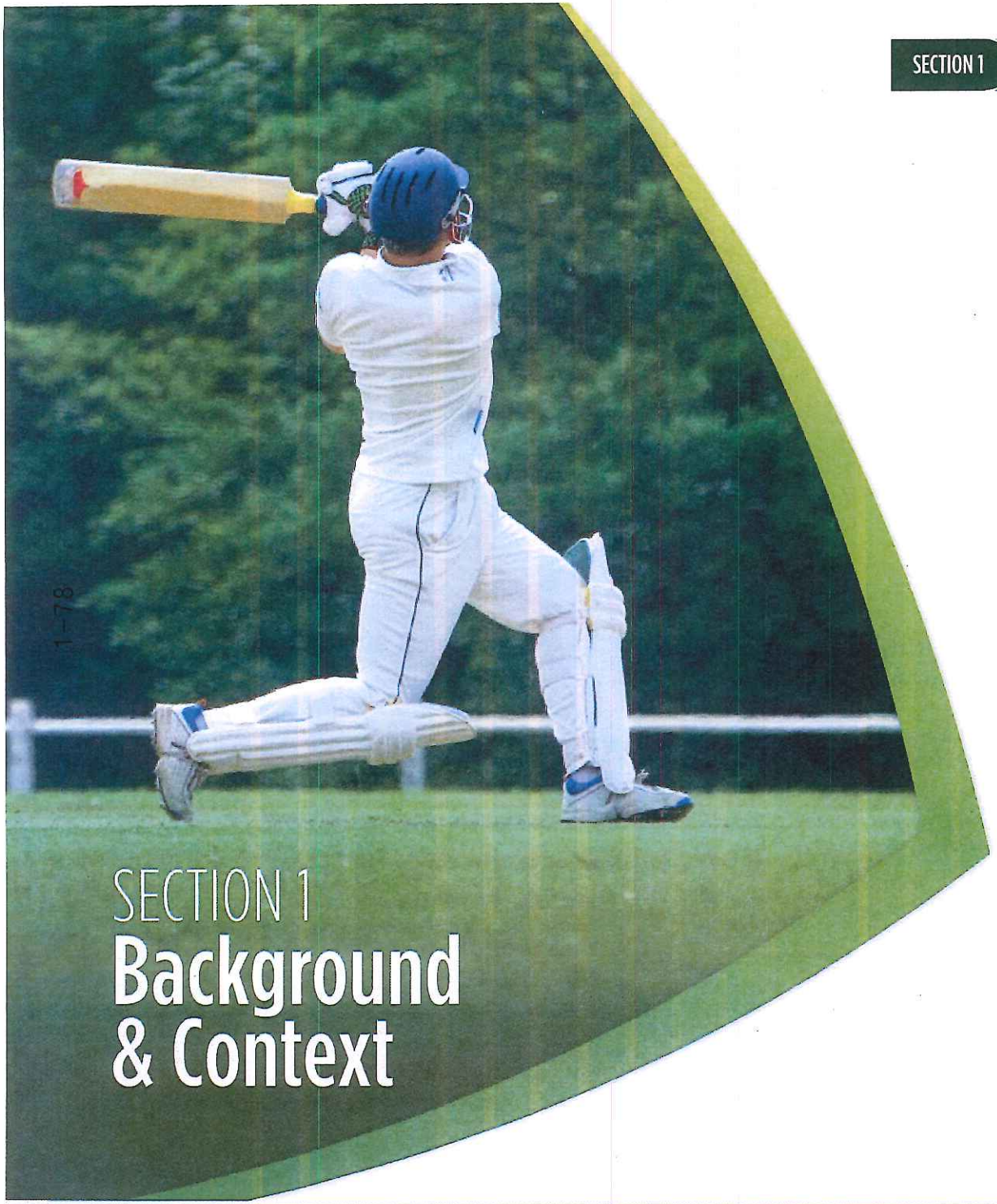
Cricket in Australia has not previously seen or developed a cohesive set of national guidelines for venues that provide for community level cricket. This is a document of considerable significance and one that aims to align national cricket facility and infrastructure planning and development objectives with our government, community and industry partners.

Through an extensive national consultation process and a Project Steering Group consisting of state and national cricket partners, State and Local Government representatives, designers and product industry personnel, we have now developed the most comprehensive cricket facility resource ever produced in Australia. An achievement we are very proud of and a resource that we remain committed to developing and continuing to improve.

Use of the Guidelines will assist the national cricket community, government, land owners, schools, technical and planning consultants and industry suppliers to access relevant information. Further, it will ensure an agreed, adopted and consistent approach to facility planning, design, development and management is achieved.

The Guidelines are applicable to all levels of community cricket and will benefit the 5,000 plus associated venues that support cricket activities every week and help local communities to create quality cricket facilities.

JAMES SUTHERLAND
Chief Executive Officer



SECTION 1
Background & Context

INTRODUCTION

Cricket Australia's Community Cricket Facility Guidelines ('the Guidelines') aim to provide a consolidated resource of community cricket facility planning, development, management and maintenance information for use by community, government and national cricket industry partners and stakeholders.

They have been produced by Cricket Australia with support from *insideEDGE* Sport and Leisure Planning, and a Project Steering Group consisting of state and national cricket partners, state and local government representatives, designers and product industry professionals.

The Guidelines represent an important part of Cricket Australia's investment into community cricket, with facilities being recognised as one of the key pillars in supporting the growth of cricket participation and improving participant and fan experiences.

Information provided within the Guidelines represent a national view of community cricket facilities across the country. While research and care has been taken in their preparation, there are likely to be state or local considerations that are unique to specific areas. In all instances where unique considerations are relevant, these and other associated local conditions, rules or regulations should be referenced prior to embarking on any facility related project.

The Guidelines have been developed in three sections:

SECTION 1
Background and context

Section 1 provides an introduction to the Guidelines, relevant background and 'how to use' information and context. It also provides a summary of the national community cricket context and identifies where the Guidelines connect strategically with cricket participation programs and with national cricket facility planning and funding.

SECTION 2
Technical information

Section 2 identifies a series of **Guidance Notes** that provide detailed information on facility provision and associated recommendations, technical requirements and planning considerations. Topics covered in Section 2 include:

GUIDANCE NOTE 01
Pitches and playing fields

GUIDANCE NOTE 02
Outdoor training facilities

GUIDANCE NOTE 03
Clubrooms and change facilities

GUIDANCE NOTE 04
Floodlighting

GUIDANCE NOTE 05
Artificial turf for cricket

GUIDANCE NOTE 06
Site and supporting infrastructure

GUIDANCE NOTE 07
Indoor cricket

SECTION 3
Project delivery tools

Section 3 provides a range of planning and delivery tools, checklists and information aimed to assist stakeholders to plan and deliver their cricket facility projects. Access to information on project and lifecycle costs, hierarchy provisions, case studies, further technical resources and State and Territory contacts are available in this section.

HOW TO USE THE GUIDELINES

The Guidelines are intended to support stakeholders to appropriately scope, plan, design, budget, deliver improved cricket facility projects and outcomes across Australia.

Cricket Australia's recommendations that make reference to current standards, as well as provision for best practice and should not be viewed by stakeholders as 'essential requirements' to be delivered across all existing venues.

It will be important for the Guidelines to also be read and implemented in conjunction with other existing sporting code guidelines and associated standards and requirements to ensure facilities are maximised for shared community and/or multi-use.

Within each **Guidance Note** provided in Section 2, there are technical tips that will support users with specific and recurring issues and challenges that have been identified by consultants, government partners and by the national cricket community. Look out for these tips as they could save you a lot of time, energy and money!

WHY THEY ARE IMPORTANT TO YOU

Cricket Australia recommends that all stakeholders involved in the planning, management, maintenance and use of cricket facilities refer to these Guidelines when initiating new or revisiting old projects. They are provided for State and Territory Cricket Associations, Clubs and Associations, Local Councils, State Government departments, planners, consultants, industry suppliers, developers, schools and other peak sporting bodies.

A core role of the Guidelines is to educate stakeholders involved in the specific elements that improve participant experiences in cricket and to bridge the knowledge gap between stakeholders and their understanding of the sport and its requirements.

STAKEHOLDER	HOW YOU CAN USE THE GUIDELINES
STATE AND TERRITORY CRICKET ASSOCIATIONS	▪ Communicate Cricket's priorities to local stakeholders ▪ Advise Clubs on preferred levels and types of provision ▪ Assist local stakeholders to plan and budget for projects
COMMUNITY CRICKET CLUBS AND ASSOCIATIONS	▪ Understand hierarchy levels and venue expectations ▪ Understand the role of all stakeholders in project planning ▪ Plan and budget for local projects and improvements
LOCAL GOVERNMENT	▪ Inform local policy, strategy and municipal planning ▪ Guide venue, site and master planning projects ▪ Inform technical design and specification development ▪ Inform annual budget and capital works processes
STATE GOVERNMENT	▪ Assist in prioritising projects and funding applications ▪ Identify opportunities for joint sport and community outcomes
TECHNICAL CONSULTANTS AND INDUSTRY SUPPLIERS	▪ Inform project planning, budgeting and management ▪ Inform technical design and expected project outcomes ▪ Understand cricket specific and technical requirements

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The Guidelines have been developed in order to provide direction for the development of new facilities and/or elements of those being considered for refurbishment, redevelopment or improvement.

ACCESSING THE GUIDELINES

The Guidelines are free to access and will be hosted on Cricket Australia's Club Assist website at *community.cricket.com.au/facilities*

Individual Guideline sections and associated Guidance Notes and project delivery tools can be viewed, downloaded, saved and printed for your convenience.

Access to Cricket Australia project funding information, guidelines and State and Territory related grant programs can also be accessed via the Cricket Australia Club Assist website.

ONGOING IMPROVEMENT

As cricket and facilities continue to evolve, innovate and improve, so too will these Guidelines.

Cricket Australia recognise that not everything can be included within a single set of Guidelines. However, Cricket Australia is committed to including additional Guidance Notes and Case Studies that our stakeholders request more information on. If there is an element or level of detail that is not included within the Guidelines, please let Cricket Australia know and we will continue to add more information and best advice over time.

ASSUMPTIONS

The Guidelines contain comments and information of a general nature only and are not provided as a substitute for professional advice. Site specific research, technical assessment and local interpretation and implementation of the Guidelines will also be required.

The Marylebone Cricket Club (MCC) in England has been the custodian of the Laws of Cricket since the Club's formation in 1787. While The Laws of Cricket provide the core rules for a game of cricket, almost every match played around the world has competition specific *Playing Conditions* which provide amendments to the laws to suit a particular match.

These *Playing Conditions* allow cricketers to play a variety of match formats and almost every cricket association has their own localised playing conditions or regulations, which are to be adhered to and accommodated into venue planning and development where appropriate.

PROJECT STEERING GROUP

The Community Cricket Facility Guidelines have been developed using a range of industry information sources and resources (refer following section) and have received significant input from cricket, government and industry stakeholders.

Special thanks is extended to insideEDGE Sport and Leisure Planning, in particular Michael Bodman and Adrian Wilson for researching, coordinating and preparing the Guidelines, with support from a committed Project Steering Group of individuals and organisations.

Project Steering Group included:

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CONTENT SUPPORT PARTNERS

Significant contributions from the following organisations and individuals are gratefully acknowledged and have helped to shape the content and development of the Guidelines:

- JMA Architects
- Musco Lighting
- Martin Butcher Lighting Design
- Sporteng
- Cricket Victoria Local Government Consultant
- Kings Sports
- Sports Surfaces Australia (SSA)

KEY CONTRIBUTORS

Information, advice and local case study information was also supplied by the following organisations and has been helpful in providing a national approach to the Guidelines:

- NT Cricket
- Cricket Queensland
- Cricket Tasmania
- Western Australia Cricket Association
- NSW Government Office of Sport
- QLD Department of National Parks, Recreation, Sport & Racing
- WA Department of Sports and Recreation
- Cessnock City Council (NSW)
- Blacktown City Council (NSW)
- City of Canada Bay (NSW)
- City of Casey (VIC)
- City of Hobsons Bay (VIC)
- City of Yarra (VIC)
- Bankstown District Cricket Club (NSW)
- Donvale Cricket Club (VIC)
- Mount Barker Cricket Club (SA)
- Sydney Cricket Club (NSW)
- Werribee Cricket Club (VIC)
- City Of Melbourne (VIC)
- Onkaparinga City Council (SA)
- Northern Areas Council (SA)

OTHER SUPPORTERS

Through the early consultation phases of research and Guideline preparation, many government and community stakeholders attended project workshops and forums. Thank you to the 100 plus organisations for your attendance and contribution.

Support from Parks and Leisure Australia in the distribution of project information and in providing numerous opportunities to present Guidelines and seek feedback from state and national members has also been invaluable. A peer review of Draft Guidelines by Parks and Leisure Australia representatives has also assisted to refine the guidelines content.

A number of contributors have provided photographs and images for use within the Guidelines. Special thanks is provided to all of those that have taken photographs and allowed us to reproduce these images within the Guidelines. Where possible, individual images have been recognised throughout the Guidelines.

The following range of documents, sources and reference material has been reviewed in the preparation of the Guidelines. Information sources listed below also provide additional technical and support information that may assist in planning and delivering future projects.

Australian Standards

Many elements of cricket facility and infrastructure provision are guided by Australian Standards, including lighting, fencing, building design, construction and use of materials. Reference is made throughout these Guidelines to specific Australian Standards that should be referenced and utilised by stakeholders. *More information on Australian Standards is available via www.standards.org.au*

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. *More information on the Building Code of Australia is available via www.abcb.gov.au*

WA Sports Dimensions Guide

This guide has been prepared by the Department of Sport and Recreation and provides general information regarding the design and marking out of a range of sporting activities played in Western Australia. In the context of these Guidelines, information has been reviewed for both indoor and outdoor cricket. *More information on the Sports Dimensions Guide is available via www.dsr.wa.gov.au*

Sport and Recreation Victoria

Sport and Recreation Victoria which sits in the Department of Health and Human Services provides a number of guides and resources designed to assist the community sporting sector to plan and deliver sporting facility projects. Particular references within the Guidelines are made to the *Community Sporting Facility Lighting Guide* and *Universal Design* principles. *More information is available via www.dtpli.vic.gov.au/grants/find-a-grant/community-facility-funding-program*

England Cricket Board (ECB) Indoor Cricket Facilities: Design Guidelines

The ECB have published a significant resource on indoor cricket playing facilities that are suitable for local to international standard usage. References to relevant material for indoor cricket facilities and amenities have been made within the Guidelines. *More information on the ECB Indoor Cricket Facilities: Design Guidelines is available via www.ecb.co.uk*

AFL Preferred Facility Guidelines

As a significant national venue partner, review of the *AFL Preferred Facility Guidelines (2012)* has been undertaken to identify key areas of alignment between Cricket and Australian Rules Football. Where appropriate, references to facility standards that meet both Cricket and Australian Rules Football have been accommodated within the Guidelines. *More information on the AFL Preferred Facility Guidelines is available via www.aflcommunityclub.com.au*

NRL Preferred Facility Guidelines

As a co-use of many community cricket facilities across the country, a review of the *NRL Preferred Facility Guidelines for Grassroots Rugby League (2014)* has been undertaken to identify key areas of potential alignment between Cricket and Rugby League. Where appropriate, references to facility standards that meet both Cricket and Rugby League have been accommodated within the Guidelines. *More information on the NRL Preferred Facility Guidelines is available via www.playnrl.com.au*

Basic Guide to Turf Cricket Pitch Preparation

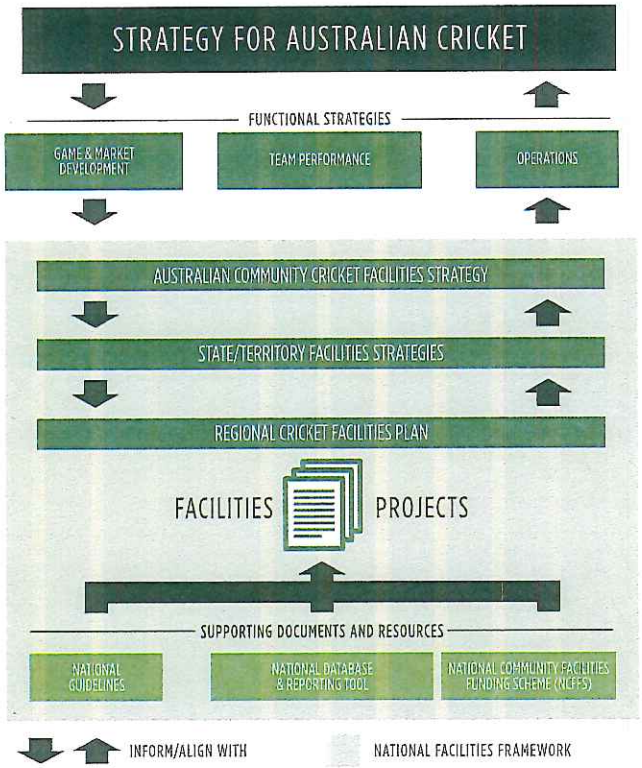
John Shannon's *Basic Guide to Turf Cricket Pitch Preparation (2010)* document provides a training booklet to assist club curators or people with little or no experience in turf cricket pitch preparation and maintenance to prepare a suitable playing surface and maintain it to relevant competition playing standards. *More information on the Basic Guide to Turf Cricket Pitch Preparation is available via Club Assist Facilities and Funding community.cricket.com.au*

Stakeholder Contributions and Case Studies

A number of local councils, clubs and other organisations have provided specific information and case studies that have been reviewed, considered and represented within the Guidelines. There are too many in number to identify individually, but best practice examples and case studies have been highlighted in relevant Sections and Guidance Notes throughout the Guidelines.

The following definitions are provided for generic terms referenced throughout the Guidelines.

TERM	DEFINITION
ASSOCIATION	Organisation usually comprised of member clubs, responsible for organising and administering local cricket competitions
BASE	The part of a cricket pitch or practice pitch area on which the synthetic surface is applied
BUSINESS PLAN	A formal statement of club or venue 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 regarding infrastructure development and renewal.
GEOTECHNICAL ENGINEER	A Geotechnical Engineer is a specialist qualified to prepare a geotechnical report that typically reports on factors such as soil type, composition and quality, compaction and moisture levels
GREENFIELD SITE	An undeveloped site earmarked and suitable for future 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
INDOOR CRICKET	Refers to the sport and activity of competitive cricket played indoors. It has its own set of facility criteria, rules and regulations
INDOOR TRAINING	Refers to non-competition training and skill development activities participated in an indoor venue suitable for cricket practice
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 and includes the lamp, reflector and the lens
MPA	MPA is the metric unit for pressure or stress called megapascal (MPa). The term is used in concrete as the common unit for compressive strength.
PROJECT MANAGER	A suitably qualified expert who is engaged by a client (likely to be Club, Council or Association) to oversee the design and construction phases of a project
PAVEMENT	A term used to describe an asphalt or concrete pitch base
PILE	The fibre material that forms the playing surface in synthetic turf pitches and playing areas
PILE HEIGHT	Pile height refers to the length of the pile – synthetic turf pitch pile heights suitable for cricket vary from 9mm to 11mm
PITCH	The central flat strip of a cricket field that accommodates the main batting and bowling activities. Typically pitch surfaces are either natural turf or synthetic turf
STATE/TERRITORY ASSOCIATION	The peak governing body for cricket provision, development and administration within each individual State and Territory in Australia – State/Territory Associations are all affiliated with Cricket Australia
SYNTHETIC GRASS/TURF (PITCH)	Collective term applied to outdoor artificial cricket pitch surfaces
SYNTHETIC GRASS/TURF (FIELD)	Collective term applied to outdoor synthetic grass products jointly approved for use by Cricket Australia and the Australian Football League for use on cricket ground infields and outfields
TURF	Natural grass cricket pitch surface that is specifically prepared and manicured by specialist curators
UNIFORMITY	This is a measure of light of a cricket ground. It is important as it measures the difference (and consistency) between bright and dark areas



NATIONAL FACILITIES FRAMEWORK

There are a number of elements that fit together to constitute the Framework for Australian Cricket facilities. These elements are all visually represented in the diagram above.

The framework aligns with, supports, and where appropriate helps inform Cricket's functional strategies and the Strategy for Australian Cricket.

The Guidelines are one of three supporting documents and resources that will be will be used to support the entire framework and will make a significant contribution towards leading and guiding cricket facility planning, development and management into the future.

These resources will also contribute significantly to growing investment in facility development and prioritising Cricket's resources across the national facility landscape. In addition they will identify key opportunities through facilities to increase participation and inspire the next generation of players, fans and volunteers.

The preparation of the Framework for Australian Cricket facilities and the *Community Cricket Facility Guidelines* will be **supported by the National Community Facilities Funding Scheme (NCFFS).** This is the existing national funding mechanism for grassroots cricket facilities.

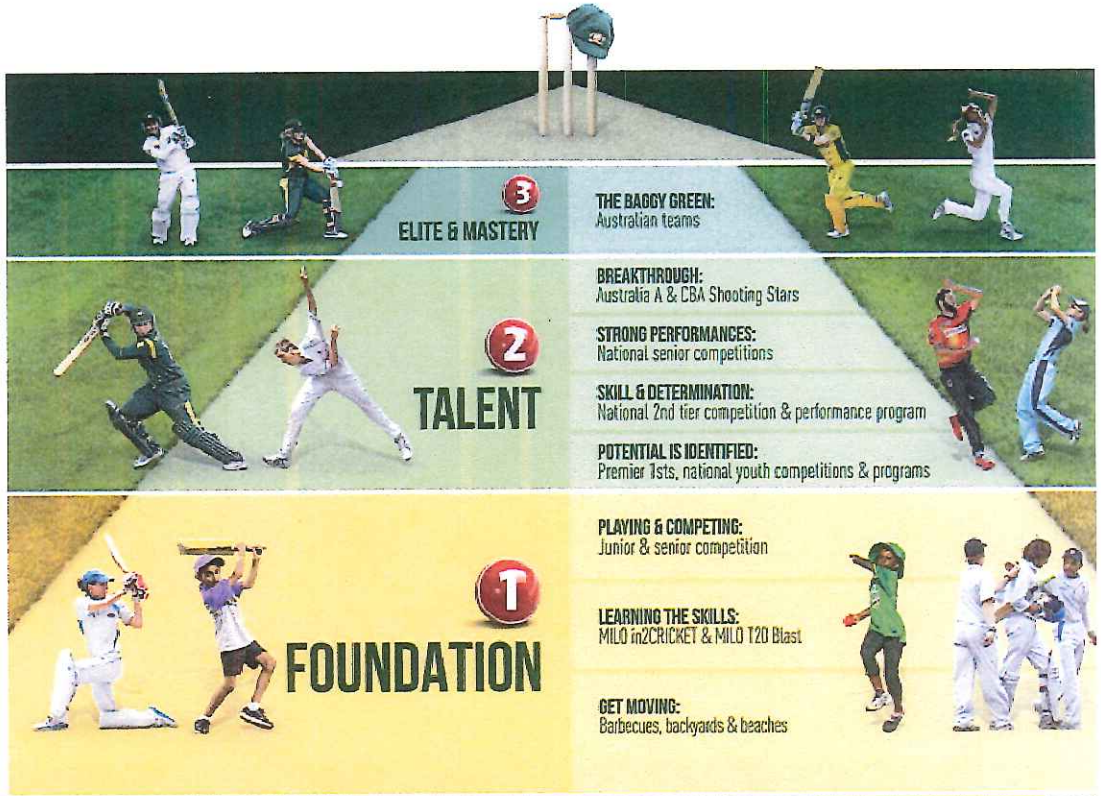
COMMUNITY CRICKET PARTICIPATION

Cricket Australia's *Well Played* policy document identifies that cricket today is one of the most popular and highly participated sports in Australia.

Cricket has significant appeal for a range of participants and its variety of game formats ensures attraction of a diversity of participants.

Cricket Australia's **Play Cricket website** *www.playcricket.com.au* provides a wealth of information about how and where you can play all forms of cricket, including learning the skills, junior cricket and senior cricket.

The following game formats help to define the pathways for community cricket and in turn, the venue requirements to facilitate opportunities for cricket participation.



HIERARCHY OVERVIEW

Information presented within these Guidelines provides the preferred levels of facility and amenity provision for community level cricket.

The Cricket Facility Hierarchy model defines community cricket facilities, their purpose and core cricket uses for Premier/Regional and Club level cricket. It also references the linkage that community cricket and associated facilities have with Domestic/ First Class and International level facilities.

Within each level of the hierarchy, facility and amenity provision and the capacity to reach or exceed the desired levels will be influenced by the type and levels of play, as well as by local competition or Association requirements and rules. Local Government planning schemes, policies, risk management, occupancy agreements and associated site influences (e.g. ground sizes, neighbouring properties) will all play a role in being able to achieve the recommended facility and amenity levels.

Section 3 of the Guidelines represents a more detailed breakdown of Cricket's preferred **venue, pitch, training, site facilities and amenity** levels of provision in order to facilitate cricket training and matches at each hierarchy level.

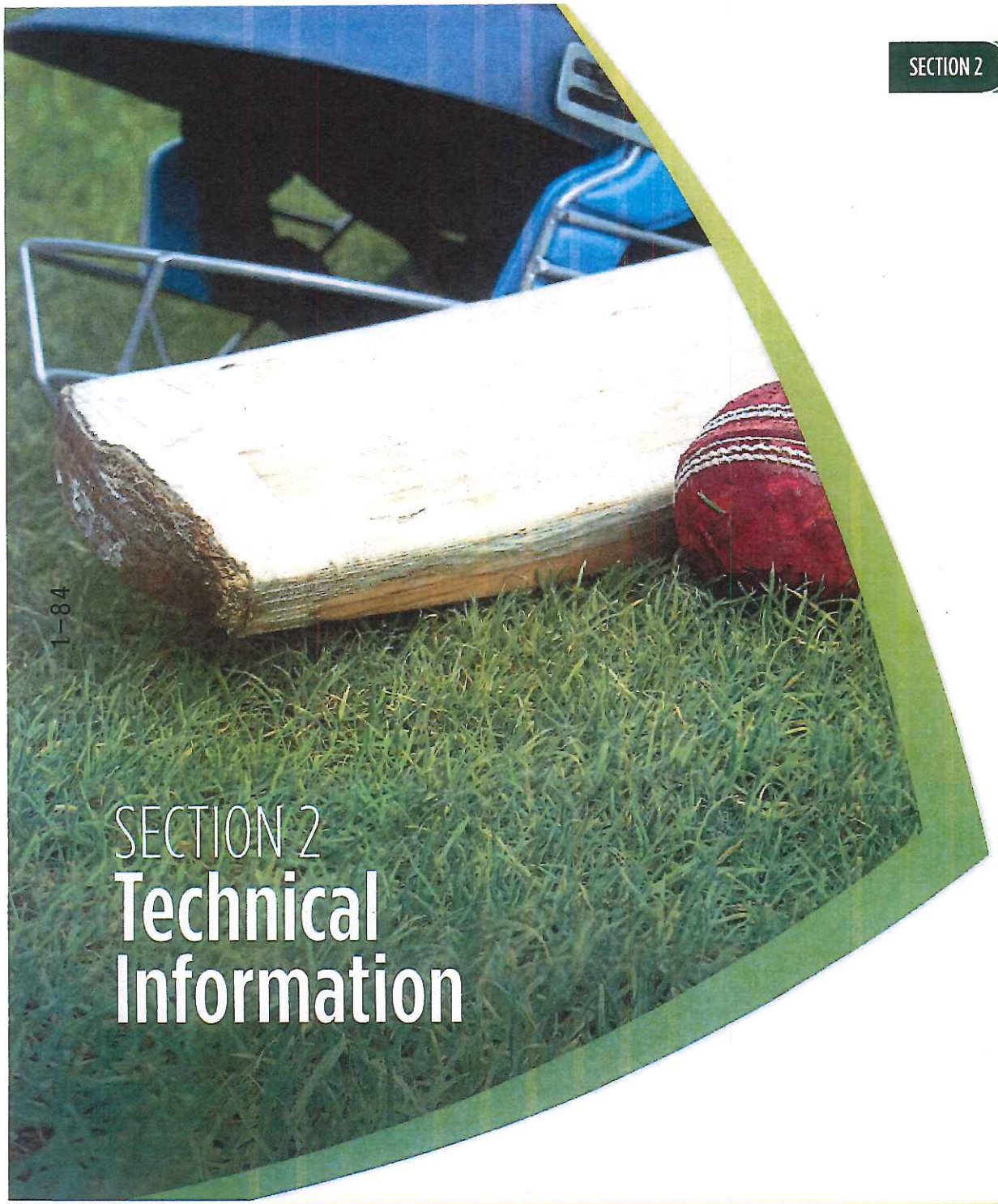
Williamstown Cricket Ground
Image courtesy of insideEDGE Sport and Leisure Planning

HIERARCHY MODEL

The following table provides an overview of the Cricket Facility Hierarchy including facility levels, their purpose, core cricket, and other compatible uses.

The Guidelines refer specifically to facilities at Premier/Regional, Club (Home) and Club (Satellite) levels – specifically those below the red line.

HIERARCHY LEVEL	FACILITY PURPOSE	CORE CRICKET USE	OTHER COMPATIBLE USES
INTERNATIONAL	Host matches and engage fans of domestic and international training, matches, series and major events during the Australian cricket season and deliver a world class experience for cricketers, staff and fans.	International, Domestic and State level fixtures, events and high performance training.	Squad and international training and camps, State/Territory Administration Headquarters.
DOMESTIC/FIRST CLASS	Provide a home, secondary home or training centre for State/Territory teams (away from International grounds) and a pathway venue for state teams and talent squads.	Primary, secondary or satellite venue for Domestic teams and state squads (training and matches) and showcase venue for Australian team games for women's and underage cricket.	Squad training, camps and/or institute for cricket, Premier cricket finals venue, State and National carnival venue, coach and umpire development programs and education centre. Priority access for cricket is required.
PREMIER/REGIONAL	Integrates the community cricket pathway and provides connection between Foundation and Talent pathways. Facilities service home clubs, as well as providing for the broader cricket catchment.	Home and away fixtures for Premier Cricket in each state, regional training venue for pathway squads and programs, event/carnival venue for state and regional programs and marquee venue for local competitions (e.g. finals).	Shared training venue for local community (outdoor turf pitches and possible indoor training pitches), under age Association competition venue and location for school holiday camps. Likely to be shared with a winter tenant.
CLUB (HOME)	Provide a mix of recreational and competitive cricket opportunities within a community club environment for local communities – clubs and venues connect with their associated turf or synthetic competition and pathway structure (for all age groups).	A club's home ground to conduct home and away fixtures for local, Association, metropolitan and country cricket in each state, local club training, facilitating school to club connectivity and providing opportunities for in2CRICKET and modified programs such as T20Blast.	Training facilities and social amenities are provided to promote social activity and community use. Shared venue with a winter tenant. Under age Association competition venue or finals venue at key sites within local Associations.
CLUB (SATELLITE)	Provides opportunities for club and school competition and social/ recreational cricket. Venues often used as secondary grounds for junior and lower senior grades.	Satellite or overflow venues away from a club's main home ground that support junior, school and senior club cricket competition (primarily match day use) and formal and informal social cricket use.	Venues typically include parks, recreation reserves and schools and often shared venues for broader community use and access. School sites also provide access to cricket opportunities through school curriculum, after school programs, school teams and for recreational use by school pupils and the local community.



SECTION 2 Technical Information

All projects no matter the size, need to be planned. The following key planning process and principles will assist to create successful project outcomes, ensure you get what you want and paid for and help to evaluate whether you achieved what you set out to achieve.

The following five staged process is Cricket Australia's recommended guide to project planning, however it is important to **evaluate your project budget through all stages of planning.** Generally 'anything is possible' if cost is not an issue!

Your project budget will ultimately guide project outcomes and what can be delivered, so don't underestimate **all costs** involved as last minute surprises will always cost more to resolve than if they were considered at the start of a project.

PROJECT PLANNING STAGES AND RECOMMENDED PLANNING TASKS

It is recommended that Local Councils and/or associated land owners are engaged through all stages of project planning and delivery to ensure a coordinated approach is achieved and any issues and challenges can be addressed collectively.

Stage 1 — Project Scoping	▪ Review the adequacy and gaps of existing facilities with your Local Council ▪ A club or venue business plan will assist to identify core club needs ▪ Stakeholder consultation will help to identify needs beyond cricket ▪ Consideration should be given to new and/or redeveloped facilities
Stage 2 — Planning & Feasibility	▪ Assess the capacity of the site and venue facilities and services ▪ Define your project and all of its elements ▪ Consult with all tenants, user groups and potential future users ▪ Test project needs and opportunities with stakeholder objectives ▪ Identify and outline project budget ▪ Identify potential project and funding partners (work with State and Territory Association)
Stage 3 — Design & Budget	▪ Consider best practice by adopting a principle based approach to design ▪ Engage design and technical professionals ▪ Create a detailed design brief and technical specifications ▪ Identify clear project outcomes and objectives ▪ Verify other non-cricket user and sporting code requirements in multi-use facility ▪ Prepare detailed designs and associated project and lifecycle costs ▪ Seek necessary planning, building and funding approvals and permits
Stage 4 — Construction	▪ Appoint a project manager to oversee procurement and delivery ▪ Seek competitive prices from contractors based on agreed project specification ▪ Finalise your project budget and appoint contractors ▪ Oversee the construction process – ask questions if you are unsure as to what is being developed and delivered
Stage 5 — Management	▪ Project hand-over and commissioning ▪ Promote project to club, cricket and community stakeholders ▪ Finalise any funding acquittals ▪ Allocate venue management and maintenance budget and monitor its implementation ▪ Finalise venue Management Plan ▪ Enjoy your new facility!

BEFORE YOU START – CONSULT YOUR LAND OWNER!

The most critical element to project planning starts before your idea progresses very far. Sharing your facility ideas, projects or proposals and seeking approval from your Local Council and/or land owner **before you do anything else** is essential for projects of any scale.

It can be assumed that all cricket facilities are provided on or adjacent to land and property that comes under Local Council or State/Territory Government planning controls. It is imperative that initial consultation with Local Government Authorities is undertaken before your project progresses too far.

Consulting at this point with your Local Council can help you to avoid potential project delays, costly errors and ensure that projects meet all statutory requirements and planning approval processes. It may also open up additional opportunities and potential funding avenues that you may not have considered.

Consultation with Council will also assist to commence the process of capital works budget planning and allocation.

STAGE 1 Project scoping

It is important during the project scoping phase to not only identify what it is you want, but to also understand the 'project need' and how it will be addressed. Your project scope needs to clearly define the project, what it's likely to cost, how and by who will the infrastructure be used and what club, cricket and community needs will be satisfied as a result.

Project scoping and early planning is best underpinned by a project, venue or club business plan that clearly articulates project needs, scope and requirements.

STAGE 2 Planning and feasibility

Careful planning of your project is critical to achieving success and will require a focus on understanding the capacity and suitability of your site and/or existing facilities to accommodate further enhancement. No two facilities are the same, so individual planning is an essential requirement.

Engagement with all tenant clubs, existing user groups and potential future users is an important element of this stage, and both cricket and specific requirements of other compatible activities should be investigated.

Project needs and opportunities should also be tested at this stage and assessed against stakeholder objectives and known available budgets. It is likely that project parameters may need to change or evolve at this point, so be prepared to be flexible to ensure your project can move to the next stage and attract the required funding to progress.

Identification of the likely facility management model also needs to be considered at this point in project planning to help the design and budget stage of project development.

STAGE 3 Design and budget

If your project has progressed to this stage, you should by now have a very clear picture of what you want to build, renovate or redevelop. Now it's time to engage design consultants, engineers and/or architects, refine project objectives, prepare a design brief and start the design and development process.

Adopting a principle based approach during the design phase such as incorporating Universal Design principles will help facilitate best practice design discussions and outcomes.

Your budget will also change at this point. The more detailed the design elements, the greater the range of considerations to be made. In most instances you will need professional designs and associated drawings in order to secure Local Council approvals, support and funding.

In conjunction with design related considerations, management, capital replacement and maintenance costs associated with new and proposed infrastructure will be important to inform design discussions and outputs.

STAGE 4 Construction

The construction phase will follow the design stage and planning approvals and also includes contractor procurement. Securing quotations or tender responses for works should be based on an agreed design and scope of works to ensure you can compare quotes. Your contractor procurement method will be influenced by the scale of project. Your budget is likely to change again at this stage and will be based around contractor prices.

Appointing contractors can be a challenging process and at this stage clubs may wish to appoint a project manager or work directly with their Local Council to identify and appoint contractors, as well as manage their work and adherence to the project specification through the construction process.

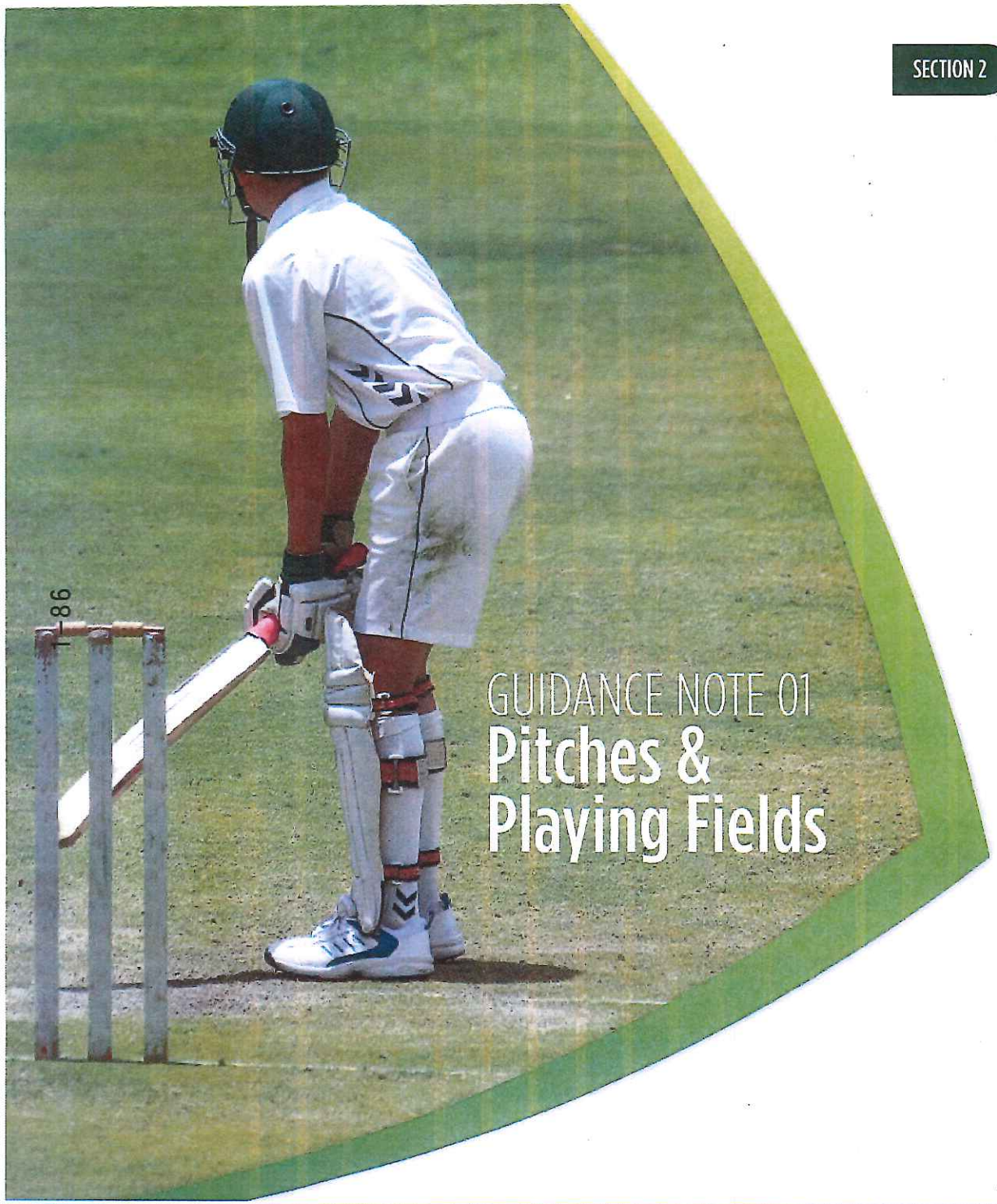
The impacts on existing users, seasonal timing and the potential displacement of clubs and games should be considered and incorporated into any construction program.

STAGE 5 Management

This includes the hand-over of your new or redeveloped facility and its commissioning. Evaluate (with your project manager and Local Council) the outcomes and identify if you have 'got what you paid for'. Communicate the completion of the project to club, cricket and community partners and stakeholders and complete any necessary paperwork, funding acquittals and 'as built drawings' to necessary organisations.

Enjoy your new facility and don't forget to continue to budget and account for ongoing management, maintenance, renewal and replacement costs to ensure you maximise the benefits of your improved facility into the future. Documenting all venue operational aspects into an agreed Management Plan will assist all stakeholders to clearly understand their roles and responsibilities over the life of the facility.

Endeavour Park, Cairns (QLD)
Image courtesy of insideEDGE Sport and Leisure Planning



GUIDANCE NOTE 01
Pitches & Playing Fields

INTRODUCTION

Cricket playing fields and pitches are diverse across Australia and are fundamental to participating in the game of cricket. It is critical they are provided to the best quality and standard as possible and maximise the use, enjoyment and experience of players at all levels.

This Guidance Note provides information on recommended cricket pitch and playing field dimensions, boundary lengths and sizes, ground and pitch orientation and preferred playing surfaces for cricket pitches, infields and outfields.

Changing formats of the game, in particular the rise in popularity of T20 cricket has increased the demand for modified training and match day facilities to suit a diversity of uses. These changes, albeit positive for the growth of the sport, have increased the complexity of cricket field planning and development for peak sporting bodies, local government and commercial facility owners alike.

i

Information enclosed should be used when planning new grounds, measuring existing boundaries, checking compliance and installing new turf and synthetic cricket pitches.

Example of multiple north-south orientated playing field
Image courtesy of insideEDGE Sport and Leisure Planning

PLAYING FIELD AND PITCH ORIENTATION

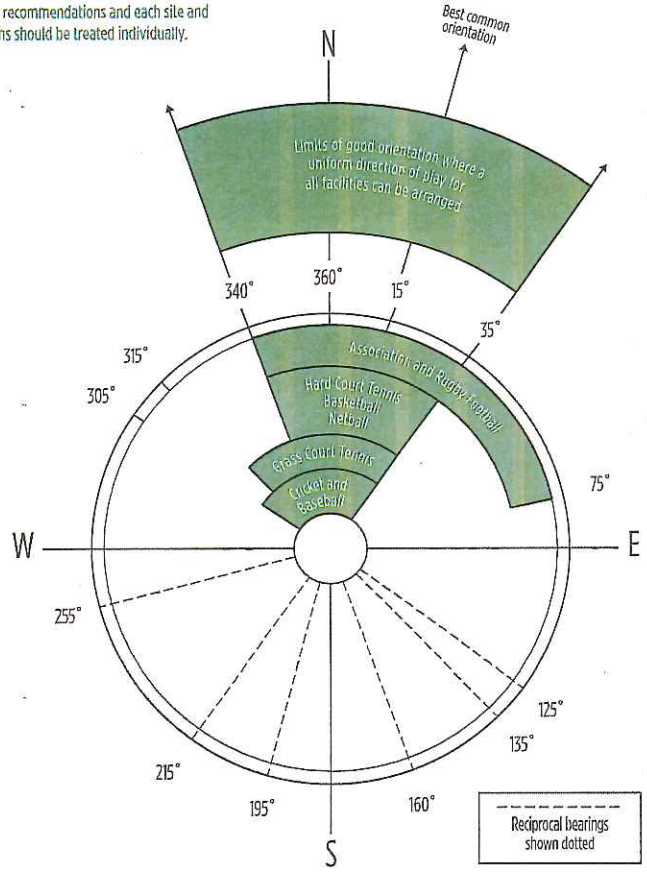
The orientation of cricket playing fields is an important planning consideration.

The time of day (early morning or late afternoon) and the time of year (winter or summer) has a bearing on optimum orientation. The aim however is to share between opposing participants the advantages and/or disadvantages of the sun's direction and natural factors such as breezes.

Limits of orientation where a uniform direction for all facilities can be arranged is depicted in the diagram below with a cricket field being between 45 degrees west of north and 35 degrees east of north.[1]

It is recommended that cricket grounds and pitches are orientated in a north-south direction to minimise the effect of a setting sun on players, with a suggested optimum orientation of 10-15 degrees east of north.

NOTE: It is important to recognise that local conditions may override these recommendations and each site and associated conditions should be treated individually.



[1] WA Sports Dimensions Guide for Playing Areas.

PLAYING FIELD DIMENSIONS

Playing field dimensions for cricket vary dependent upon their location and primary use.

When planning and measuring playing field dimensions, distances should be taken from the middle point of the centre pitch (for single pitch grounds) or from the centre of both the east and west pitches where a turf table is present (refer diagrams over page).

Cricket Australia recommends that all new or redeveloped playing fields be developed to accommodate the maximum recommended sizes for senior play, creating opportunities to reduce boundaries (via rope or line marking) for all relevant forms and formats of play.

The following diagram and supporting table outline recommended playing field dimensions for varying levels of cricket competition and associated age groups.

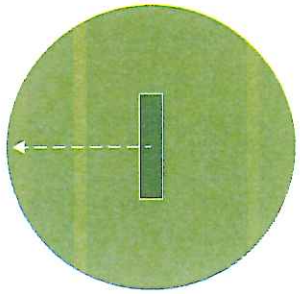
Existing playing fields currently being used for cricket are not all expected to meet these recommended dimensions. However, all new fields being planned, realigned, developed or upgraded should use the following dimensions as a way to guide the desired levels of play for each playing field.

If existing playing fields do not meet minimum preferred playing field dimensions, Cricket Australia advises that relevant Clubs, Associations, Councils and land owners work together to seek a solution to ensure that play can be facilitated while maintaining the safety of players, spectators and other site users. Protection of property including residences and vehicles should also be a consideration in decision making.

Where multiple playing fields are provided within the one playing area, a minimum 2m buffer between boundaries is recommended to reduce potential conflicts between grounds and games being conducted concurrently.

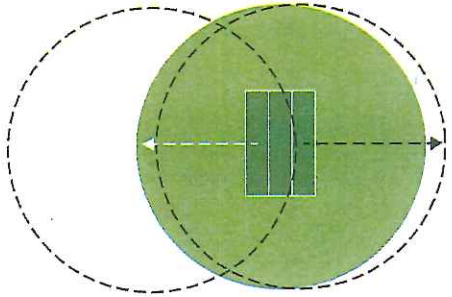
Plan for the maximum boundary size and rope off/line mark boundaries within the playing area to achieve the greatest range of cricket participation options.

The following diagrams represent how to measure playing field dimensions for both single pitches and turf tables.



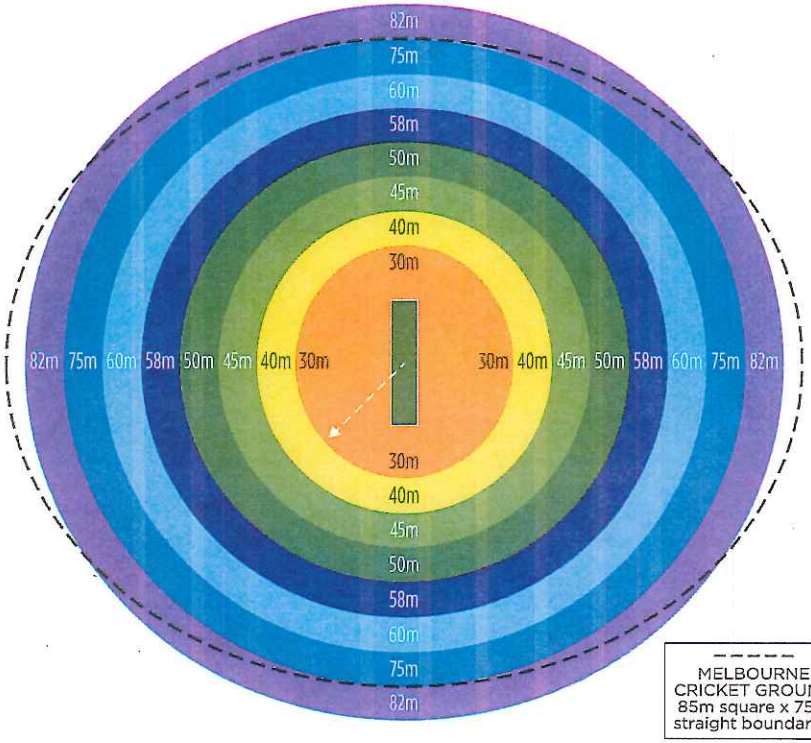
Measuring single pitch playing field dimensions

Measure boundary distance from the centre of the pitch.



Measuring multiple pitch or turf table playing field dimensions

Measure boundary distance from the centre of the pitch being used. This will require the overall playing field area to be slightly larger in order to meet minimum or recommended sizes for each pitch.



These dimensions correspond to the preferred playing field dimensions outlined in the following table

LEVEL OF COMPETITION	PREFERRED PLAYING FIELD DIMENSIONS	
	MINIMUM	RECOMMENDED
INZCRICKET (AGES 5 TO 8)	25m	30m
UNDER 10	30m	40m
UNDER 12	40m	45m
UNDER 14	45m	50m
UNDER 16	45m	55m
OPEN AGE (COMMUNITY CLUB)	50m	60m
OPEN AGE (PREMIER/REGIONAL)	65m	75m
DOMESTIC MEN'S AND UNDERAGE NATIONAL MALE EVENTS	82m	82m
DOMESTIC WOMEN'S AND UNDERAGE NATIONAL GIRLS EVENTS	58m	58m

When designing and developing ovals, grounds and park precincts, buffer distances between cricket ground boundaries should be considered in relation to other park infrastructure including car parks, roadways, neighbouring properties, trails and playgrounds. Buffer distances of between 20m to 40m from boundaries are preferable to reduce risk and increase park user and property safety.

Additional design elements including mounding, vegetation planting and fencing and their appropriateness to local conditions, settings and aesthetics should all be considered during venue design stages to assist in reducing and alleviating potential risk.

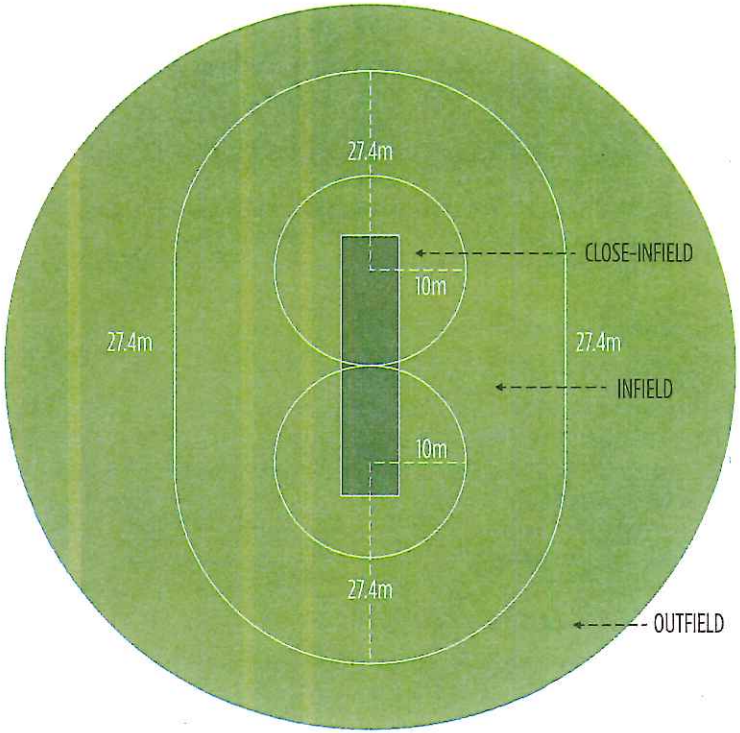
INFIELD, OUTFIELD AND CLOSE-INFIELD DIMENSIONS

Ground users and maintenance personnel should refer to their local cricket association or competition rules for local requirements or specific restrictions regarding the use of close-infield and infield markings.

A painted oval is made by drawing a semi-circle of 27.4m radius from the centre of each pitch with respect to the breadth of the pitch and joining them with lines parallel, 27.4m to the length of the pitch. This line, commonly known as the circle divides the field into an infield and outfield.

Two circles of radius no closer than 10m centred from the middle stump at each end of pitch and often marked by dots, define the close-infield. The infield, outfield and the close-infield are used to enforce field restrictions and/or safety zones for some game formats and age groups. Distances are variable and Local Cricket Associations or competition administrators may provide alternative distances within their local rules.

Melbourne Cricket Ground



CRICKET PITCH DIMENSIONS

The following cricket pitch dimensions identify the recommended sizes for community cricket pitches.

Turf cricket pitches

The dimensions of a turf pitch are **20.12m long (from stump to stump), plus a minimum of 1.22m behind the stumps** to accommodate the return crease and bowler approach area. The width of a turf pitch is **3.05m wide.** The overall dimensions of a turf table will vary according to the level of cricket competition being played.

Synthetic cricket pitches

The dimensions of a synthetic cricket pitch should be in the range of **25.0m to 28.0m long and 2.4m to 2.8m wide.** Providing a pitch of adequate width is particularly important for junior development (promotes greater enjoyment if juniors are able to land the ball on the pitch) and also encourages the art of spin bowling with players able to pitch the ball wide on the pitch and spin it into or away from the batter.

**in2Cricket, T20 Blast and modified pitches

in2Cricket or other modified game pitches can be flexible in surface, including synthetic (permanent or roll out surfaces), concrete pitches or mown areas of ground outfields.

At venues where only cricket is played, plan for the maximum size for a synthetic cricket pitch being 2.8m wide x 28m long or for turf venues provide the maximum number of turf pitches for the relevant hierarchy and level of play.

LEVEL OF COMPETITION	PREFERRED PITCH TYPE AND DIMENSIONS	
	PITCH TYPE	RECOMMENDED
IN2CRICKET (AGES 5 TO 8)	Flexible**	To suit ability 13m to 16m x 2.4m – 2.8m
T20 BLAST (AGES 8 TO 12)	Flexible**	18m x 2.4m - 2.8m
UNDER 10	Synthetic	25m - 28m x 2.4m - 2.8m
UNDER 12	Synthetic	25m - 28m x 2.4m - 2.8m
UNDER 14	Synthetic	25m - 28m x 2.4m - 2.8m
UNDER 16	Synthetic	25m - 28m x 2.4m - 2.8m
OPEN AGE (COMMUNITY CLUB) – SYNTHETIC ONLY	Synthetic	25m - 28m x 2.4m - 2.8m
OPEN AGE (COMMUNITY CLUB) – TURF ONLY	Turf	22.56m x 3.05m (5-6 pitches)
OPEN AGE (PREMIER/REGIONAL) – TURF ONLY	Turf	22.56m x 3.05m (8-10 pitches)
DOMESTIC CRICKET AND UNDERAGE NATIONAL EVENTS	Turf	22.56m x 3.05m (10 pitches)

[1] *Cricket Australia*

The bowling crease

The bowling crease is the line through the centre of the three stumps at the relevant end. It is 2.64m in length with stumps in the centre.[1]

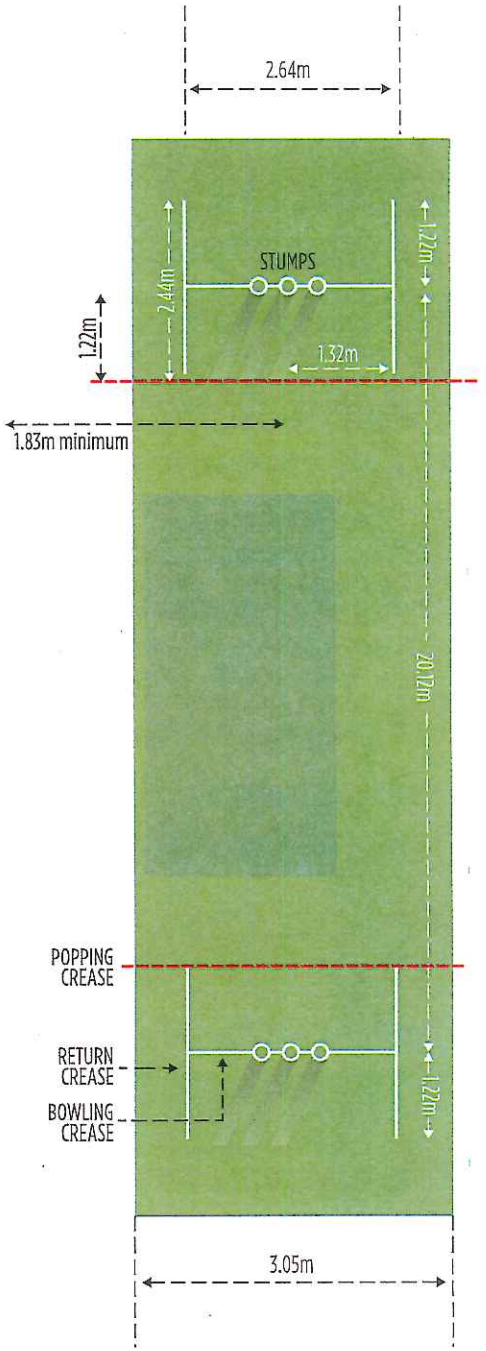
The popping crease

The popping crease is in front of and parallel to the bowling crease. It is 1.22m from the bowling crease. The popping crease is marked to a minimum of 1.83m on either side of the centre of the middle stumps and is unlimited in length.[2]

The return crease

The return crease is at right angles to the popping crease at a distance of 1.32m either side from the middle of the stumps. The return crease must extend to a minimum 2.44m behind the popping crease but may be unlimited in length.[3]

[1] *WA Sports Dimensions Guide for Playing Areas.*
[2] *WA Sports Dimensions Guide for Playing Areas.*
[3] *WA Sports Dimensions Guide for Playing Areas.*



SYNTHETIC CRICKET PITCHES

Synthetic cricket pitches comprise of a concrete pavement with a short pile height synthetic grass pitch glued to the pavement. The cricket pitch should be a rigid pavement consisting of a concrete base and underlying crushed rock sub-base designed to cater for the subgrade conditions.

The concrete surface is finished smooth (not polished) for the laying and gluing of the synthetic grass pitch. The synthetic grass surface should be a short pile height synthetic grass (9-11mm) and be laid over the total length and width in two halves with holes for the stump boxes.

Suggestions for installing a synthetic cricket pitch:

- Test existing subgrade material and design rigid pavement to cater for existing ground conditions.
- Mark out area for construction of concrete slab for size.
- Excavate area to depth of rigid pavement and dispose of excavated material.
- Laser level area.
- Supply and lay crushed rock base layer (minimum 50mm) to area and compact and laser level (note: crushed rock layer to extend a minimum of 150mm beyond the edge of the concrete pavement).
- Box off area in preparation for pouring of concrete.
- Supply and place reinforced chainmesh to area (generally centrally located within thickness of slab).
- Supply and pour 25 MPA concrete to required depth of 100mm to area and smooth finish surface for laying of synthetic cricket grass material.

Independent research conducted by Cricket Victoria in association with 11 Metropolitan Melbourne Councils concluded that **Cricket's endorsed 9mm-11mm synthetic surface type provides the most consistent playing surface.** The bounce and pace of this pitch type is more predictable and promotes skill development and player safety.

The research further found that other types of cricket pitch surfaces (e.g. those with a longer pile and/or supplied with crumbed rubber) tested have greater variation in pace and bounce which often arises from their design and also from how well they are maintained. Generally, the tested pitches other than the style of pitch endorsed by Cricket Victoria are slower and have a higher (or "trampoline" type) bounce.

Cricket Australia recommends using a 9mm-11mm synthetic pitch pile as it provides a more positive experience for all players. Due to different skill sets being required for different surfaces, if players (juniors in particular) are constantly playing on surfaces with different bounce and pace characteristics, their skill development, safety and confidence will likely be negatively affected.

Synthetic cricket pitches require regular maintenance to ensure their quality, playability and integrity is maintained. Regular sweeping is required and pitches should be water blasted every two years (minimum) to promote and refresh the synthetic pile.

Synthetic pitch pile heights (IMPORTANT): Synthetic grass cricket pitch surfaces should range from 9mm-11mm pile height without any sand or crumbed rubber filling.

SYNTHETIC CRICKET PITCH EXTENSIONS

To assist with the maintenance of synthetic cricket pitches, pitch surrounds and to provide safe and consistent run-ups for bowlers, the installation of synthetic grass surrounds to synthetic pitches could be considered.

Consideration of pitch extensions should include an assessment of the run-up conditions, identification of potential risks and hazards to players and consultation with land managers and other ground users to identify other possible impacts.

Extensions may include a 5m-10m extension at both ends of the pitch and 0.5m-2.0m extension on the sides of the pitch, which should abut the synthetic grass pitch and be anchored at the edges to avoid tripping hazards.

Any consideration of pitch extensions should be undertaken in consultation with winter sport users and as a minimum must meet AFL - Cricket Australia performance requirements for artificial turf.

Example of extended pitch area at Lilydale Recreation Reserve (VIC)

Example of extended pitch area at Montrose Reserve (VIC)

Any synthetic grass pitch surround or extension is likely to impact on winter sport usage and user groups must be consulted prior to installation. All installations must meet AFL-Cricket Australia approved performance requirements for artificial turf.

Avoid 'winged' styled synthetic pitches where possible as these present potential maintenance and trip hazards and can increase capital costs.

SYNTHETIC CRICKET PITCH COVERING

Synthetic cricket pitches may need to be covered during the winter season to both protect the surface and for the safety of winter sport participants. Two options are recommended for synthetic cricket pitch covering, both of which should be conducted with consideration given to Occupational Health and Safety and risk management issues and playability for non-cricket users. Winter use of playing fields and the compatibility of synthetic pitch covering methods with winter sporting codes needs to be considered when deciding on the most appropriate pitch covering option.

COVER METHOD	IMPACTS AND CONSIDERATIONS	TYPICAL INSTALLATION EXAMPLE
SYNTHETIC PITCH COVERS	Synthetic pitch covers can be placed over pitches during the winter season. When using synthetic pitch covers it is important to ensure that covers used meet AFL-Cricket Australia approved synthetic turf product performance and testing standards. Synthetic covers require the brooming in of rubber granules when laid and the vacuuming of them out prior to lifting them off. Storage of covers over the off-season is a key consideration. Issues can arise if these covers are stored whilst still wet as the moisture is unable to escape and can damage the cover. Achieving integration of synthetic surface and natural grass interface can be challenging. Installation and removal of synthetic pitch covers can be labour intensive and Work Health and Safety provisions should be adhered to.	
COVER WITH SOIL	This is the most common method of community level synthetic cricket pitch covering during the off season and is generally managed by the relevant Council or cricket club. Heavy duty industrial plastic should be laid over the synthetic pitch surface prior to soil being spread. Issues with using soil include the potential injury to untrained club volunteers attempting to cover/uncover cricket pitches and potential injury risk due to change in surface level around the pitch. Damage to pitch as a result of machinery/tools tearing sections of the synthetic grass are also common and an uneven and raised surface surrounding the pitch can result in either an unpredictable deviation of the ball once in play or a 'swimming pool' effect whereby rainfall is unable to escape the pitch and can impact on the ability to commence play.	

TURF CRICKET PITCHES

The overall dimensions of a turf table and number of individual pitches will vary according to the level of cricket competition being played. The Cricket Australia facility hierarchy recommends the following levels of provision.

Domestic/Underage national

10 pitches to accommodate a combination of domestic cricket matches, carnivals and regular weekly fixtures.

Premier/Regional

8-10 pitches dependent upon whether the venue is used for a range of State, Regional, Country, Metropolitan and/or Junior Association representative matches, in addition to regular weekly competition fixtures.

Community Club (home or satellite grounds)

5-6 pitches to accommodate weekly Country, Metropolitan and/or Junior Association fixtures. Turf management practices and affordability of preparation is likely to impact on the number of pitches that are able to be provided at this level of venue.

The slope of a turf pitch should not exceed 1% and follow the slope pattern of the oval. If the oval is centre sloped, the pitch square should also slope from the centre. The amount of fall should therefore not exceed 30mm across a 3.05m strip or 200mm along its length, being as flat as possible at the centre. The pitch square should be about 75mm above the level of outfield to allow for surface drainage off the pitch.[1]

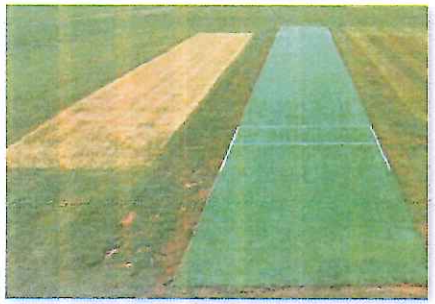
Before opting for a dual pitch arrangement, ensure communication and a healthy relationship exists between curator, club/s and other users of both turf and synthetic pitches. Dual pitch set ups are most successful where pitch management programs are strong and incidences of pitch preparation or inclement weather (where covers must remain on) do not impact too adversely on the ability to use the synthetic pitch.

DUAL TURF AND SYNTHETIC PITCHES

Dual turf and synthetic cricket pitch configurations are becoming more common in community cricket, particularly for landlocked communities with little green space to develop additional grounds.

Dual turf-synthetic pitch arrangements maximise facility usage whereby grounds previously used solely for turf competitions in the afternoon, can also be utilised for junior matches in the morning and weekday evenings. This enables not only optimum usage of the ground and a greater return on investment for landowners, but also promotes greater connectivity between junior and senior cricket and strengthens the player development pathway.

The flexibility of both turf and synthetic pitches allows use for centre pitch practice (match simulation) during mid week training sessions as well as a pre-match warm up facility for bowlers.



Dual turf and synthetic pitches

[1] *WA Sports Dimensions Guide for Playing Areas.*

NATURAL PLAYING FIELD SURFACES

Ideally, cricket playing fields should fall in all directions from the centre pitch area, but failing this, they should have a single phase slope of 1% in any convenient direction. If the oval is on very well drained soil, no slope is required.[1]

From a playability and water conservation perspective, preferred playing surfaces are generally warm season grasses. Determining the most appropriate species for local conditions and climate should involve consultation with turf management specialists and be considerate of soil conditions, drainage and irrigation requirements, usage and ground maintenance service provision levels.

Blackman Park, Lane Cove (NSW)
Image courtesy of insideEDGE Sport and Leisure Planning

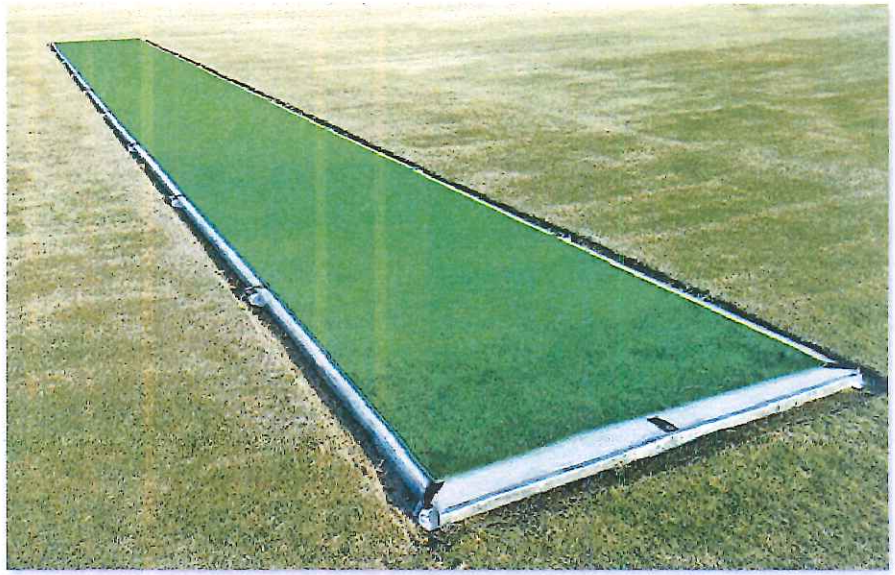
Artificial turf playing field surfaces

In 2007 the AFL and Cricket Australia endorsed the playing of community level Australian Rules Football and Cricket on synthetic surface playing fields.

The approved synthetic surface types were subjected to a series of stringent laboratory tests and criteria developed by the University of Ballarat which related to durability, joint strength, resistance to weathering, ball roll and bounce, hardness, critical fall height, traction and abrasion. The benefits of the testing and certification process are as followed:

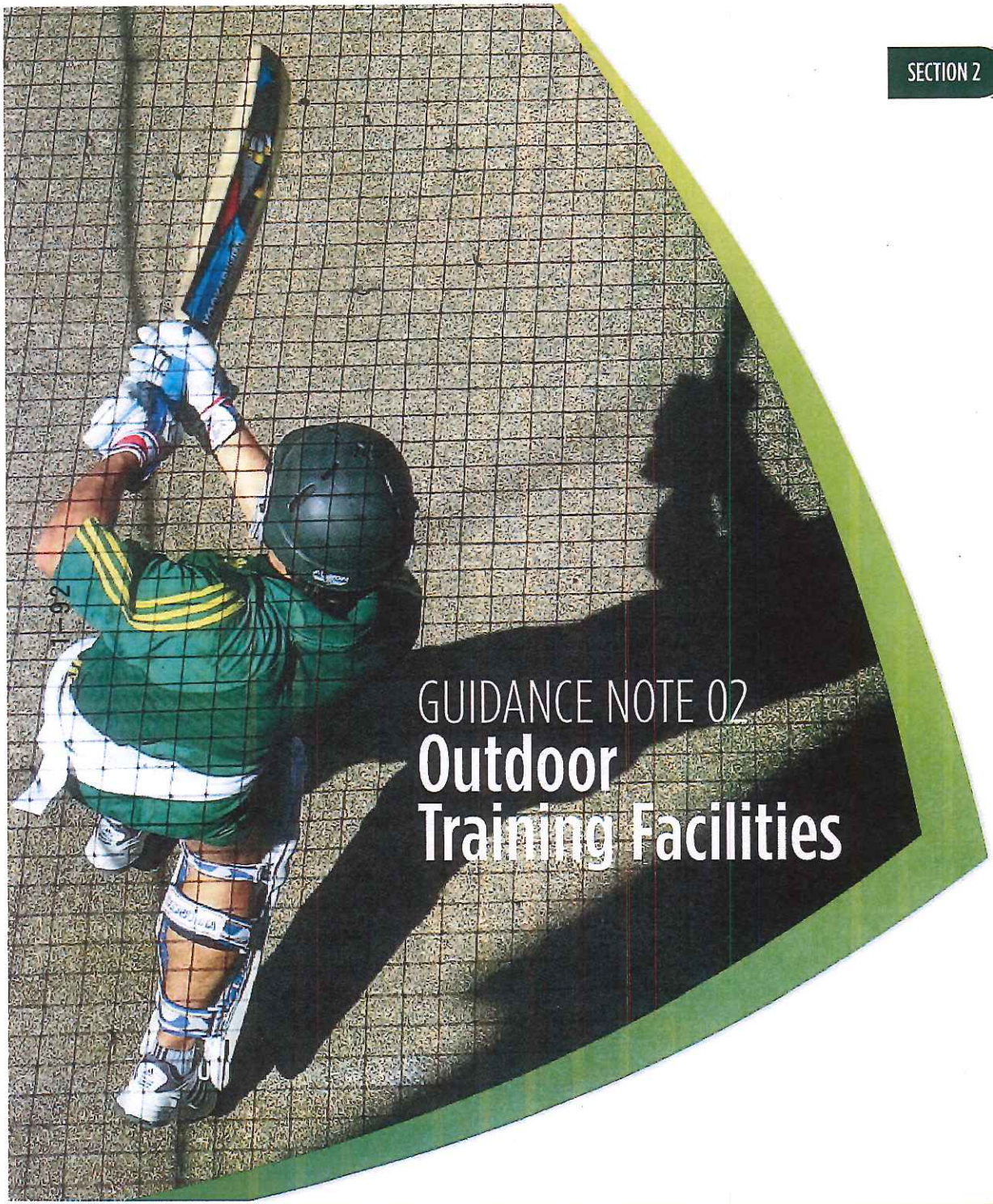
- Ensuring surfaces have the same playing characteristics as natural turf
- Ensuring quality and durability of the product
- Maximising playing comfort and safety.

Since the development of the synthetic turf standards, the AFL and Cricket Australia have established a licensing program that ensures the quality of products being manufactured from a performance and longevity perspective and that the products comply with safety and insurance requirements. For more information on synthetic surfaces for AFL/Cricket please **refer to Guidance Note: 05.**



Drop-in synthetic pitch

[1] *WA Sports Dimensions Guide for Playing Areas*



GUIDANCE NOTE 02 Outdoor Training Facilities

INTRODUCTION

Whether it be a midweek training session, pre-match warm up, lunchtime hit with school friends or an opportunity to test the new bat out with family or friends at the local cricket ground, outdoor training nets are a core facility component across all levels of cricket.

More often than not, cricket nets provide the setting for a young cricketer's first experience with the game and provide an integral platform for player skill and technique development.

Outdoor training nets comprise of both synthetic and turf cricket pitch surfaces and have historically been designed using a variety of materials and layouts. This Guidance Note outlines Cricket Australia's recommended levels of provision and design elements of outdoor training nets and should be used to help guide future cricket net development and/or redevelopment.

Australian Standards

No Australian Standard specific to cricket net design in Australia currently exists. The following standards relating to cricket net materials are available and should be adhered to when developing new or refurbishing existing cricket net facilities.

AS1725.4 – 2010: Chain link fabric fencing – Cricket net fencing enclosures

AS1725.1 – 2010: Chain link fabric fencing – Security fencing and gates – General requirements

Purpose of training nets

The primary function of cricket nets is to enable both batsmen and bowler skill and technique development, and if designed accordingly can accommodate fielding and wicket keeping training drills and activities. Cricket nets serve to stop the ball travelling long distances once hit by a batsman and provide opportunities for multiple batsmen and bowlers to train simultaneously. With the ability to be constructed in confined spaces, cricket nets save time through eliminating the need for fielders and also allow greater intensity of training, particularly when multiple pitches are used. If designed correctly they also provide a safe training environment for players and coaches alike and are ideal for junior training sessions and school playgrounds.

Training net planning principles

As depicted by the following diagram, the following planning principles should be considered when determining the most suitable location for cricket net development.

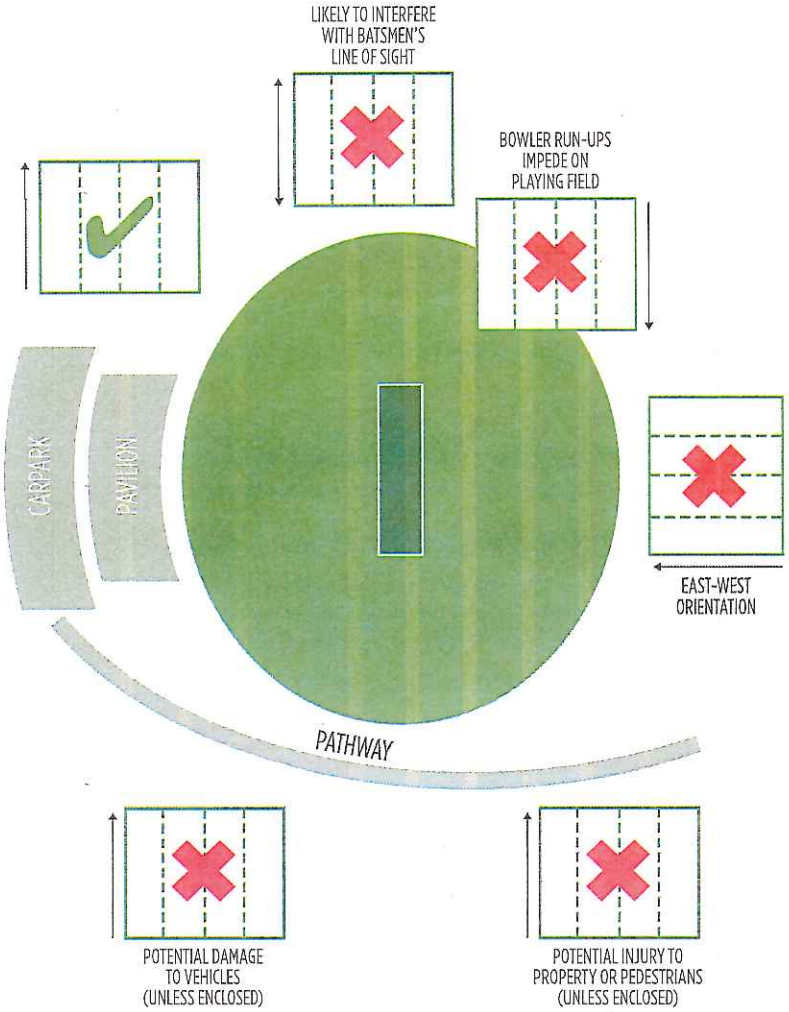
- Training nets and run-ups should be positioned off the field of play.
- Nets should not be positioned in a location likely to interfere with the match (e.g. behind the bowler's arm causing potential distractions to the batsman).
- Nets should be orientated in a north-south direction.
- Nets should be positioned in a location where there is minimal chance of injury to passers by or damage to property and/or vehicles. This planning consideration is not applicable if training nets are enclosed.
- Nets should be positioned as close to the pavilion as possible to minimise distance to transport equipment.

Training net orientation

Cricket training nets should have a north-south orientation, or a maximum of 30 degrees east or west of north (for practice pitches only). The latter requirement is particularly important for the safety of players as training is usually conducted in the later afternoon or evening when the sun is setting.

Training net location

Dependent on cricket training net design and surrounding infrastructure and open space, the most suitable location for training nets will differ. Enclosed training net facilities (discussed in more detail in the following pages) allow greater flexibility in terms of location as training activities are confined to a specific area. Non-enclosed training facilities where the ball can be hit beyond the net structure require more careful placement to minimise the risk of injury to a person or damage to property.



Information provided in this Guidance Note should not be used as a substitute for specialist design advice and where necessary, specialist engineering advice should be sought.

TRAINING NETS HIERARCHY

The cricket facility hierarchy provided in Section 1 and the venue provision summary in Section 3 identifies a range of practice pitch options for different levels of play.

The number of nets required per venue is dependent on a number of factors including:

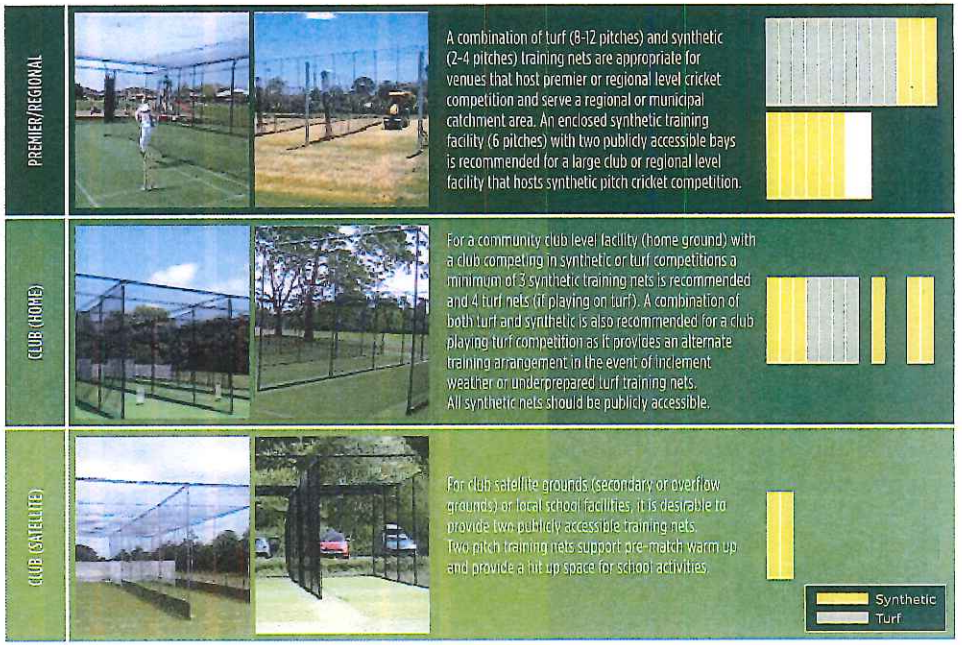
- level of competition played
- type of competition – turf or synthetic
- number of playing fields the training nets service (i.e. are there multiple grounds onsite)
- ground hierarchy classification
- size of tenant club/s and number of teams
- training schedules and weather impacts
- cost of provision and maintenance.

There is no 'one size fits all' approach to training net provision. The below and adjacent tables provide a guide as to a desired level of provision (number of pitches and surface types) for differing levels of competition and club size.

	NUMBER OF PITCHES	
HIERARCHY LEVEL	SYNTHETIC	TURF
PREMIER/REGIONAL (TURF)	2-4	8-12
CLUB HOME (TURF)	3-4	4-6
CLUB HOME (SYNTHETIC)	3-6	0
CLUB SATELLITE	2*	0

*Desirable

These minimums should be designed and developed with the potential to expand net structures and pitches as needs grow.



TRAINING NET DESIGN

The following pages provide several recommended design options, standards and tips when developing new or refurbishing existing cricket nets.

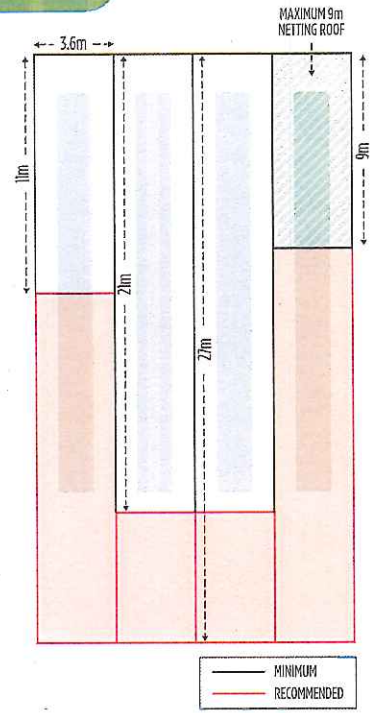
The below recommendations should be read in conjunction with cricket net design options and used to guide future cricket net facility development. Training net designs should be treated on a site-by-site and needs basis, with consideration given to the level of use, intended function (e.g. multi-purpose enclosure or cricket specific), available open space and relationships with surrounding infrastructure. Four key guiding design principles to consider when planning cricket nets include:

Safety – ensure the nets and surrounds are safe for users, passers by and surrounding property.

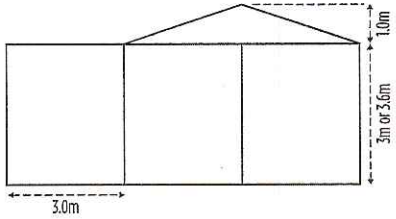
Compliance – ensure practice net design or net materials meet recommended standards.

Accessibility – ensure that cricket nets are accessible for all users.

Game development – ensure cricket net design promotes player skill and overall game development.



An example of minimum and recommended dimensions for a standard cricket net facility.



An example of a side profile of a standard pitched roof cricket net facility and heights as specified in AS1725.4 – 2010.

AS1725.4 – 2010: Chain link fabric fencing – Cricket net fencing enclosures provides the Australian Standard for fencing of cricket net enclosures, including use of materials, design footings and installation requirements.

For occupational health and safety measures, it is a requirement that the dividing (centre) net within all multi bay constructions be of minimum length of 21m for the protection of bowlers in adjacent nets. Peripheral nets require a minimum side fencing length of 11m. However it is recommended that all nets have a minimum 21m dividing fence and a desirable length of 27m to allow for extended bowler run-ups and bowler protection.

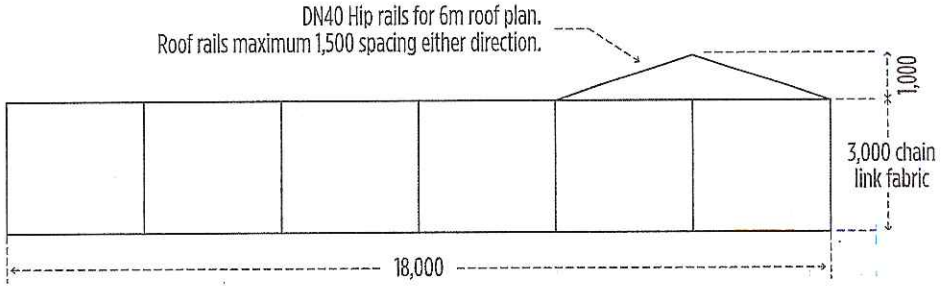
Cricket training net development may require a building or planning permit. Consult with your Local Council first to understand if there are any specific permit requirements or local planning conditions in place.

The adjacent image provides an example of the Australian Standard 9m netting roof length. It also demonstrates a design option for minimising the impacts of errant balls travelling over the roof of the net and damaging neighbouring property and/or passers by.

Dendy Park, Brighton (VIC)
Image courtesy of insideEDGE Sport and Leisure Planning

The adjacent image provides an example of a fully enclosed and roofed training net facility with ball control measures in place to prevent balls exiting the practice area into neighbouring parkland.

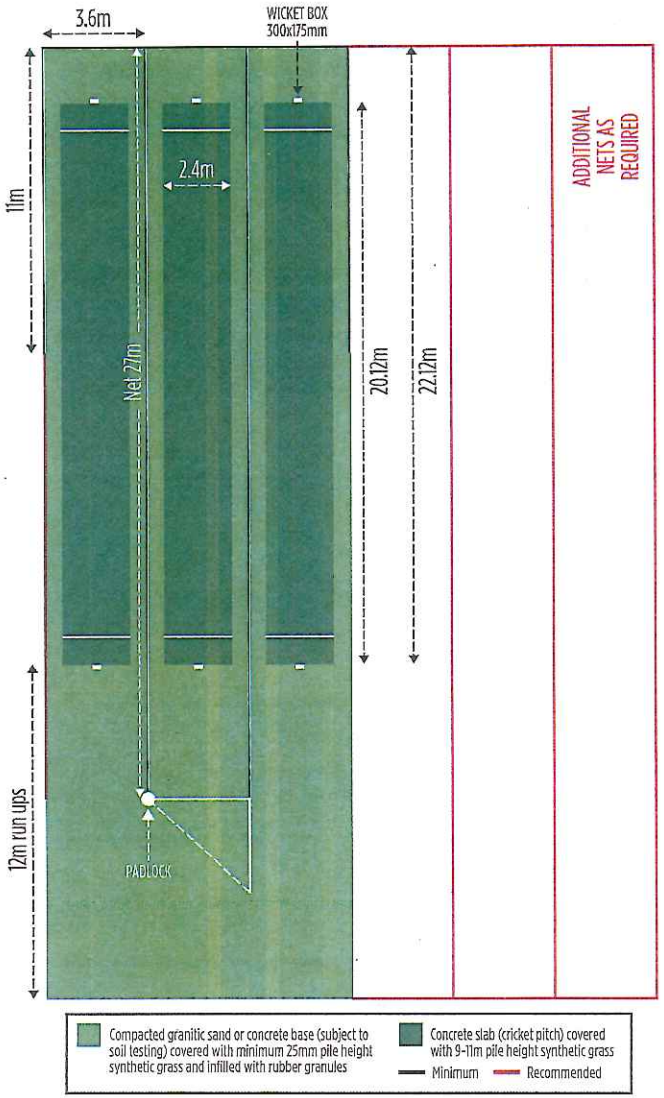
Caulfield Park, Caulfield (VIC)



Typical two pitch cricket net fencing enclosure Type B with pitched roof design.

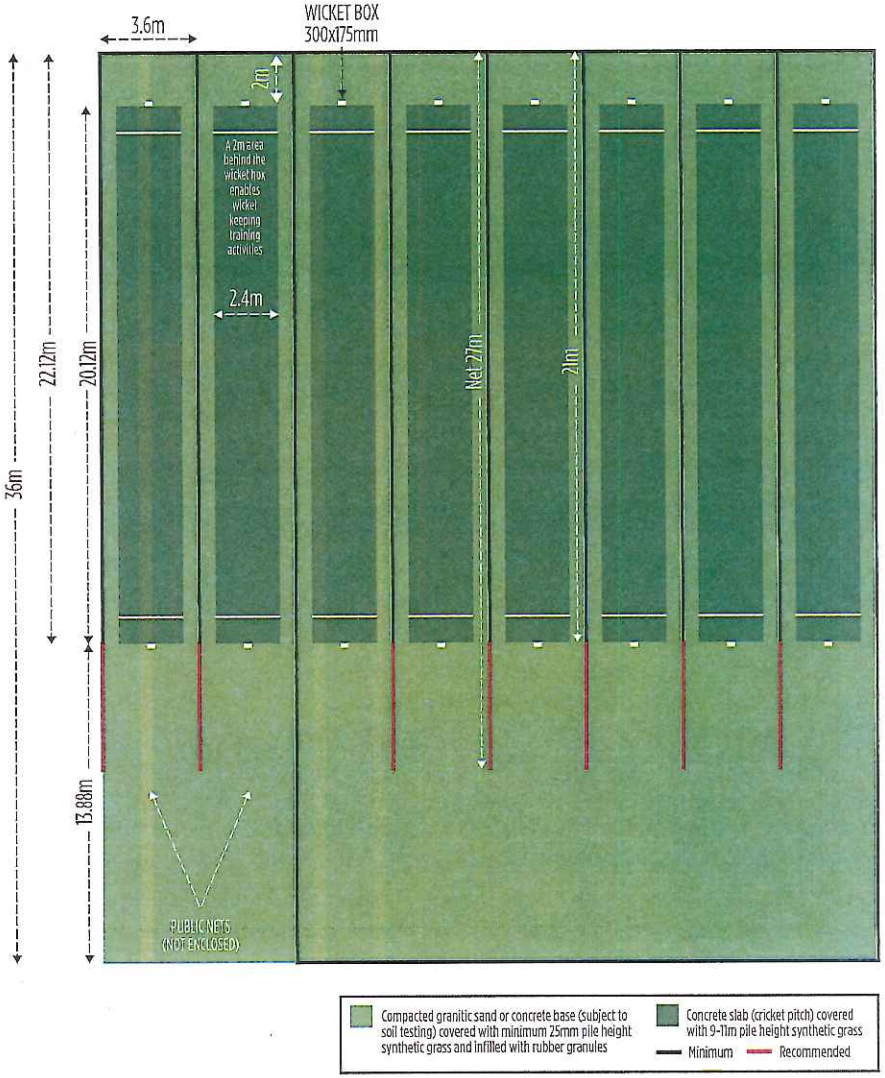
CRICKET ONLY SYNTHETIC PRACTICE PITCHES (NOT ENCLOSED)

The diagram below outlines the area requirements and recommended design to develop a new non-enclosed cricket net training facility. The design also includes extended synthetic bowler run-ups and a lockable gate.



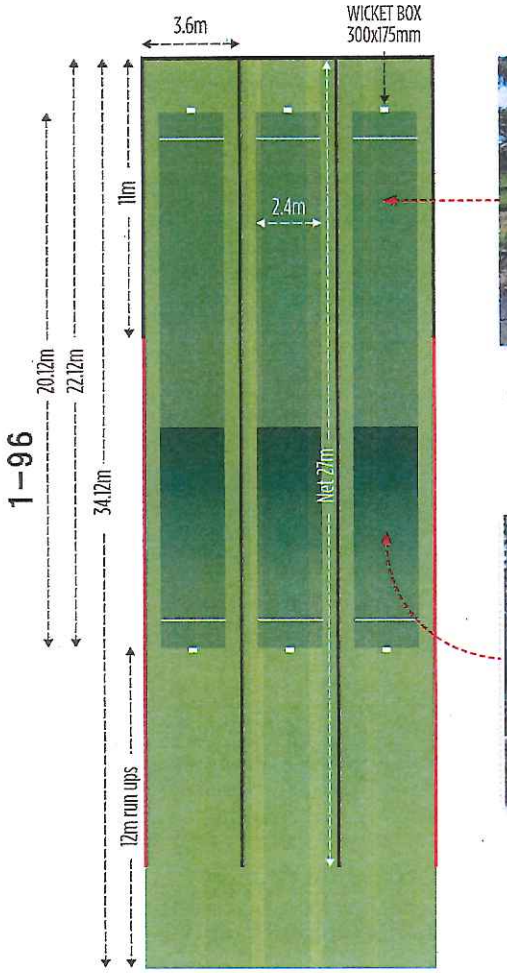
Although public access is promoted, Councils/Clubs may wish to lock one or multiple nets which will require a lockable gate at the bowler's end. The gate would cover the width of the bay when locked or secured. When in use the gate can be drawn back and secured, which in turn will act as the extension for the dividing net as displayed in the above diagram. It is recommended gates have a long lockdown bolt for padlocking.

CRICKET ONLY SYNTHETIC PRACTICE PITCHES (ENCLOSED)



REDEVELOPING SYNTHETIC CRICKET PRACTICE PITCHES

This design option provides a recommended approach to redeveloping 'disconnected' (gap between batting and bowling concrete pads) synthetic pitch training nets to improve player safety, general playability and suitability. It also includes extended synthetic bowler run up provision.



Infill previous safety and maintenance hazard area with compacted granitic sand and 25mm pile synthetic grass.

Join existing batting and bowling concrete pads through installation of additional concrete and relay new 9-11mm pile synthetic surface over entire pitch area (20.12m).

Space permitting (without encroaching on playing field), extend bowler run up areas to allow for an additional 12m from bowling crease.

Compacted granitic sand or concrete base (subject to soil testing) covered with minimum 25mm pile height synthetic grass and infilled with rubber granules

Concrete slab (cricket pitch) covered with 9-11m pile height synthetic grass

Minimum — Recommended

TURF TRAINING NETS

Turf training nets are an integral element to simulating centre pitch conditions and playability and important to clubs and teams participating in turf pitch competitions.

Each turf training net should be separated by adjustable soft netting. Unlike synthetic training nets, turf nets can be located on the ground at the extremities of the oval or off the ground with the run-ups being on the ground.

Fabric netting is more appropriate for turf training nets to allow for flexibility and ease of maintenance. Netting should extend beyond the bowler's point of delivery in each net to minimise risk of injury.

For any new developments it is recommended turf training nets be located totally off the ground with mesh wire fencing on the end and sides but open at the bowlers end. A nearby storage facility for equipment and bowling machine is also recommended.

Turf training nets should have a north-south orientation with an ideal rotation of 15 degrees east of north and maximum rotation of 30 degrees east or west of north.

The recommended length for turf training pitches is 22m. This distance includes the pitch length from stump to stump (20.12m), the bowling crease (1.22m – one end only) and some space at the rear of the stumps at the batsman's end. This length can be extended to allow for greater room at the rear of the stumps at both the batsman and bowler's ends if required.

Adding 2-4 synthetic cricket pitches adjacent the turf training areas is advantageous as it enables clubs to use the synthetic pitches as an alternate training facility if the turf pitches are underprepared or have been impacted by wet weather.

Drummoyne Oval (NSW)
Image courtesy of insideEDGE Sport and Leisure Planning

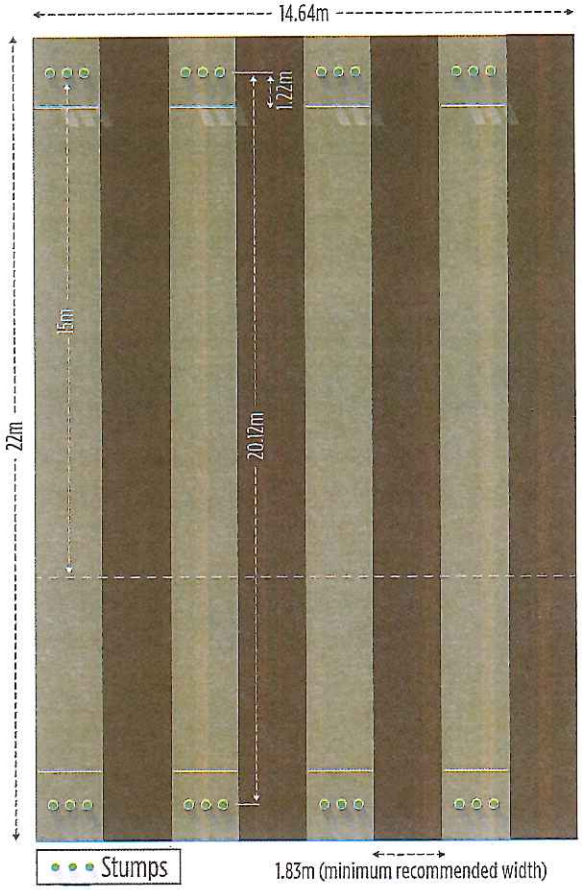
4-6 turf training nets are preferred for local club turf cricket competition. 8-12 pitches are recommended for premier or regional level cricket.

Williamstown Oval (VIC)
Image courtesy of insideEDGE Sport and Leisure Planning

Combined turf and synthetic training nets enable greater training flexibility.

TURF TRAINING NET DESIGN

The diagram below outlines the area requirements and recommended design to develop a turf training net facility.



While full length turf training pitches are recommended, a minimum length of 15m (approximately three quarters of a full length pitch) could be considered to assist clubs in managing the cost of turf pitch development, preparation and ongoing maintenance.

Soft training net storage units provide a lockable and secure location for netting when not in use. They also enable quick and easy set up and pack down of training nets.

Using alternate pitches at any one time enables turf recovery and preparation whilst pitches are not in use.

COMMON TRAINING NET DESIGN ISSUES

Divided bowling and batting concrete pads create an unsafe environment for bowlers completing their follow through and limit the ability for delivery of a 'short ball'.

Example of poor quality and unsafe infill materials
Image courtesy of insideEDGE Sport and Leisure Planning

Grass surrounds create a maintenance issue and detract from user experience. Overgrown grass also impacts pitch area and can deteriorate synthetic surfaces prematurely.

Example of poor quality and unsafe infill materials
Image courtesy of insideEDGE Sport and Leisure Planning

Tree debris falling on the pitch can also create risk management issues as well as damaging pitch condition through build up of mould and algae if not maintained correctly.

Evidence of leaf litter and tree debris falling on practice pitch area
Image courtesy of insideEDGE Sport and Leisure Planning

Flat roof designs can suffer from net sag as a result of people climbing on top of nets to retrieve balls.

Example of damage to a flat roof net design
Image courtesy of insideEDGE Sport and Leisure Planning

Overhanging trees can create shadows over the pitch and interfere with the batsman's vision.

Example of inappropriately positioned vegetation
Image courtesy of insideEDGE Sport and Leisure Planning

MULTI-USE TRAINING FACILITIES

Multi-use training facilities incorporating cricket practice nets are growing in popularity due to their flexible nature and capacity to accommodate a range of activities and uses.

They also ensure investment into community facilities provide benefits outside of summer cricket training.

Significant interest has been identified for multi-use training facilities with many design related projects underway across the country.

A typical range of multi-use training facilities developed to date include configurations that accommodate training for cricket-netball, cricket-baseball, cricket-soccer, cricket-lacrosse, cricket-hockey and cricket combined with general training and pre-game warm-up for other codes including rugby and Australian Rules Football.

The principles of cricket net design can be integrated within multi-use facilities including safety, compliance, accessibility and game development. Where multi-use facilities can demonstrate adherence to these principles and still provide fit-for-purpose cricket training nets that are flexible for other activities, then Cricket Australia will support these innovations.

In all multi-use training facility projects, it is difficult to pre-empt all community activity that could be considered compatible with cricket. Final use and design of facilities is often a result of club, community and Council consultation and it is recommended that this process, along with the proposed staged planning process identified in **Section 1** be utilised to ensure maximum benefit can be achieved for all.

A number of **Case Studies are provided in Section 3** that highlight a range of multi-use training facilities.

ADDITIONAL AMENITIES TO SUPPORT PRACTICE PITCHES

Power supply

A nearby power supply to outdoor training nets enables the operation of an electronic bowling machine. Bowling machines typically operate on 240 volt power requirements but always check machine requirements with the manufacturer before installing power. Be mindful that electric cords do not become trip hazards and ensure they avoid contact with water.

Important to have netting barrier to protect the ball feeder

Training net storage

Internal turf training net storage units provide a lockable and secure location for netting when not in use. They also enable quick and easy set up and pack down of training nets.

Example of retractable training net storage unit
Image courtesy of insideEDGE Sport and Leisure Planning

Rubber net edging

Rubber net edging minimises the damage to cricket balls as a result of impact with the fence and also increase the longevity of fencing through absorption of ball impact. Ensure fence posts have the capacity to support rubber matting.

Example of rubber material for netting
Image courtesy of insideEDGE Sport and Leisure Planning

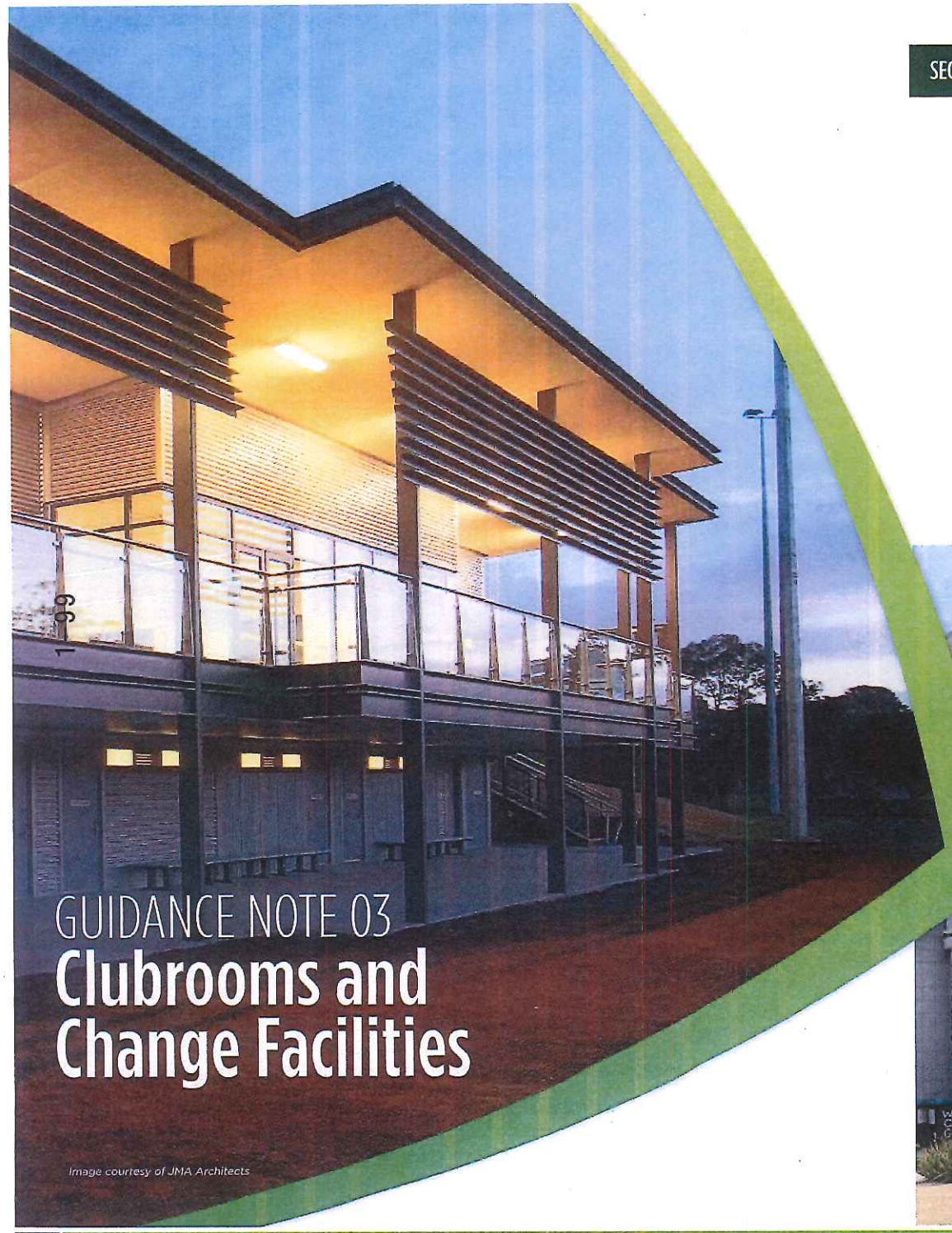
Storage facility

A storage facility in close proximity to playing field and training facilities enables easier set up and pack down of equipment as well as a secure storage location for training and match day equipment. It can also act as a functional and elevated base for a match day scoreboard.

Storage shed with combined scoreboard at Williamstown Oval (VIC)
Image courtesy of insideEDGE Sport and Leisure Planning

Access to water

Access to a nearby water supply is recommended for turf practice pitches to assist with pitch development and ongoing maintenance.



GUIDANCE NOTE 03

Clubrooms and Change Facilities

Image courtesy of JMA Architects

INTRODUCTION

Clubrooms and change facilities play a crucial role for cricket clubs, extending beyond the functional aspects of change rooms, toilets and kiosks.

They provide a central meeting place for club and community social activities and a physical base to celebrate club history and performance. Well designed clubrooms and change facilities can contribute significantly to a successful club, sporting precinct and local community.

This Guidance Note provides information on clubroom and change facility features for cricket, ideal location and placement recommendations and suggestions that support the overall cricket experience. It provides preferred area schedules for clubrooms, change rooms and building amenities and should be read in conjunction with other relevant sporting code facility design guidelines when planning a new building or redeveloping an existing facility that is used for community level cricket.

It is important to note that any pavilion, clubroom or building project should be based on a sound foundation of club, community and council consultation and the project planning processes and principles outlined within these Guidelines.

Informed business and management planning should proceed design processes to ensure that pavilion and clubroom areas and spaces adequately reflect needs (cricket and community) and are large and functional enough to ensure that clubs, users and the venue itself are viable and sustainable.

DESIGN PRINCIPLES, STATUTORY AND SPECIFICATION COMPLIANCE

Regulations, Standards and Codes

In addition to cricket specific facility guidelines detailed in this document, it is important the following Standards, Codes, Acts and Regulations are complied with and fully considered during the planning and design of cricket clubrooms and associated buildings:

- Australian Standards (using the version applicable)
- The Human Rights and Equal Opportunity Commission (HREOC) advisory notes
- The Building Code of Australia: National Construction Code (NCC, formerly the BCA) (applicable at the time a Construction Certificate is applied for)
- The National Code of Practice for the Construction Industry and the Australian Government Implementation Guidelines for the Code
- The Environment Protection and Biodiversity Conservation Act (1999); and the requirements of State and Territory Departments and Authorities responsible for planning and environmental matters
- The National Standard For Construction Work document, National Occupational Health and Safety Commission - NOHSC:1016
- The Protective Security Policy Framework (PSPF) document promulgated by the Australian Government Security Construction and Equipment Committee (SCEC)
- Work Health and Safety Acts (2011) (WHS)

In addition, all designs (new and refurbished facilities) must fully comply with the **Disability Discrimination Act (DDA)** and relevant Australian Standards, which include, but are not limited to the following:

- Disability Discrimination Act (1992)
- Disability (Access to Premises – Buildings) Standards 2010
- AS 1428.1 – Parts 1, 2, & 4 - Design for access and mobility.

Universal Design

Sporting facilities at both the elite and community level share a commonality in that irrespective of age, gender, ability and/or cultural background, people come from all walks of life to participate and be involved. As a sport, Cricket needs to ensure current and future facilities are designed not only to encourage participation in the game, whether it be as a player, umpire, spectator, coach or club volunteer, but are also flexible in their use to cater for other community members.

Through the adoption of a best practice design philosophy such as **Universal Design Principles**, cricket clubrooms and facilities can promote and facilitate inclusion for not only sporting-related users but also community groups who use sporting venues and supporting facilities as places to meet, interact and hold events. By incorporating universal design principles into future cricket facility developments it enables not just some people, but all people to feel included and share in our great game without the need for differentiated or specialised/adapted features.

Occupational Health & Safety and Safe Design

Section 22 of the Work Health and Safety Act 2011 refers to the "Duties of designers of buildings and structures". All designers are to be committed to improving Occupational Health and Safety (OHS) outcomes through *Safe Design* approaches. Safe design processes must integrate hazard identification and risk assessment early in the facility design and procurement process.

Consideration should also be given to Crime Prevention Through Environmental Design (CPTED) principles during the design phase with more information on these principles available via Police Victoria's website: *www.police.vic.gov.au/content.asp?document_id=10444*

ENVIRONMENTALLY SUSTAINABLE DESIGN

The construction and operation of cricket clubrooms has a significant direct and indirect impact on the environment.

When building new or redeveloping existing sporting buildings and supporting facilities it is important to reduce direct environmental impacts through the implementation of practices and design ethos such as:

- Optimising the size of new buildings and/or the potential of existing structures
- Investing in energy efficient technologies and optimising energy usage through initiatives such as passive solar design and natural ventilation systems
- Protecting and preserving water
- Using environmentally friendly and green materials
- Enhancing indoor environmental quality
- Optimising operational and maintenance practices
- Minimising waste through recycling and efficient use of resources
- Ensuring the space sporting facilities occupy is designed, occupied and operated with the objective of best practice environmental performance.

PRINCIPLES OF DESIGN AND PROVISION

PRINCIPLE	DEFINITION
MULTI AND SHARED USE*	Cricket clubrooms should be designed to allow for flexible use by a range of users including other sporting clubs, schools and community organisations
UNIVERSAL DESIGN	Through the adoption of Universal Design Principles, cricket facilities and clubrooms should be designed to accommodate everyone including all ages, genders, abilities and cultural background
HEALTH AND SAFETY	Cricket clubrooms and their surrounds should be designed, built and maintained in accordance with relevant Occupational Health and Safety standards and incorporate Safe Design practices
ENVIRONMENTAL SUSTAINABILITY	Buildings should be designed in accordance with Sustainable Design Principles, ensuring an equitable balance between recreational and environmental needs are achieved
FUNCTIONALITY	Facility design and layout should promote safe and optimal functionality for cricket, other sporting clubs and codes, schools and community organisations
CONSOLIDATION	Ensure efficient use of resources by consolidating facilities within a single building envelope and promote the shared use of common areas and spaces
FIT FOR PURPOSE	While promoting a flexible and multi-use design approach, ensure cricket friendly design elements and specific requirements are designed to the best standard for the level and type of cricket activity being facilitated
WHOLE OF LIFE COSTS	Cricket clubrooms in their design, functionality and material selection should consider maintenance, operational, renewal and replacement costs to support improved long-term building provision and performance

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*COMPATIBILITY AND MULTI-USE

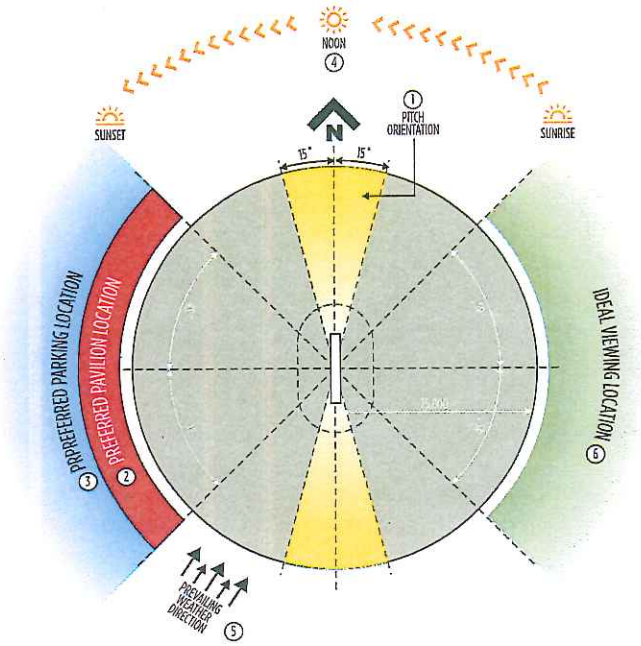
The vast majority of venues used for cricket are shared with an alternative sporting club or organisation.

Historically shared use has generally been a summer-winter seasonal relationship. While this is still relevant in community sporting facilities today, seasonal influences of other sports and with the emergence of winter cricket, the facility landscape is changing.

However, the key fact remains that cricket is a compatible user and sharer of community sporting grounds and clubrooms. With this in mind, it is important cricket acknowledges shared use principles and seeks to ensure facilities are multi-purpose and flexible in design and at a minimum, meet the core functional requirements of other sports, as well as consider other aligned non-sporting and community users that could be incorporated.

Australian Rules Football, Soccer, Rugby League, Rugby Union and Baseball are the most common sporting codes with whom cricket co-exist at the community level. In general, if facility providers are meeting key winter code requirements for changing rooms, showers and toilets, umpire and officials amenities, social rooms, medical facilities, canteen/kiosks and office accommodation, cricket is generally accommodated at the community level.

National preferred facilities guidelines for the Australian Football League (AFL) and National Rugby League (NRL) have been referenced in the preparation of this Guidance Note.



SITE ANALYSIS

1. **Cricket pitch orientation** is a key consideration for planning any playing field and should ideally be oriented along the north/south axis (where sun is at its highest) to avoid risks associated with bowlers or batsmen directly facing the low sun. **It is recommended that the pitch be oriented no more than 10-15 degrees beyond the north/south axis.**

2. **The facility orientation is a key passive design strategy** and should consider:
   - limiting exposure to prevailing weather
   - central and perpendicular orientation (east-west axis) to the pitch to maximise views for spectators, players and team staff
   - direct access to site entry points and car park.

3. **The site car park** should be provided adjacent to the facility and **preferably behind the building** in order to:
   - maximise spectating around the oval and perimeter circulation
   - provide direct access to the facility entry points
   - limit risks associated with balls striking vehicles.

4. **The sun position and altitude is a key consideration** when planning the pitch and building orientation. The pitch should be positioned on the north/south axis to limit exposure to the low sun and the building active elevation should face east.

5. The prevailing weather direction should be considered when planning:
   - **Facility orientation** – ideally the active/spectating elevation of the building should face away from prevailing weather and to the centre of the pitch. The building siting is therefore crucial at the early planning stages and will vary depending on the State and local weather patterns. Any undercover spectator areas associated with the facility exposed to prevailing weather should be provided with roof overhangs or canopies to enhance the spectator experience.
   - **Spectator areas** – external spectator areas should be provided with weather protection where possible and be orientated away from prevailing weather as much as practicable.

6. **External spectator areas** should be provided within close proximity to the playing area and preferably perpendicular to the cricket pitch. Where possible, spectator areas should not be oriented towards prevailing weather or on the north/south axis to avoid interfering with the batman's view. Spectator areas should be elevated (where site conditions allow), have equitable access and weather protection.

CRICKET FRIENDLY DESIGN CONSIDERATIONS

A number of cricket friendly design elements should be considered through clubroom or change facility design, development or retro-fitting in order to improve the overall experience for cricketers, umpires, spectators and families.

Key considerations include:

- Building location and placement
- Shade and shelter provision
- Clear viewing for players and scorers
- Surfaces and finishes
- Storage options for player and maintenance equipment
- Celebrating history and performance.

Building location and placement

As each site is different it is difficult to achieve ideal placement and orientation for every building. However, ensuring that buildings are orientated towards the main or multiple activity areas is a critical success factor. Avoiding direct west facing sun for spectators and positioning buildings within close proximity to car parking and vehicle drop-off areas is also critical as is creating pathways that promote easy access and a way to the building and its amenities.

Ensuring that the building has good solar access will result in heat gain from the sun, reduce energy requirements and improve comfort levels. External seating and shade should be provided for players, officials and spectators and incorporated within the building envelope where possible.

The above site analysis diagram provides an overview of building placement considerations when developing new or relocating an existing facility.

Clear viewing areas

A sheltered scorer's area (indoors or outdoors) with unobstructed views (elevated preferable) to the centre pitch and controlling umpires ensures the match runs without unnecessary communication delays. Sheltered player and spectator viewing area with unobstructed views to the ground is also desirable.

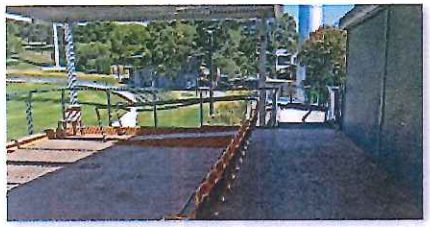
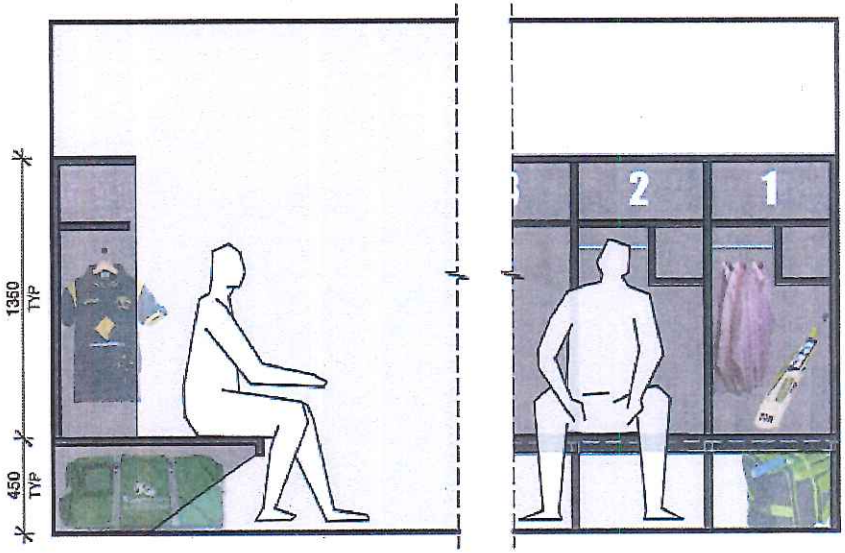


Image courtesy of InsideEDGE Sport and Leisure Planning

Image courtesy of Cricket Australia

Surface finishes

Rubber matting leading on and off the playing field from player change rooms is recommended to minimize potential slip hazards for players wearing spiked cricket shoes. This treatment is only relevant for turf cricket pitch venues.



Change room storage

Due to the large amount of protective equipment required for batsmen, adequate change room size and design that caters for player equipment kits is important. Seating that enables the storage of individual player cricket kits underneath maximises use of the space and minimizes potential trip hazards.

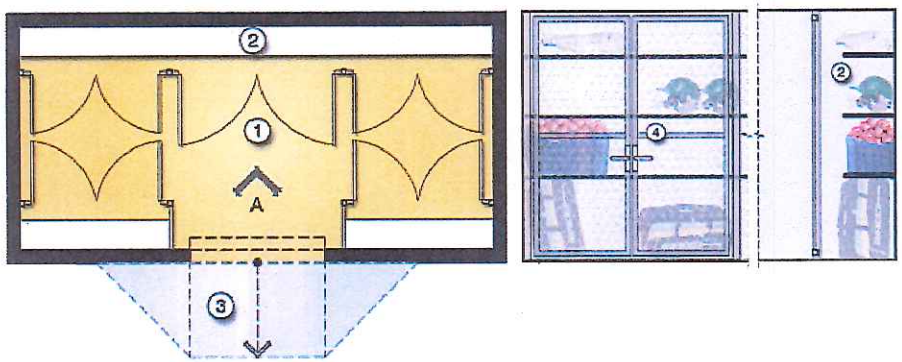
Example of change room lockers and under bench storage
Image courtesy of JMA Architects

STORAGE SOLUTIONS

Internal storage rooms should be designed with shelves to maximise storage room capacity. Provision of separate secure areas or cages for storing seasonal user equipment is ideal to ensure all users can secure equipment on site.

External storage facilities for curator equipment and machinery is also recommended within close proximity to the playing field. Access between the storage facility and the ground should be unimpeded by drainage infrastructure or other impediments to allow for rollers and maintenance vehicles to be used. Storage facilities can also double up as a scoreboard foundation.

The following diagrams provide some guidance on storage solutions for cricket, with the following numbered references providing additional support information.



1 **Equipment store rooms** should be accessed via an external vertical roller door or double swing door to allow for direct playing field access. The storeroom should ideally be rectangular or square in shape, to allow for maximum perimeter storage.

2 **Provide perimeter storage shelving** (fixed or adjustable) or open compartments for sports equipment or club goods. The height/vertical spacing of the shelves should be designed to accommodate the nature of the storage. Shelving should be constructed from robust materials and be provided with heavy duty supports, either to the wall or on a free standing frame.

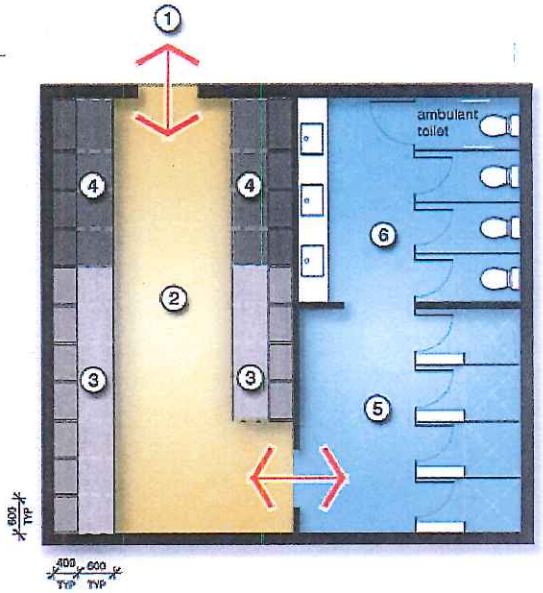
3 **Where curator's sheds are provided,** ensure that access to the playing field is on grade or ramped to suit the site levels for the pitch roller and other maintenance vehicles. Where the shed is raised, access can be achieved as a 1:8 step ramp, with 45 degree splays as shown.

4 **Provide lockable gates** (screen mesh or similar) or solid doors to storage shelving and cupboards to prevent theft and vandalism.

CHANGE ROOM DESIGN

The design of cricket change rooms should be developed in-line with overall site usage and users, including compatible or alternative sporting uses.

The following features and associated numbered annotations should be considered when designing change room facilities that accommodate cricket use.



1 **Entry to the change rooms should ideally be at ground level,** on grade (or ramped to comply with DDA standards) and adjacent to the playing field for ease of access for players. Where possible, avoid the inclusion of stairs as these limit access for all. Access points should be provided with weather protection and clearly visible with room signage. Provide a clear distinction and separation between player thoroughfares and spectator areas.

2 Change rooms can provide both locker storage and an area for players to change in a simple open plan layout. **The room arrangement should ideally be rectangular to provide two opposing benches.** Avoid island lockers/benches where possible, as they limit circulation.

3 **Provide minimum space for 11 players for cricket in the changing space.** If providing lockers, they should be constructed from a robust material (compact laminate or hardwood) and it is recommended that the following be included:

- locker/bench compartments each 600mm wide minimum
- a bench seat which is 600mm deep
- an under bench compartment for storing bags (1000mm overall depth)
- a rear locker compartment behind the bench seat, with coat hooks or a hanging rail. The compartment should be 400mm deep and 1350mm high.

4 **Provide additional lockers or change benches to accommodate other sports** with more than 11 players.

5 **Access to the amenities/wet area is to be provided directly from the changing space,** with showers immediately adjacent to the locker area. Limit site lines from the change space to the amenities and provide showers as lockable cubicles to better accommodate all users. **The minimum quantity of showers to accommodate cricket at all levels is three,** but a greater number of showers for winter sporting codes may be required in multi-use facilities.

6 Toilets should be provided in accordance with the National Construction Code (NCC) and relevant sporting facility guidelines. **A minimum of three toilet pans is preferred for cricket,** however a greater number of toilets for winter sporting codes or other uses may be required in multi-use facilities. Toilets should be provided as lockable cubicles. Avoid the use of urinals to better accommodate unisex use. Each change room should have at least one ambulant toilet facility in accordance with Disability Discrimination Act (DDA) standards. Provide wash basins in close proximity to toilet facilities and accommodate NCC requirements based on the quantity of toilets.

Example of an accessible shower facility
Image courtesy of JMA Architects

Example of separate pan toilet cubicles
Image courtesy of JMA Architects

Example of player bench layout with coat hooks
Image courtesy of JMA Architects

Example of lockable cubicle showers
Image courtesy of JMA Architects

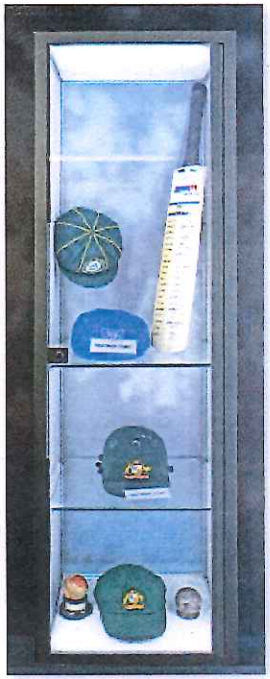
CELEBRATING CRICKET'S CULTURE

Recognising club and individual player achievements via memorabilia displays, trophy cabinets and honour boards is an integral part of any club's culture.

Such displays allow past, present and future club members, supporters and the wider cricket community with an opportunity to re-live and celebrate the club's history and ensure the spirit of cricket lives on through future generations.

Space for displaying memorabilia is often overlooked when designing sporting facilities. A dedicated memorabilia and/or merchandise area positioned in close proximity to the building's front entrance creates a favourable impression of the club for patrons as they enter the facility, promoting the club as a proud and successful organisation.

Consideration should be given to memorabilia placement and off-season storage in multi-use environments where a clubroom's usage changes on a regular basis for either an alternate sporting use or community group.



Images courtesy of insideEDGE Sport and Leisure Planning

CRICKET CLUBROOM FUNCTIONAL DIAGRAM

The suggested functional clubroom layout diagram depicts a generic cricket clubroom facility with a range of optional room areas to support higher levels of the cricket facility hierarchy.

It has been developed only to show the functional relationships between building areas and with associated site amenities and playing field. As each individual site and building project is unique, this diagram should be used as a reference only to ensure that your next clubroom design project (new build, redevelopment or refurbishment) considers the critical functional elements of a sporting facility that adequately accommodates cricket. Numbered annotations to support the diagram are provided on the following page.

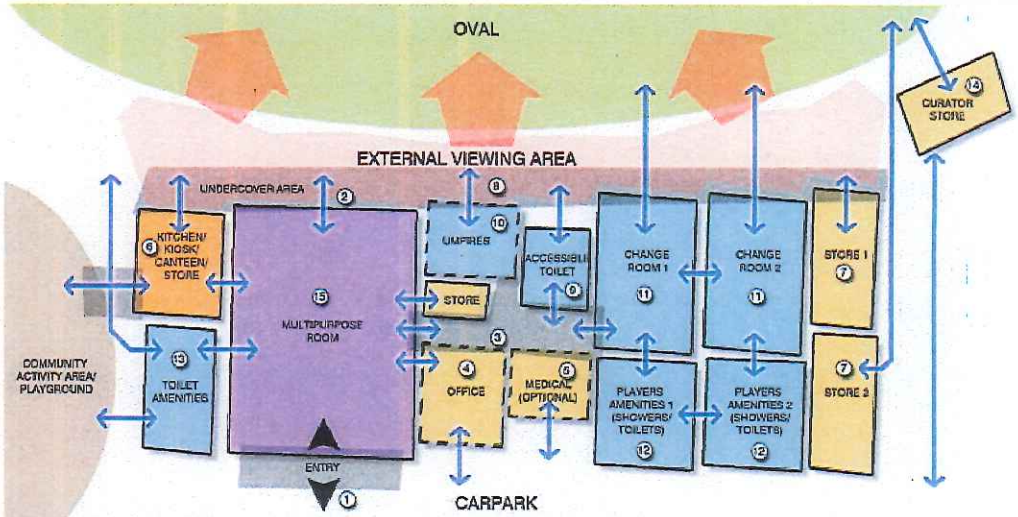
Dotted lined room areas denote **optional amenities** to be provided in order to suit facility hierarchy, competition levels and user needs.

Example of internal and external kitchen servery
Image courtesy of JMA Architects

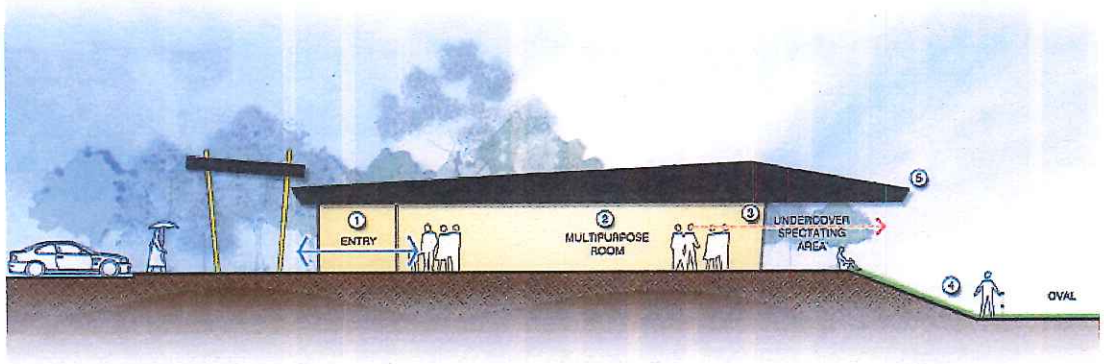
Example of kitchen viewing towards playing field
Image courtesy of JMA Architects

Example of internal multi-purpose room and kitchen servery
Image courtesy of JMA Architects

Example of natural light into and viewing out of the kitchen area
Image courtesy of JMA Architects



1. **Facility main entry** is typically to the multi-purpose room and from the rear of the site via the car park.
2. **Maintain clear site lines** to the field and avoid fixed structures or seating in this zone to maximise spectating from the multi-purpose room.
3. **Circulation/linkage between change rooms** and multi-purpose space.
4. **Office/administration room** is optional and generally applies to Premier/Regional venues.
5. **Medical room** requires internal and external access to the car park and ambulance bay.
6. **Kitchen/Kiosk/Canteen** should serve internally into the multi-purpose room and externally to spectator areas/community activity areas. An internal store room for dry goods or freezers is preferred, along with external access for deliveries.
7. **Equipment store rooms** should be accessed via roller shutter or double doors and have direct external access to the field to assist with moving equipment. Store rooms are ideally positioned on the end of the building to maximise access playing to the field.
8. Provide **weather protection** to external viewing or seating areas.
9. **At least one unisex accessible toilet,** including baby change area is required at all facilities and should have direct access for spectators. The accessible toilet should incorporate a shower facility and be ideally positioned adjacent to change rooms with direct internal access. It should also be centrally located with close proximity to multi-purpose room/viewing areas to provide equitable access for both players, spectators and other venue users.
10. **Umpire/match official rooms** typically apply to Premier/ Regional and Club (Home) level venues. If umpire rooms are provided, provision should be made for unisex facilities in the form of fully enclosed compartments (minimum of two lockable cubicles).
11. **Change rooms require direct and central access to the field for players.** A roller shutter or operable wall between the change rooms provides a linkage for flexible use of the space for schools or larger groups and squads.
12. **Amenities (showers/toilets)** require direct access to the change rooms and should have a lockable link between to assist with cleaning.
13. **Public amenities** should ideally have internal access to the multi-purpose space and direct external access to the playing field viewing or community activity areas.
14. **Curator's shed should have direct field access** and be ramped down for roller access if required. The shed can be disconnected from the main clubroom building as a stand-alone structure and should not obstruct site lines from primary spectating areas.
15. **Multi-purpose room** should have clear sites lines to the field and be provided with maximum glazing.



CLUBROOM SECTIONAL DIAGRAM

The above diagram provides an example of a cross section of a generic single level cricket clubroom venue that corresponds with the functional clubroom layout diagram.

The numbered annotations provide supporting explanatory notes.

1. **The main entry to the facility should be clearly defined and accessible** from the car park with appropriate way finding measures as required. Provide an entry canopy/roof overhang for weather protection and external lighting to enhance security during after-hours access.
2. **The multi-purpose room should have a central and clear view to the playing field** with a high ceiling (typically 3000mm) and maximum glazing to the playing field elevation. The external glazing can be vertically angled and tinted (grey) to reduce solar glare.
3. **For Premier or Regional facilities**, it is preferable to provide a raised scorers' box/viewing area, typically at first floor level. This can be achieved as a mezzanine with immediate access from the multi-purpose space. An unobstructed view of the scoreboard and playing area from the scorer area is required (item not depicted as mezzanine level in the representation above).
4. **Spectator areas (internal and external)** should be locally raised by 500 – 1000mm over the playing field to enhance views to the cricket pitch. Avoid fixed seating or benches immediately in front of the multi-purpose space, so that internal views are not obstructed.
5. **Provide roof overhangs or canopies** to external spectator areas (with appropriate lighting) to provide weather protection and shading.

SUGGESTED MAIN PAVILION AND AMENITIES AREA SCHEDULES

The below area schedule outlines the **required, desirable and optional areas for cricket clubrooms and supporting amenities at each level of the Cricket Facility Hierarchy.** If designing a sporting pavilion, the schedule of areas outlined below should be considered in conjunction with other sporting code and community facility requirements and local planning and policy conditions. While these areas set the minimum preferred levels, exceeding these guidelines to meet a range of other uses and users may be a consideration of project partners at the early planning stages of your project.

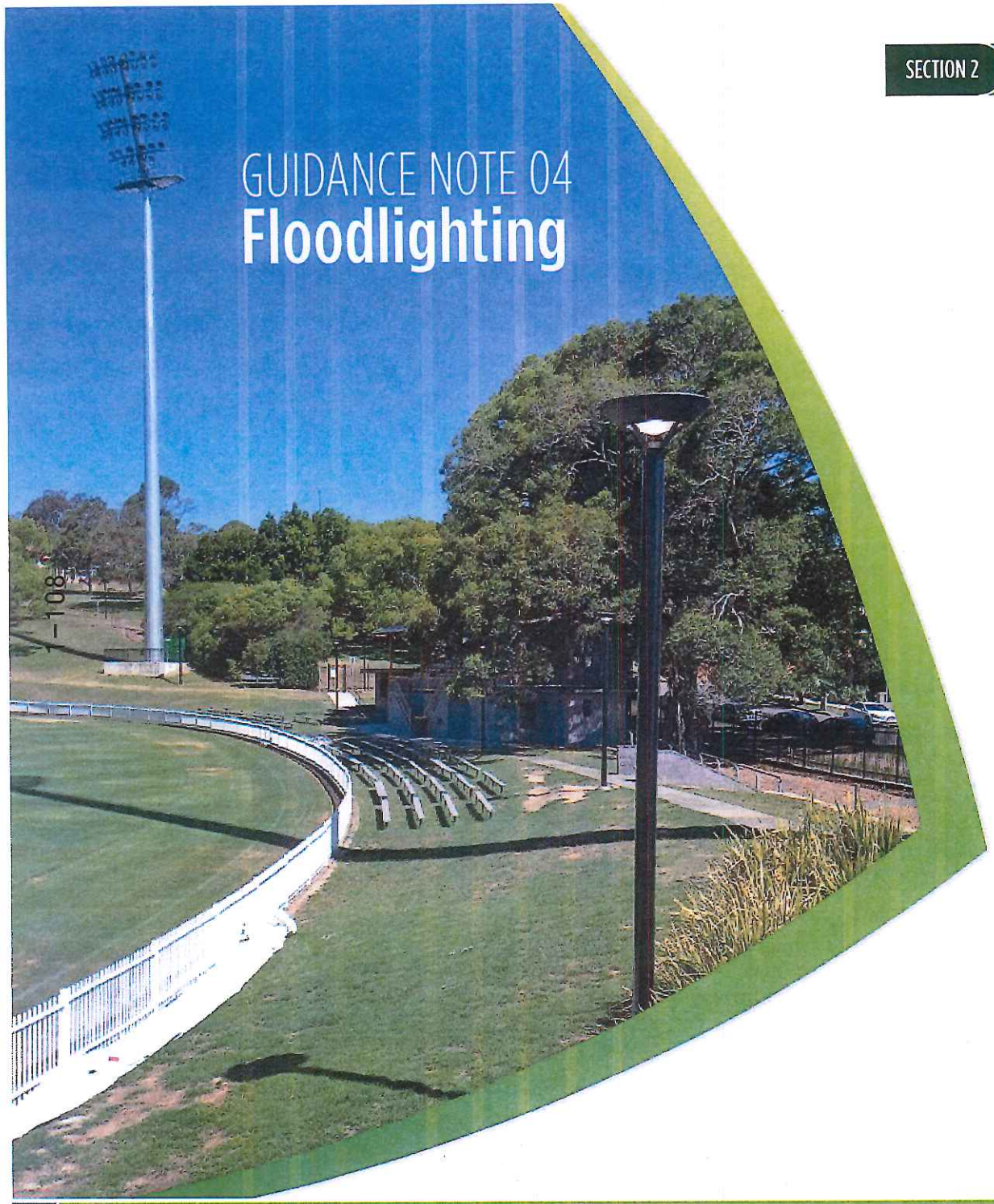
	PREFERRED SIZE (M^2)			PREFERRED PROVISION LEVELS			FACILITY DESIGN COMMENTS
PAVILION/ AMENITIES	PREMIER/ REGIONAL	CLUB (HOME)	CLUB (SATELLITE)	PREMIER/ REGIONAL	CLUB (HOME)	CLUB (SATELLITE)	
CHANGING ROOMS / AREA	30 – 45m² x 2	20 – 30m² x 2	20 – 30m² x 2	Required 2 change rooms per playing field	Required 2 change rooms per playing field	Desirable	At a Premier/Regional and Club (Home) facility a minimum of two unisex changing rooms is required. At Club (Satellite) level venues, dedicated changing rooms are desirable. In many cases clubroom buildings may not be provided at Club (Satellite) venues - in these cases, access to toilet amenities and drinking water is preferable. Where a single clubroom facility serves multiple home playing fields at any one site, two change rooms per playing field is preferred where practical.
AMENITIES (PLAYER TOILET/ SHOWERS)	25m² x 2	20 – 25m² x 2	15 – 20m² x 2	Required 2 amenities per playing field	Required 2 amenities per playing field	Desirable	Each change room requires its own designated wet area (shower and toilets) with limited sight lines to adjoining areas. Both Premier/Regional and Club (Home) level facilities require a minimum of three showers (to accommodate cricket). Lockable private cubicles and toilet pans are recommended to promote unisex usage. Include mirrors in conjunction with hand basins.
ACCESSIBLE TOILETS	Male 15m² Female 15m² Accessible 5.5m²	Male 15m² Female 15m² Accessible 5.5m²	Male 10m² Female 10m² Accessible 5.5m²	Required	Required	Required	Accessible toilets are a key component of all clubroom buildings and should be provided at each cricket facility hierarchy level. It is recommended accessible toilet facilities be included within the main building footprint to minimise the impact on open space (multiple buildings) and increase site functionality. The size and fit out of toilet amenities will be dependent on building codes and requirements, identified site uses and forecast spectator and social attendances.
UMPIRES ROOM (INCLUDING SHOWER & TOILET)	15m²	15m²	15m²	Required	Required	Optional	A self contained changing room for use by umpires is required at both a Premier/Regional and Club (Home) facility. It is assumed that at these hierarchy levels that a minimum of two umpires are officiating at Premier/ Regional level games and a minimum of one officiating at Club (Home) venues. Should independent umpires be officiating at Club (Satellite) venues then adequate change facilities should be provided. A single change room should include two lockable shower cubicles and a toilet cubicle, washbasin, mirror and bench space. Secure locker storage is also recommended along with coat hooks.
MEDICAL/ FIRST AID ROOM	15m²	10m²	10m²	Desirable	Optional	Optional	Separate area to cater for desk and a treatment bed. This area would need to include a sink and should be lockable to ensure security of first aid materials and equipment. A medical/first aid room is desirable at the Premier/ Regional level and optional across Club (Home and Satellite) venues.

SUGGESTED MAIN PAVILION AND AMENITIES AREA SCHEDULES

PAVILION/ AMENITIES	PREFERRED SIZE (M²) PREMIER/ REGIONAL	CLUB (HOME)	CLUB (SATELLITE)	PREFERRED PROVISION LEVELS PREMIER/ REGIONAL	CLUB (HOME)	CLUB (SATELLITE)	FACILITY DESIGN COMMENTS
KITCHEN AND KIOSK	25m² Commercial size kitchen to be considered	15 – 25m² Provision dependent on level of venue capacity, use and activity	15m² Assuming kiosk level amenities only	Required	Required	Desirable	Inclusion of an appropriate standard kitchen and kiosk facility is required at both the Premier/Regional and Club (Home) level facility. The standard and level of kitchen provision (community or commercial) will be dependent on the current and forecast level of use and overall purpose of the venue. Planning of these spaces should be coordinated between tenant clubs and user groups and with land owners and funding providers. Where possible, kiosks and serveries should allow volunteers staffing the kiosk to be able to view playing field and have the capacity to serve both indoors to the main social/multi-purpose room and outdoors to spectators.
KITCHEN STOREROOM (BUILT INTO OVERALL KITCHEN /KIOSK AREA)	8m²	8m²	5m²	Required	Desirable	Optional	Access to storage immediately adjacent to the kitchen or kiosk area is required to assist with the efficient transportation of consumables to and from the kitchen or kiosk area. Provision of dry and cool storage should be considered inline with the level of kitchen/kiosk provision, the type of food and beverage served (and stored), venue attendance levels and the likely turnover rates of produce and products.
SOCIAL, COMMUNITY OR MULTI-PURPOSE ROOM (INDOORS)	150m²	100 – 150m²	80m²	Required	Required	Desirable	A space to conduct social events, gatherings and meetings and promote social interaction is integral to developing not only a strong and inclusive club culture but also club sustainability and local community cohesion. Size requirements for social, community or multi-purpose rooms will vary depending on the size of the club and teams, number of tenant clubs occupying the building and the diversity of additional venue users other than cricket. Social, community or multi-purpose rooms will often include specialised bar facilities and/or access to appropriate kitchen or kiosk servery. The social space should ideally provide viewing towards the main playing field via large windows and should be flexible in design to allow for multiple sporting club and community usage.
ADMINISTRATION AREA/OFFICE	15m²	15m²	15m²	Required	Optional	Not Required	A designated administration area provides a space for clubs to facilitate club management tasks and conduct private meetings and team selections if required. The administration area should provide access to technology connections, internet, telecommunications and include space for shelving, filing storage, computer etc.
SCORERS' VIEWING AREA	3m²	3m²	3m²	Desirable	Desirable	Optional	A designated scorers' area (indoor) with clear views to the full playing field should be allowed for at Premier/ Regional level. Dedicated scorer rooms are not required at other levels of community cricket, however an adequate sheltered space with clear sight lines to playing field and pitch is required at all venues. An unobstructed view of the scoreboard from the scorer area is also highly desirable.

SUGGESTED MAIN PAVILION AND AMENITIES AREA SCHEDULES

PAVILION/ AMENITIES	PREFERRED SIZE (M²) PREMIER/ REGIONAL	CLUB (HOME)	CLUB (SATELLITE)	PREFERRED PROVISION LEVELS PREMIER/ REGIONAL	CLUB (HOME)	CLUB (SATELLITE)	FACILITY DESIGN COMMENTS
GYM/ FITNESS ROOM	20 – 30m²	20 – 30m²	20 – 30m²	Desirable	Not Required	Not Required	Gym and fitness areas are not core requirements of cricket facilities however may be desirable for some Premier level clubs. Their provision should be considered inline with tenant club and landowner consultation.
SOCIAL/ BBQ AREA (OUTDOORS)	As needed	As needed	As needed	Desirable	Desirable	Desirable	As cricket is generally played in the summer months, a dedicated landscaped area for social activity that may include BBQ space (permanent or portable BBQs) is highly desirable for post match or post training social activity.
INTERNAL BUILDING STORAGE	30m²	30m²	20m²	Required	Required	Desirable	Adequate internal storage is required within all cricket clubroom buildings. Internal storage areas should provide space for storage of club equipment, merchandise, fixtures that support flexible use and should be designed to achieve maximum storage capacity and promote safe manual handling practices.
CLEANER'S STORE	5m²	5m²	5m²	Required	Required	Required	Fit out to include an appropriate cleaner's sink, hot and cold water, shelving hooks and drainage.
UTILITIES/ PLANT ROOM	As required	As required	As required	Required	Required	Required	A separate utilities/plant room should be provided for any essential facility services. Size and requirements will be dependent on the servicing of the overall cricket clubroom building.
EXTERNAL STORAGE	40m²	30m²	20m²	Required	Required	Desirable	An external storage facility secured with a durable roller door is recommended for the storage of training and match day equipment. Storage areas may need to provide separate secure areas (e.g. cages or lockers) for storing equipment used by a variety of users (seasonal or casual). This storage facility should not be used to house turf curator machinery and equipment which should be provided separately and in close proximity to the playing field and training nets.
CURATOR'S STORE/ SHED	80m²	60m²	40m²	Required	Required	Required	Curator stores and sheds are assumed for turf cricket pitch venues only and should be developed large enough to house maintenance equipment, covers and small motorised vehicles and trolleys. A separate safe storage area for fuels and chemicals is also required to ensure compliance with OH&S and safe handling standards.



GUIDANCE NOTE 04
Floodlighting

INTRODUCTION

Good lighting is important for local sport as it provides more opportunities to train and play, and assists to maximise the use of facilities.

In the cricket context, floodlighting of select grounds in key locations to support the growth of short formats of our game is becoming more important to the sport. Additionally, the lighting of grounds in our northern states is essential to ensure that climatic conditions and issues of daylight savings can be overcome.

This Guidance Note highlights the critical issues in relation to floodlighting for outdoor cricket play and practice and indoor facilities for non-televised level cricket. It provides necessary information to assist in the planning and development of lighting for cricket environments.

This Guidance Note is not intended to specifically consider lighting for International and Domestic / First Class levels of play under the Cricket Facility Hierarchy as venues will often involve stadium style infrastructure and require specialist lighting consultancy advice as part of a project delivery team.

Specifically considered within the Guidance Note are lighting considerations for community cricket facilities that relate to Premier / Regional, Club (Home) and Club (Satellite) venues and associated levels of play.

Consideration also needs to be given to the joint use of cricket playing fields with other seasonal sports such as Australian Rules Football, Rugby codes and Football (Soccer) for which specific lighting recommendations exist. In the majority of cases, venues will have developed lighting in direct response to the lighting needs of other such sports. This means reconciling lighting for cricket with the lighting of other ground and venue users is an important factor to encourage new lighting options for night play cricket.

In the absence of a formal Australian Standard, this Guidance Note and other reference documents including the *IESANZ Lighting Guideline Series LG-4.01 Sports Lighting Cricket, Cricket Oval and Practice Wickets Floodlighting – Queensland Cricket Technical Guidelines and WA Sports Dimensions Guide for Playing Areas* should be used to help construct a basis for cricket floodlighting projects.

The added usage benefits of lighting for cricket

The lighting of practice wicket areas, and particularly those that provide multi-use activities are important to extend the use of practice areas later into the evening, at times where daylight savings is not supported or simply to create opportunities for use during winter months.

Floodlighting also provides opportunities to maximise income by allowing greater programming, flexibility and optimisation of facility use. It will be important to balance these benefits against the initial expense, ongoing energy and maintenance costs and the implications for site management and supervision.

Cricket Australia also supports the floodlighting of fields that support increased usage from other sports, events or community usage where activities are compatible and the impact on playing and training areas for cricket are not adversely affected.

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The primary application of floodlighting for cricket should be based on the ability to cater for additional competition(s), carnivals and matches, and assisting to maximise the use of existing venues for a broader range of activities (for example midweek T20 fixtures).

FLOODLIGHT PLANNING

The requirements and associated issues around planning, installation and operation of floodlights are primarily controlled by Local Government Authorities and in many instances, will be different from Council to Council.

Each Local Government Planning Scheme and associated zoning controls will determine on what basis (if any) floodlighting will be an accepted use of each individual site.

In most instances a Planning Permit and associated community consultation will be required prior to a floodlighting project being able to progress.

In addition to Planning Permits, Building Permits will be required for a floodlighting installation where the height of floodlight poles exceeds local conditions and controls.

Planning challenges include:

- **Ground Conditions:** Poor or contaminated soil conditions will require special mitigation measures. In many cases, sport and recreation venues have historically been established on land fill sites or may be developed in areas where rock is present near the natural level, thus making foundations, excavating and trenching more costly to undertake.
- **Flood Inundation Overlays** and the need to factor in types of equipment used and mounting heights (eg. electrical safety).
- **Light spill** into nearby residential areas and minimisation of light that may be deemed obtrusive.
- **Nearby transport systems** such as rail and road usage and potential adverse impact from light spill.
- **Major utility services** underground or overhead prevalent through community sport and recreation grounds potentially limiting pole placement and clearances for maintenance access.
- **Potential impact of aviation:** All venues within 6 kilometres of an airport need to advise the Airport Operator and limitations may be placed on floodlight intensities and/or pole heights potentially acting as obstructions.
- Provision for **cyclone and earthquake withstand conditions.**
- **Ecological consequences** and limitations placed on artificial lighting where venues exist close to significant habitat areas.

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Indentify planning constraints early in a project and design & budget accordingly for them.

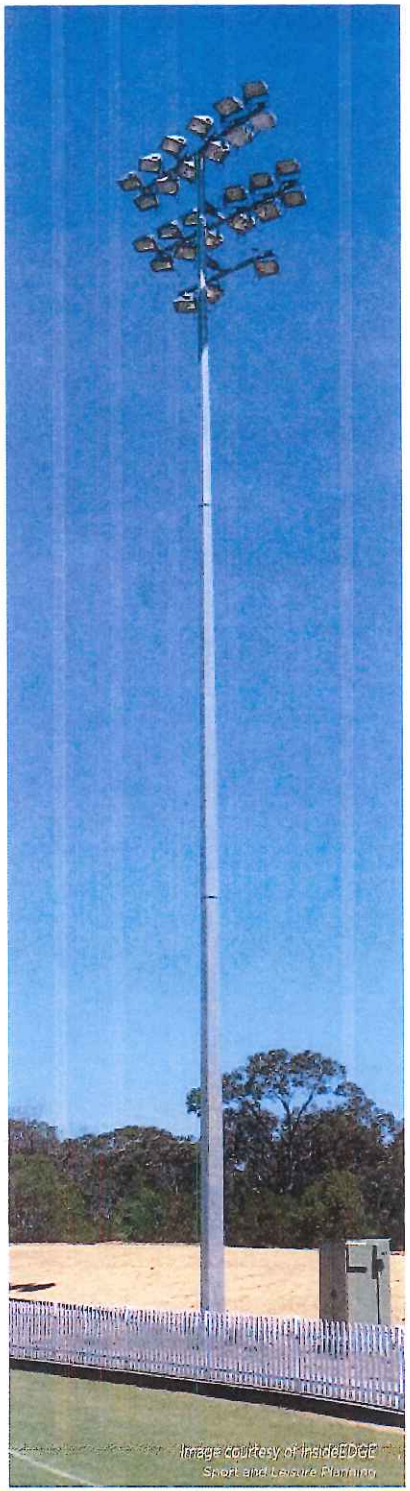

Image courtesy of InsideEDGE Sport and Leisure Planning

LIGHTING STANDARDS FOR CRICKET

Australian Standards

No Australian Standard (AS) specific to Outdoor Cricket floodlighting in Australia currently exists.

AS 2560.1 General Principles of Outdoor Sports Lighting provides the basic principles on which outdoor sports field lighting should be provided (including cricket fields). Cricket has historically followed Australian Standards developed for similar fast moving small ball sports such as Baseball and Softball (AS 2560.2.6) and Hockey (AS 2560.2.7) to guide cricket field floodlighting developments to date.

There is also no Australian Standard that offers specific guidance on the lighting for Indoor Cricket. Instead the requirements for indoor sports played at multi-purpose indoor sports centres are captured more generally within Australian Standard *AS 2560.2.2-1986 Guide to Sports Lighting – Part 2.2-Lighting of Multi-purpose Indoor Sports Centres.* **This standard is for multi-purpose sports and not applicable 'to the lighting of areas dedicated to a specific sport'.**

International Standards – EN 12193

The *European Sports Lighting Standard 'EN 12193 Light and Lighting – Sports Lighting 2007'* contains recommendations specific to both Outdoor and Indoor Cricket. The requirements for Outdoor Cricket specified match those also prescribed for Baseball in EN 12193.

IES Lighting Guide LG 4.01 Outdoor Cricket - 2013

The Professional Body representing Lighting Design in Australia and New Zealand, the Illuminating Engineering Society of Australia and New Zealand has developed a *Lighting Guide for Outdoor Cricket. LG-4.01 Sports Lighting: Cricket - 2013.*

This guide does not cover Indoor Cricket. It notes a separate guide is to be published for Indoor Cricket LG-4.02 Sports Lighting: Indoor Cricket however this has no identified timeframe for its development.

This *Lighting Guide for Outdoor Cricket LG - 4.01* offers a wide range of relevant technical guidance information for the lighting of cricket venues. It refers to the Class I, II and III (or 1, 2 and 3) categories in the specification of Lighting Standards and cites the European Lighting Standard EN 12193 as a reference.

The Lighting Class system per European Standard EN 12193 is recognised in this Guidance Note as the basis for community cricket facility lighting guidance.

The lighting technical parameters in the *IESANZ Lighting Guide for Outdoor Cricket LG - 4.01* for non-televised venues are consistent, in the main, with the horizontal illuminance parameters contained in European Standard EN 12193.

EN 12193 does however contain the further general sporting requirement that Vertical illuminance be measured 1m above ground and not be less than 30% of the horizontal level. The provision of adequate vertical illuminance is recommended with consideration of the levels recommended in EN 12193.

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The *IESANZ Lighting Guide for Outdoor Cricket LG - 4.01* offers a structured set of requirements that knit with requirements also listed in European Standard EN 12193. It offers a basis for lighting of community cricket facilities used for Outdoor Cricket in Australia and provides relevant information in the absence of any specific Australian and New Zealand Standard.

The provision of adequate vertical illuminance needs to also be considered with reference to EN 12193.

Any corresponding recommendations for Indoor Cricket should also be considered if a proposed corresponding *IESANZ Lighting Guide LG 4.02* is published specific to Indoor Cricket.

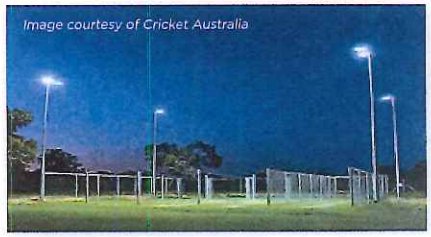


Image courtesy of Cricket Australia

Queensland Cricket Technical Guidelines: Cricket Oval and Practice Wicket Floodlighting

The *Cricket Oval and Practice Wickets Floodlighting – Queensland Cricket Technical Guidelines* offer technical recommendations of a detailed nature for cricket playing fields and also represents a suitable lighting basis.

Guidance for practice wickets and multiple field modified cricket are also provided.

Lighting technical parameters for horizontal illuminance are consistent, in the main, with European Standard EN 12193 and the *IESANZ Lighting Guide for Outdoor Cricket LG - 4.01*, and detailed specifications for the provision of Vertical Illuminance are also provided.

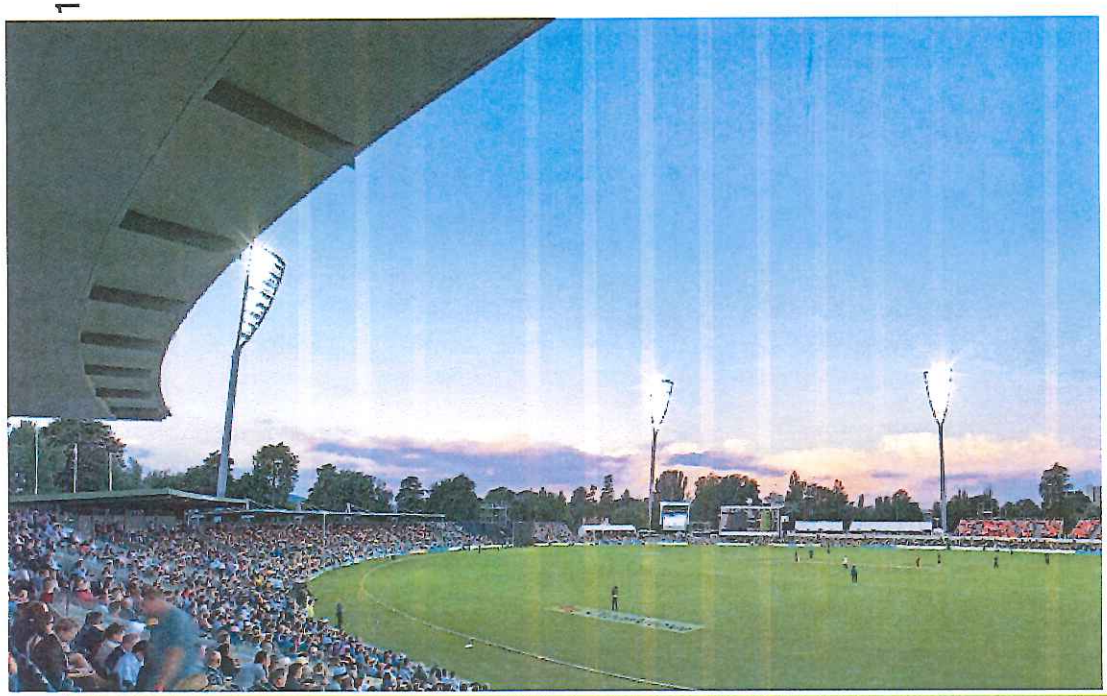
Designs compliant with the requirements of the *Cricket Oval and Practice Wickets Floodlighting – Queensland Cricket Technical Guidelines* are seen as compatible with the recommendations in this Guidance Note, with the exception that a Glare Rating minimum GR=50 is adopted in-line with that recommended in *IESANZ Lighting Guide for Outdoor Cricket LG - 4.01*, for all levels of competition including Class III.

Television Broadcast Lighting

Because lighting for television broadcast involves a range of further considerations that are only expected to apply at International and Domestic / First Class venues, lighting requirements are not specifically considered within this Guidance Note.

IESANZ Lighting Guide for Outdoor Cricket LG - 4.01 does however address the requirements for International and Domestic / First Class venues and Colour Television Broadcast for cricket in the event further details are required.

Image courtesy of Musco Lighting



CRICKET PLAY FORMATS

This Guidance Note considers five unique playing area situations.

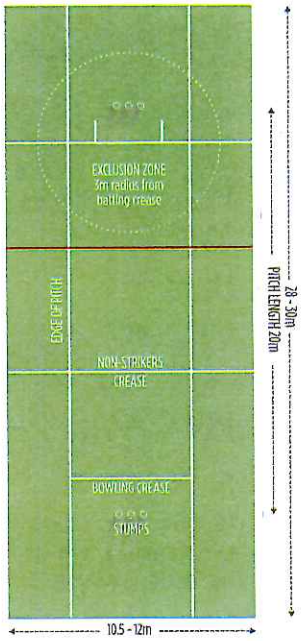
1. Outdoor playing area
2. Outdoor practice nets
3. Outdoor multi-oval formats
4. Indoor Cricket court
5. Indoor practice nets.

Sporting dimensions and pertinent definitions are detailed within other sections including **Guidance Note 01: Pitches and Playing Fields, Guidance Note 02: Outdoor Training Facilities and Guidance Note 07: Indoor Cricket.**

The figures below identify key common elements referenced for **the lighting of outdoor playing areas and Indoor Cricket court situations only.** The areas for *outdoor practice nets, outdoor multi-oval formats and indoor practice nets* are not represented visually as there are no formalised or standardised dimensions for these play environments.

The varied dimensions of playing areas must be a key consideration when planning and designing lighting infrastructure for both indoor and outdoor play and practice.

Indoor playing area dimensions

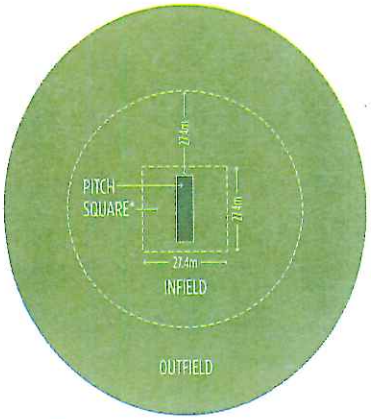


Outdoor playing area dimensions

LEVEL OF COMPETITION	PREFERRED PLAYING FIELD DIMENSIONS	
	MINIMUM	RECOMMENDED
INTERCRICKET (AGES 5 TO 8)	25m	30m
UNDER 10	30m	40m
UNDER 12	40m	45m
UNDER 14	45m	50m
UNDER 16	45m	55m
OPEN AGE (COMMUNITY CLUB)	50m	60m
OPEN AGE (PREMIER/REGIONAL)	65m	75m
DOMESTIC MEN'S AND UNDERAGE NATIONAL MALE EVENTS	82m	82m
DOMESTIC WOMEN'S AND UNDERAGE NATIONAL GIRLS EVENTS	58m	58m

Further details are available on playing field dimensions in *Guidance Note 1: Pitches and Playing Fields*

Outdoor cricket field of play



** The SQUARE (inclusive of the turf table) is the specifically prepared area of the field of play with which the match pitch is situated. It is generally an area 27.4m x 27.4m as defined in EN12193.*

LIGHTING PERFORMANCE

The planning, design and layout of floodlighting infrastructure is critical to ensure the required uniformity of illumination, to minimise glare and obstruction to participants and play and to minimise the obtrusive effects of outdoor lighting.

Floodlighting illuminance levels for most sports depend on the following three factors:

1. **Safety and comfort of participants, officials and spectators**
2. **The size, speed and contrast of the ball, and**
3. **The level of competition to be played (and trained for) under floodlit conditions.**

As a fast moving ball sport the lighting illuminance requirements for cricket are generally comparatively higher than for the ball sports of Australian Rules Football, Rugby codes and Football (Soccer) – the seasonal sports that cricket typically shares venues with.

Illuminance requirements are most important in the centre wicket (pitch) and square areas where heightened activity occurs. For this reason higher illuminance levels are specified in this area than for the outfield.

Illuminance is also important to adequately disclose the position of boundaries.

There are also several other factors in lighting design that need to be taken into account, including the following:

Uniform lighting ensures the eye is not forced to compensate for marked changes in lighting levels through perceived light and dark patches in the field of view during play and is thus able to adequately gauge the trajectory and position of the ball and that of other participants.

Control of glare is important to ensure visual comfort is acceptable for all sports participants and spectators. In practice, glare is controlled by ensuring floodlights are mounted at adequate height and selected from types that well control the distribution of light to the playing surface.

Colour temperature of the floodlight lamps is the colour the lamp, and light it emits, appears and should be consistent and ideally one value between 4000K and 6000K.

Colour rendering measured as Colour Rendering Index (CRI) shall ≥ 65. This index measures the degree to which the playing area and colours lit are accurately portrayed to participants and spectators.

Lighting objectives

Lighting objectives for community cricket adapted from the *IESANZ Lighting Guide for Outdoor Cricket LG - 4.01* include, to:

- create good visibility for players, officials and spectators;
- provide sufficient and uniform illumination of the field and the ball through its flight;
- convey the scene and player team colours;
- produce a suitable visual background against which the players and the ball are contrasted to enable quick and clear identification;
- control and restrict glare;
- control obtrusive lighting impacts to neighbours and limit waste upward light.

Play level classifications

Classifications (Class I, II & III) are defined under the European Lighting Standard EN 12193 and adapted for cricket as follows:

Lighting Class I – International and National play shall meet this classification.

Class I is set for top level competition.

In the cricket context, this level is likely to include non-televised international, domestic, first-class and state level fixtures and events.

Venues will be designed to accommodate international and national competition which generally involves large spectator capacities with long potential viewing distances. Top level (high performance) training can also be included in this Class.

Lighting Class II - Regional Level Competition or Local Club Competition play shall meet this classification.

Class II is set for mid-level competition such as Premier, regional and/or high level club competition, which may involve medium size spectator capacities with medium viewing distances.

Premier cricket, high level club or regional squad training can also be included in this Class.

Lighting Class III - Low Level Competition play shall meet this classification.

Class III is set for local community club (selective only) or recreational level competition which does not generally involve spectators.

General training, physical education (school sports) and recreational activities can also be included in this Class.

Cricket Training - Match Practice and Training In addition reduced levels of lighting may also be suitable for centre wicket cricket training.

Selection of the Lighting Class (EN12193)

LEVEL OF COMPETITION	LIGHTING CLASS		
	I	II	III
INTERNATIONAL AND NATIONAL	✔		
REGIONAL	✔	✔	
LOCAL	✔	✔	✔
TRAINING		✔	✔
RECREATIONAL/SCHOOL SPORTS (PHYSICAL EDUCATION)			✔

Table source: EN 12193 – 2007: Table 3

An important task is the categorisation of the Lighting Class for a prospective venue. Notably EN 12193 reflects the fact that more than one level of play may occur under a given classification.

The Lighting Classes as defined above are adapted for use within the Australia cricket context, also addressing the community cricket levels of play and associated club structure, as the basis to define recommended cricket lighting criteria in the following tables.

LIGHTING CRITERIA FOR OUTDOOR CRICKET

Lighting Criteria for Non-televised Matches

HORIZONTAL ILLUMINANCE (MAINTAINED)*						
CLASS	SQUARE			OUTFIELD		
	AVERAGE LUX	UNIFORMITIES		AVERAGE LUX	UNIFORMITIES	
		Emin/Eave, U1	Emin/Emax, U2		Emin/Eave, U1	Emin/Emax, U2
I	750	0.7	0.5	500	0.5	0.4
II	500	0.7	0.5	300	0.5	0.4
III	300	0.5	0.5	200	0.3	0.3

MINIMUM COLOUR RENDERING, RA8	MAXIMUM UNIFORMITY GRADIENT, UG	MAXIMUM GLARE RATING, GR
>65; preferable** >90	20% per 5m	50†

* *Values of illuminance measured at the time of commissioning an installation (i.e. "day one") should be greater than the maintained illuminance values shown above - see maintenance clause. A nominal maintenance factor of 0.8 is recommended, the initial values will therefore be 1.25 times the values shown in the tables.*

** *If future upgrading to a level suitable for television broadcasting is intended or likely; the selection of light sources with CRI Ra≥90 should be considered.*

† *GR should be ≤40 for each batsman in direction of view towards the opposite wicket.*

Source: IESANZ Lighting Guide for Outdoor Cricket LG - 4.01 : Table 1

Lighting Criteria for Cricket Training and Match Practice

LEVEL OF PLAY	AVERAGE HORIZONTAL ILLUMINANCE (MAINTAINED), LUX	UNIFORMITIES		MINIMUM COLOUR RENDERING, Ra8	MINIMUM GLARE RATING, GR
		Emin/Eave, U1	Emin/Emax, U2		
Match practice	200	0.6	0.4	65	50
Non-body contact training*	100	0.5	0.3	65	50

* *Ball training and physical training: non-body contact only.*

Source: IESANZ Lighting Guide for Outdoor Cricket LG - 4.01 : Table 3.

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Refer to *IESANZ Lighting Guide for Outdoor Cricket LG - 4.01* for guidance for International and Domestic / First Class matches which are likely to involve cricket at the professional level and cater for televised matches.

OUTDOOR CRICKET LIGHTING CLASSIFICATIONS AND ASSOCIATED CONSIDERATIONS

CRICKET FACILITY HIERARCHY	CRICKET PROFESSIONAL TELEVISED MATCHES	CLASS I SEE A	CLASS II SEE B	CLASS III SEE C	CRICKET TRAINING & MATCH PRACTICE SEE D & E
International	✔	✔			
Domestic / First Class	✔	✔	✔		
Premier / Regional		✔	✔	✔	
Club (Home)			✔	✔	✔
Club (Satellite)			✔	✔	✔

Subject to specific competition risk assessment and consultation with the relevant Cricket Association and facility provider noted below:

A. Class I - Non-televised high level competition use anticipates:

- Non-televised matches.
- International / Domestic match and training use.
- Use at the **'Elite and Mastery'** pathway levels.
- Selective ancillary use by Premier / Regional levels (eg finals).
- Use at the **'Talent'** levels of the cricket pathway – particularly *'Breakthrough – Australia A'* and *'CBA Shooting Stars'* and *'Strong Performances – National Senior Competitions'*.
- Capacity for large spectator galleries.
- Long potential viewing distances.

B. Class II – Club competition use anticipates:

- Non-televised matches.
- Domestic / First Class training use.
- Club (Home) or Club (Satellite) match and training use.
- Use at the **'Talent'** pathway levels particularly 'Skill & Determination – National 2nd Tier Competition and performance program' and 'Potential is identified – Premier 1sts, National youth competitions and programs'.
- Capacity for medium spectator galleries.
- Medium viewing distances.

C. Class III – Local club competition (selective only), recreational, competition and training use anticipates:

- Non-televised matches.
- Club (Home) and Club (Satellite) match use under risk assessed conditions and agreed by relevant Cricket Association or competition administrator.
- Club (Home) and Club (Satellite) training use.
- Use at the **'Talent'** pathway levels under risk assessed conditions and agreed by relevant Cricket Association, competition or program administrator, particularly for 'Potential is identified – Premier 1sts, National youth competitions and programs'.
- Use at the **'Foundation'** level for 'Playing and Competing' participation levels under risk assessed conditions and agreed by relevant Cricket Association or competition administrator, particularly junior and local senior competition and recreational level play.
- Generally involving small to no spectator galleries.

D. Cricket training and match practice at a minimum 200 Lux installation anticipates:

- Use at the **'Foundation'** pathway levels under risk assessed conditions and agreed by relevant Cricket Association or competition administrator, particularly for Playing & Competing - Junior and Senior Competition and Learning the Skills – MILO in2Cricket & MILO T20 Blast.

E. Cricket training at a minimum 100 Lux installation anticipates:

- Use at the **'Foundation'** participation levels under risk assessed conditions and agreed by relevant club user or program administrator and asset manager, particularly for 'Learning the Skills – MILO in2Cricket & MILO T20 Blast' and 'Get Moving' - social activities.

RISK ASSESSMENT

Each level of cricket competition can occur across more than one Lighting Class.

This is a reflection of the differences that exist in playing standards and abilities even within a single level of competition.

For example the decision as to whether to categorise a specific outdoor competition as requiring venue lighting to Class II (500 Lux square / 300 Lux outfield) or as Class III (300 Lux square / 200 Lux outfield) will depend on the risk assessment.

Risk Assessment and Insurance coverage are pre-requisites for conducting night cricket activities under floodlights.

For each floodlit venue, verify with the venue insurer and the relevant Cricket Association the validity of insurance for the cricket activities proposed under floodlights and abide by the relevant Cricket Association's conditions and further guidelines for night play under floodlighting. **In the absence of an approved Australian Standard specifically for cricket, this risk assessment is a critical component and should have input from the local competition administrators, participating clubs, players and relevant land owners.**

Examples of risk factors to consider include:

- Composition of the competition (eg. the likelihood the competition will contain elite level players and/or express pace bowlers).
- Senior versus junior levels of play and age groups concerned, as physical capacities will vary.
- Extent of safeguards imposed by competitions (eg. speed restrictions or hard versus soft ball use).
- Extent of mandated protective equipment such as helmets, pads and other protective equipment.
- Extent to which activities that take place under lights are controlled (eg. practice drills performed under similar conditions).
- Extent to which activities may occur in smaller groups which allow added predictability regarding matters such as ball speed, trajectories and positions of participants.
- Visual aids such as playing with a white ball, specific sight screen measures to minimise distracting background or help improve the contrast with the ball during delivery.
- Any other specific measures taken to further reduce the potential for injury (eg. auditing of lighting systems).
- Factors disclosed from research of cricket competition and training under floodlights
- Other risk mitigation initiatives taken by organisers (eg. night play risk undertakings by participants).
- Other risk factors raised for consideration by venue / Cricket Association insurers as a condition for providing insurance.
- Legal framework under which a competition will run and the nature of the legal remedies available against clubs and associations for litigants seeking recourse for personal injury.

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It is recommended that the Lighting Classification of each level of competition undertaken by the relevant Cricket Association be established within a Risk Management Framework to offer a sound basis under which competition and training activities can take place under lights.

COMPATIBILITY OF CRICKET LIGHTING

The above performance standards at Class II, Class III and Training and Match Practice floodlighting for community cricket are also compatible with a range of other field based sports and activities. This means venues developed around other sports may be suitable or readily adapted for cricket and vice-versa.

The compatibility table illustrates expected lighting relationships between codes and may help identify opportunities for collateral use between cricket and other codes. This is expected to become increasingly important as the large cost for communities to construct and maintain venues increases the demand to maximise its utility.

When checking compatibility of use, note that with the exception of Baseball and Softball, the Football Codes and Hockey express the lighting requirements as consistent values across the entire play area. Cricket and Baseball / Softball require a general outfield level with a higher square or infield requirement respectively.

For example semi-professional Australian Rules Football at 200 Lux will be suitable for cricket match practice, but may not be suitable for Class III unless specific measures have been taken to boost the centre square horizontal illuminance to 300 Lux and comply with other parameters eg. vertical illuminance and glare.

CRICKET LIGHTING COMPATIBILITY WITH OTHER CODES

Cricket Lighting Class	AFL / Rugby Codes / Soccer AS 2560.2.3	Baseball /Softball AS 2560.2.6[4]	Hockey AS2560.2.7[5]
Class I 750 / 500 Lux	Football (All Codes) Professional[1] 500 Lux	Baseball AAA and Softball International 750/500 Lux	Class I 500 Lux[5]
Class II 500 / 300 Lux	Football (All Codes) Semi-Professional[2] 200 Lux		Class II 250 Lux[5]
Class III 300 / 200 Lux	Football (All Codes) Semi-Professional[3] 200 Lux	Baseball & Softball Club Competition or bat & ball training 250/150 Lux	Class III 200 Lux[5]
Match Practice 200 Lux	Football (All Codes) Semi-Professional[2] 200 Lux		Class III 200 Lux[5]
Non-body contact training	Amateur Club Competition & Match Practice[3] 100 Lux		

Footnotes:

1. *AS 2560.2.3 for Football (All Codes) recommends 500 Lux with Uniformity of 0.7 Minimum to Average and 0.5 Minimum to Maximum as per Class I.*
2. *Semi-Professional venues may be adapted for Cricket with additional centre square lighting. Conversely Cricket Class III may be adapted for Semi Professional Football Codes so long as an overall oval Uniformity of 0.6 Minimum to Average and 0.4 Minimum to Maximum can be obtained. Venues catering for Match Practice Cricket are expected to comply with All Football Codes Semi-Professional standard and vice versa.*
3. *Football Code Amateur Club Competition may also cater for selective cricket participation use.*
4. *Baseball and Softball Lighting is specified in AS 2560.2.6. In addition, peak Baseball bodies are known to have prescribed additional lighting requirements (eg Baseball Victoria).*
5. *Hockey lighting standards are those referred to by the International Hockey Federation (FIH). These align with European Standard EN 12193, except the FIH sets Class II minimum as per Class III at 200 Lux. Uniformity is generally specified higher than for Cricket (0.7 Minimum to Average and 0.5 Minimum to Maximum). Such higher uniformities may be possible but are unlikely delivered at cricket venues designed for Class II and III. Conversely however, Hockey venue lighting is likely to meet the lighting levels for cricket and a co-share use with cricket may be possible with due consideration to the smaller rectangular field size. It is important to also note there is an Australian Standard for Hockey whose values generally align with the above for Class I and Class II, but a 30 Lux level design is permissible for Physical Training, though rarely is such a low level used in practice.*

i

Because standards and requirements of sporting governing bodies evolve, this information is to be used as a guide only. Verification with venue operators, Local Councils and the relevant peak sporting bodies as to the extent to which venues can accommodate compatible lighting that encourages multi-purpose access and thus opportunities for outdoor cricket play should be sought.

i

Cricket and Australian Rules Football are natural seasonal ground use companions. Closer scrutiny of existing Australian Rules Football lighting levels and the further introduction of CA-AFL approved artificial turf fields may reveal play opportunities for night cricket.

Also venues developed specifically for bat / stick sports such as Baseball and Hockey tend to install higher lighting levels more naturally compatible with cricket. This invites consideration of modified use overlays for Cricket where natural grassed fields are shared.

CRICKET OVAL FLOODLIGHTING LAYOUT CONSIDERATIONS

Key questions in developing a floodlighting layout are:

- Light tower or pole locations, including player safety clearances.
- Mounting height and aiming philosophy for floodlights.
- Glare control.
- Obtrusive lighting limitation per AS 4282.

In determining a suitable layout for cricket installations, extensive guidance is provided in *IESANZ Lighting Guide for Outdoor Cricket LG - 4.01.* The following is a précis of the key information.

Light tower or pole locations

For the large majority of community cricket grounds, the typical design will include a 4 pole design.

6 pole designs are recommended for televised play conditions. They may also be required to improve spill lighting control.

A 5m clearance (run-off) zone shall be provided from the playing area or boundary line to any light pole. As per the Football (All Codes) Standard, placement can be immediately behind a permitted boundary fence.

The Football (All Codes) Standard AS 2560.2.3 provides details on establishing the pole locations and pole heights. The same basis is acceptable for community cricket.

Figures 01 and 02 provide details of the recommended pole location zones for both a 4 pole and a 6 pole system. In these figures the 'permitted' zones match those of Australian Rules Football.

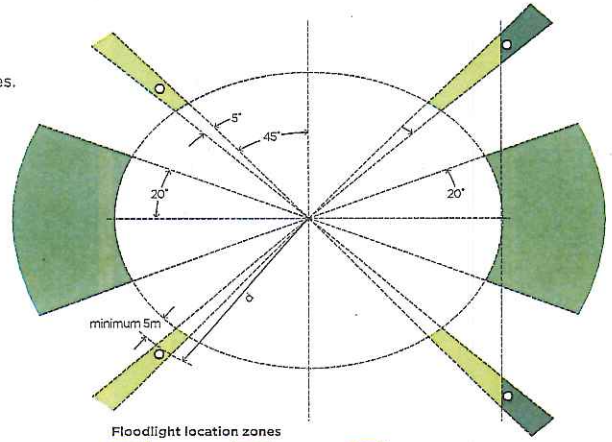


Figure 1: 4 Pole System
Source: Adapted figure 2 of IESANZ LG4.01

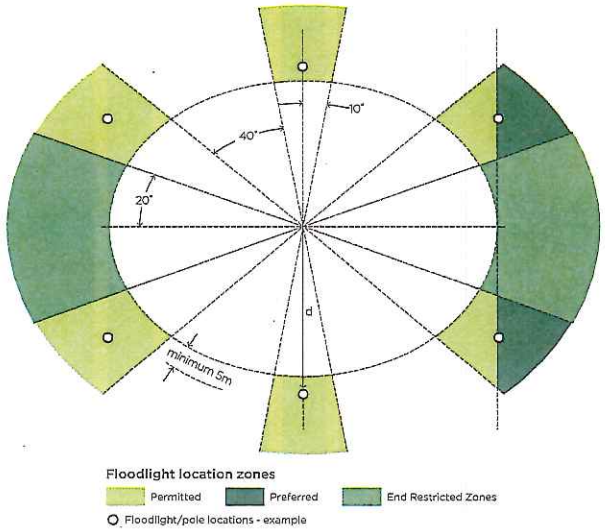


Figure 2: 6 Pole System
Source: Adapted figure 3 of IESANZ LG4.01

Pole heights

Adequate pole height is important to ensure good seeing conditions for participants which minimise glare to within prescribed levels and allow light to uniformly distribute throughout the playing area.

Given community based facilities will often share with football codes adopting the same criteria when setting the pole heights is beneficial.

Pole heights are recommended based on the distance d determined as per the above diagrams.

For non-televised venues the mounting height is recommended as **h = 0.36 x d** where:

h = height of the lowest floodlight above the field surface (which may differ from the height above the base of the pole).

d = horizontal distance between floodlight oval centre or major axis through the centre of the oval.

The above corresponds to an angle of 20 degrees to the lowest floodlight from the centre of the oval (4 pole system) or oval major axis (6 pole system) **(tan20°=0.36).**

In any case pole heights less than 25m are not recommended for the lighting of outdoor cricket playing fields.

For Class I venues, consideration should in any case be given to increasing the pole heights to obtain 25 degrees to the lowest floodlight from the centre of the oval and thus **h = 0.47 x d (tan25°=0.47).**

This greater height would also be required should a venue wish to upgrade for television broadcast at a subsequent time and would also be required if the venue wished to accommodate football code professional play standards.

Floodlighting aiming

Floodlight aiming angle is generally recommended to not exceed 65°. The aiming angle is the angle in the vertical plane between the line of peak intensity and a downward vertical line connecting the centre of the floodlight to the ground below. Floodlighting designs will often refer to this as the floodlight 'tilt'.

A higher mounting height will better facilitate control of glare with some publications recommending an angle up to 25 degrees to the lowest floodlight.

Conversely the *IESANZ Lighting Guide for Outdoor Cricket LG - 4.01* proposes that a 4 pole system pole height may be based on the distance to a major axis rather than centre of the oval.

While the resulting pole heights with either method may be little different, keeping the basis consistent with Australian Rules Football fulfils both Cricket and Australian Rules Football requirements and aids utility.

CRICKET OVAL FLOODLIGHTING LAYOUT CONSIDERATIONS (CONT)

Glare control

A common situation with existing playing areas is the type of floodlights selected combined with a lower than recommended mounting height often see floodlights being tilted up and aimed too high in an effort to try and project light further into the play area. This in turn can lead to glare from floodlights which create difficult visual conditions for sports play and also for spectators. This may prove problematic for obtrusive light.

It is essential to give due consideration to the pole locations, the mounting of floodlights at adequate height and the aiming angle of floodlights to limit glare to within acceptable levels.

Calculation of glare rating (GR) as setout in AS 2560.1 is recommended and designs that maintain glare within the limits prescribed in the 'Lighting Criteria' Tables. Note the need to reduce glare where the player's direction of view is toward the pitch. The 'Lighting Criteria' Table footnote recommends GR not exceed 40 in these viewing directions.

Glare calculations assume a 'grass' colour with diffuse reflectance in range of 0.15 to 0.25.

The positions on the play area where Glare Rating calculations are to be made match those for Australian Rules Football as per AS 2560.2.3 Figure 6 with additional positions relating to the cricket wicket. These are shown in Figure 3 adjacent.

The aim of making recommendations on pole locations, heights and floodlight aiming is to obtain good seeing conditions for play.

Some modification may be permitted with detailed design and calculation by experienced professional floodlighting designers provided compliance is obtained with the lighting criteria tables.

Note there are also further lighting criteria that need tobe observed for televised use which will impact pole and floodlight locations, floodlight types and aiming. Refer to IESANZ Lighting Guide for Outdoor Cricket LG - 4.01 for further guidance.

These positions are called the Observer Positions and are taken from a height 1.5m above the Principal Playing Area (PPA).

Note: *Yellow* notations indicate observer positions for oval infields and practice wickets. *Green* notations indicate observer positions of playing area outfields.

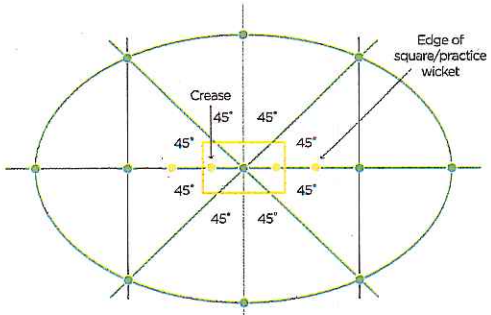


Figure 3: Observer Positions - Glare Calculations
Cricket Oval Square/Outfield and Practice Wickets
Observer Positions: Oval square and practice wickets
Observer Positions: Oval outfields
Source: Cricket Oval and Practice Wickets Floodlighting - Queensland Cricket Technical Guidelines (adapted)

Obtrusive lighting control

Australian Standard AS 4282 - Control of the Obtrusive Effects of Outdoor Lighting, lists criteria for compliance to control the adverse impacts of spill light on neighbouring surrounds.

The Standard recognises 2 sets of lighting parameters based on 'pre-curfew' and 'curfew' hours of operation.

High illuminance installations such as Cricket can be exacting for compliance with light spill limitations and can significantly impact layouts where venues are situated in near proximity to residential neighbourhoods.

Review of the likely impacts of spill light at an early stage in the project is recommended to avoid major change requirements in a progressed design.

OUTDOOR PRACTICE WICKETS FLOODLIGHTING LAYOUT CONSIDERATIONS

General

In general, lighting for outdoor practice or training facilities should follow similar principles as outlined for outdoor cricket playing field lighting.

The principles and information provided within this section of the Guidance Note on outdoor practice and training facilities is also based around the minimum size of a single practice wicket, being 33m x 4m. As the size and dimensions of practice areas will vary considerably, this dimension has been used as the basis.

The *Cricket Oval and Practice Wickets Floodlighting - Queensland Cricket Technical Guidelines* offer detailed technical recommendations on the lighting of outdoor practice nets and consider a floodlighting example of a dual practice wicket net.

Lighting standards and guideline recommendations

There is no specific Australian Standard for lighting of cricket practice nets. Neither is there any guidance in allied Australian Standards for Hockey and/or Baseball or in European Sports Standard EN 12193.

IESANZ Lighting Guide for Outdoor Cricket LG - 4.01 recommends the lighting of outdoor practice wickets should match the standard of play at the venue for non-televised competitions as listed per the 'Lighting Criteria' tables that are referenced earlier within this Guidance Note.

The Cricket Oval and Practice Wickets Floodlighting - Queensland Cricket Technical Guidelines offers technical guidance recommendations of a more detailed nature for practice wickets. The listed Lighting Technical Parameters for horizontal illuminance are consistent, in the main, with the *IESANZ Lighting Guide for Outdoor Cricket LG - 4.01*, however detailed requirements exist in the *Cricket Oval and Practice Wickets Floodlighting - Queensland Cricket Technical Guidelines* for the calculation of practice wicket vertical illuminance.

Blacktown International Sports Park (NSW)
Image courtesy of Musco Lighting

Practice wicket general lighting considerations

Practice wickets / training nets have the advantage of being a much smaller area to light. The lower proportionate cost compared with lighting a whole playing field therefore means higher lighting levels can be obtained more affordably.

The following considerations in lighting practice wickets / training net facilities are noted:

- Avoid poles/floodlights on the wicket axis (ie. behind the bowler's run-up or batsmen's wicket).
- Factor the light loss due to wired fence or netting. The extent to which light will be reduced depends on the light transmission of the netting. Obtain details and factor this light loss into the illuminance design calculations.
- Provide a minimum of 4 poles located behind the batting and bowling crease and outside the pitch area.
- Consider the use of white balls and dark colour netting as a visual aid to increasing contrast and visibility.

Pole mounting height

Determine pole mounting height to satisfy the lighting technical parameters.

Practice wicket lighting measurements

The minimum calculation grid shall be as per EN12193 Indoor Cricket Nets of same dimension equating to a 2m long x 1m wide grid. A 1m x1m grid will provide a finer resolution where required.

MODIFIED JUNIOR CRICKET MULTIPLE FIELDS AND PITCHES

Similar principles outlined for outdoor cricket playing field lighting apply. Playing areas may be of varying size to accommodate multiple pitches and matches on a site and may be of a temporary nature.

Sizes may range from 30m to 75m typically depending on the level of competition and age of players. It may be impractical to light each playing area individually. Planning that keeps a consistent orientation of pitches is preferred to minimise glare to bowlers and batsmen.

The Cricket Oval and Practice Wickets Floodlighting – Queensland Cricket Technical Guidelines considers a floodlighting example of modified junior cricket multiple fields and pitch design.

Pole layouts shall ensure each play area receives lighting from multiple directions and complies with the lighting technical parameters listed earlier within this Guidance Note.

FURTHER FLOODLIGHTING CONSIDERATIONS

Besides lighting the cricket playing area there are several further lighting aspects to consider.

White ball use

The use of a white, more highly reflective ball, can be an important aid to improve visibility under floodlights.

Benefits of white ball use will reduce where:

- The ball wears and takes on a darker physical appearance requiring more frequent replacement.
- The ball is being viewed against a predominantly white background such as a fixed white sight screen or players wearing white coloured clothing.

The choice of ball for night matches is subject to ongoing research. The type and colour of ball used under floodlights shall be specifically agreed to take account of latest research and specific guidelines provided through Cricket Associations.

Safety lighting

Any venue catering for night play should give consideration to whether player safety lighting is necessary. This may be via use of hot-restrike control systems or UPS / standby generator system backups.

Spectator viewing areas

Consider in the floodlighting design open areas occupied by spectators in the design of venue lighting.

Note the European Standard requirement of 10 Lux minimum average to the spectator viewing areas for spectator visual comfort shall be considered in those areas specifically set aside for outdoor spectator viewing.

Consider that little or no playing area floodlighting may beneficially light enclosed or covered spectator viewing areas. Therefore make allowance for separate lighting systems in accordance with the Relevant Building Regulations. Comply with the further recommendations of the relevant Australian Lighting Standards, for example AS 1680 series for Indoor Lighting and AS 2293 for Exit and Emergency Evacuation Lighting.

Public lighting

Many community venues centre night time activity around the clubrooms and playing area connections. Commonly there is a car park and access road. Larger shared use sites may incorporate additional pedestrian accesses.

Public lighting is not attended to by sports floodlighting. The applicable Lighting Design Standard is AS 1158.3.1 for Pedestrian Category lighting. Separate review and consideration of the need for ancillary pubic lighting should be made at the time of new or upgraded venue design at which time may be most economically provided.

Emerging technologies

Consider the likely impacts of emerging technology when designing venue lighting. Higher efficiencies from new Solid State Lighting (SSL) technologies (eg. LED) may impact light pole headframes and foundation load capacities, as well as potentially reduce power demand and energy consumption which may in turn permit reduced electrical cable supply and alleviate, in some cases, the need for power supply upgrade needs.

Environment and climate change considerations

Community use facilities need to consider environmental factors with new or upgraded lighting, including:

- **Obtrusive light** - Comply with AS 4282 to minimise light spill to neighbouring sites such as residential areas and including the impacts on transport systems.
- Selection of floodlights to **eliminate or minimise waste upward spill light** that contributes to sky glow.
- **Lighting controls** to limit operation only to curfewed times.
- **Lighting controls to cater for flexible switching** of lights to reduce levels when full lighting is not required for competition (eg. training only activities).
- **Constant light output type controls** that can reduce energy by trimming initial excess lighting levels present when an installation is in its initial phase of lamp life.
- Improved **Energy Efficiency Lamp Technologies**, for example Solid State Lighting (eg LED).
- **Remote lighting control and monitoring** - Increasingly new technologies make wireless control and remote access easier inviting greater flexibility around the scheduling of lighting operation to suit user demands and better regulate unauthorised operation.
- Strategies that **encourage waste management** in the form of lamp specifications with prolonged lamp life to reduce land fill and/or which cater for recycling of components after service life.

Operation and maintenance

Lamp replacement, energy consumption and maintenance of the installation constitute important elements in the longevity of infrastructure and can involve substantial costs to properly manage the installation over its lifetime.

IESANZ Lighting Guide for Outdoor Cricket LG - 4.01 provides information regarding the relevant considerations for maintenance.

Considerations include:

- Provision of a maintenance manual as part of the project commissioning and handover
- Determination of the maintenance cycle
- Verification of correct aiming and aiming records
- Lamp data to facilitate spot (individual) lamp replacements and bulk lamp replacements
- Cleaning interval
- Periodic aiming checks.

A number of simple but effective measures may be incorporated to aid the operation and maintenance. **Relevant examples include:**

- Multiple switching schemes to allow switch down and alternation of operation of particular lamp groups to reduce energy and lamp burning times
- Hours run indicators to manage the burn time of groups of lights and help equalise lamp run hours
- Curfew timers to automatically switch down and out floodlight installations inadvertently left on after hours
- Key switch controls and/or placement of controls that may operate floodlights in secure locations to prevent unauthorised operation
- Remote control and monitoring linkage to allow off site scheduling and policing of installation run times.

FURTHER FLOODLIGHTING CONSIDERATIONS (CONT)

Lighting compliance

Calculation and measurements for the floodlighting installation shall be to a defined grid. Selection of a suitable measurement grid is considered in AS 2560.1, European Standard EN12193 and IESANZ LG 4.01.

For calculations the grid is 5m x 5m with a 2m x 2m grid in the square.

Further guidance regarding measurement and commissioning can be found in *IESANZ Lighting Guide for Outdoor Cricket LG - 4.01* and the *Cricket Oval and Practice Wickets Floodlighting - Queensland Cricket Technical Guidelines.*

Lighting design

To guarantee a quality sports lighting installation for cricket, and to ensure local site and usage conditions are considered, a lighting design and installation specification should be developed in conjunction with a sports lighting design specialist.

The design and installation contractor proposals should be carried out and reviewed by a qualified floodlighting specialist with corporate membership of the Illuminating Engineering Society of Australia and New Zealand (MIES ANZ or higher).

A list of corporate members may be found by contacting the IES: The Lighting Society via *www.iesanz.org/*

LIGHTING CAPITAL PROJECT BUDGET ELEMENTS

The following is a summary of the cost elements that will typically arise in a cricket lighting project.

Geotechnical (soil report)

Undertake a soil test at each proposed pole location.

A likely 4 pole layout will require 4 site test bore holes and an associated Geotechnical report.

Geotechnical advice is essential to minimise cost risk for construction of foundations and should disclose if the proposed pole locations contain land fill, chemically aggressive soils, rock at shallow depth all of which can contribute extra cost for foundations.

Floodlights supply

Supply costs should include floodlight, lamp, site delivery and a suitable warranty.

Floodlights installation

Installation costs should include the labour to take delivery, operationally check, check the beam distribution is correctly set and mount the floodlight onto the pole, or more usually a pole cross arm.

Pole supply

Pole supply involves the provision of a suitable pole of the correct height and duty to carry the quantity of floodlights proposed. The pole supply should include supply and freight to site and offloading at suitable positions close to the point of erection at site. Check the requirements for foundation cages and ragbolts assemblies required to be cast into the foundations. Depending on the foundation design these will be either by the pole supplier or part of the civil works construction of the pole foundations.

Pole installation

Installation costs should include assembly of the light poles at site. Note rigid steel poles usually come delivered in sections that require site assembly to the manufacturer's instructions. Obtain specific installation instructions for any poles proposed with a lowering headframe or facilities for personal access and ensure inclusion for all correct installation measures.

Foundations

Concrete pole foundations are usually required, suitably designed by a professional structural engineer. The type of foundation will be determined based on the site conditions disclosed by the Geotechnical report. Common types include concrete bored piers and raft footings. Certification of the structural design and provision of building permits should also be allowed under this element.

Lifting / Cranage

Pole installation, aiming of floodlights and subsequent maintenance will usually involve high lift access machinery. Equipment such as crane trucks involves considering access both for the initial installation and subsequent maintenance.

Plan locations that do not entail access over the playing surface wherever possible to prevent oval damage, particularly during wet weather periods, as the vehicle weights are substantial.

Power supply

Electrical power consumption for floodlights is significant and is often much more than the clubroom and change facilities. Therefore plan for the anticipated installed load and make early application for any required power supply upgrades as this will likely take time to implement.

By way of example a Class III venue on an oval equal to a full size AFL oval may typically require 52 floodlights x 2Kw = 104 Kw which is a substantial load. Class II and Class I venues will be higher.

The power supply may entail having an electricity substation dedicated to the site or installed within the street which abuts the site. Works also include the liaison with the electricity distribution business to obtain site power supply connection.

Metering

Electrical bill metering requires clarification. In many instances metering for existing sports lighting may be lumped together with pavilion building services power. Under a new or upgraded installation it needs to be determined how the customer wishes to have the electricity consumption accounted for and what metering tariff is optimal for the site and its usage.

Separate electricity billing of the sports floodlighting use may well be required and/or advisable.

Floodlighting distribution boards

The electrical installation design will need to make provision for the Electrical Distribution Boards required to supply the new floodlights. This will usually be via a dedicated switchboard devoted to the floodlighting installation and may likely house the lighting controls where such controls are not remotely located in the field at each floodlight pole.

Lighting switching controls

Thought should be given to the methods of controls and the separate user groups that will be given access to the floodlight installation. Control may be via simple manual key switch controls or via keypad / touch screen type networked lighting controls. In addition remote access to turn floodlights on and off and to monitor the status of the floodlights on or off may be desired either now or in the future.

Cabling

Electrical cabling is required between the point of power supply to the floodlighting distribution board(s) and thence to each sports floodlighting pole.

The cabling arrangement will be devised to suit the switching flexibility required. Therefore it is important to either specify or agree with the designer the levels of switching flexibility required and whether only certain poles are required to operate under certain modes of operation.

Underground works (eg. pits and conduits)

The underground works are a significant cost element for many floodlight projects due to the large site distances around cricket playing fields.

Such works need to anticipate the trenching, backfilling, laying of safety warning tapes and markers in order to install the conduits. The works will commonly involve under boring of hard paved surfaces including paths and car park crossings and the concrete aprons around pavilions and paved spectator areas.

Underground pits and conduits are layed to suit the feed out to the sports floodlighting poles and may include ancillary conduits earmarked for future design such as electronic scoreboards, bowling machines or allied provisions for public lighting.

Lightning protection

Design to ensure lightning is safely conveyed to earth per AS 1768 requirements.

LIGHTING CAPITAL PROJECT BUDGET ELEMENTS (CONT)

Test, aim and commission

Testing will involve functional checks and test on the electrical installation switchboard(s) and a check to ensure all lighting is functional and safe to operate.

To obtain the required lighting performance, close attention to the aiming of the floodlights is essential. A professionally aimed installation is important to realise the specified design performance.

A design aiming diagram is required that shows the position on the ground to which each floodlight is directed. This is an important part of the installation record and can be used to restore to designed arrangement should aiming become disrupted in future.

Maintenance records

Maintenance records enable the performance of the floodlighting installation to be retained through life. Such records should contain details of the routine maintenance procedures, parts details such as recommended lamps to effect replacements and the aiming record as noted above.

Design and project management

Design and project management fees will be expended to undertake design and oversee the implementation through construction and final commissioning and for which due allowance needs to be made.

LIGHTING OPERATION PROJECT BUDGET ELEMENTS

Lighting operation needs to anticipate cost allowances for the following elements.

Energy consumption

Billing costs for energy consumed (Kwhrs) and, depending on energy tariff structure, power demand taken (Kw) will occur.

Maintenance

ROUTINE MAINTENANCE WILL BE REQUIRED.

All lamps reduce their light output over their service life and spot lamp failures will also occur from time to time. Costs to make replacement involves the cost to supply the replacement lamp and the electrical contractor charge for high access equipment hire and contractor time on site to gain access, effect the lamp replacements and test functional operation.

Routine maintenance costs are also associated with annual inspections of electrical and structural elements.

For Metal Halide Lamps conventionally used, bulk lamp replacement will need to factored as lamps reach the end of their maintained service life.

Owing to the costs involved, strategies should be considered that target reduced maintenance requirements. Examples include New Solid State Lighting (eg. LED) technologies and half switching schemes that allow lamp groups to be cycled to equalise and reduce lamp run hours. Operational controls such as remote access and user identifications and control systems that can relay information regarding luminaire operational status and early warning of abnormal operating conditions are also effective considerations.

LED lighting systems, depending on selection, can offer the further capacity for dimming of lighting levels to accommodate different play and usage options, as well as wireless control reporting of operational and maintenance status down to the individual floodlight.

Assessing supplier lighting proposals

Community cricket clubs will often find it challenging to assess the competing claims of lighting suppliers advocating use of their systems.

Professional lighting design review of submission proposals by experienced persons is therefore recommended which can check and compare the following information:

- Lighting Designer and Manufacturer.
- Make and model of floodlights used and their locations including mounting heights.
- Maintenance Illuminance plot (horizontal at ground level).
- Minimum and Maximum illuminances in square and infield.
- Uniformities U1 and U2 in square and infield.
- Vertical Illuminance calculations.
- Light loss factor used with the maintenance illuminance.
- Maximum Glare Rating at 1.5m above ground at all standard observer positions and specifically in the directions viewing the wicket.
- Lamps used with corresponding Ra 8 CRI, Colour Temperature and Lumen Maintenance Curve.
- Basis for Dirt Depreciation Factor applied to the floodlight type(s).
- Spill lighting calculations to AS 4282 at each site property boundary to include the lighting technical parameters referenced in the standard.
- Luminous Intensity compliance to Aerodrome Standard MOS 139 and any other applicable aviation standards where the installation is within 6kms of an aerodrome.

LIGHTING FOR INDOOR CRICKET

This section of the Guidance Note refers to two specific and distinct elements of lighting for indoor cricket:

1. **Indoor Cricket courts**
2. **Indoor practice nets**

Indoor Cricket 'Courts'

The lighting recommendations pertain to the Indoor Cricket 'court' play area described in **Guidance Note 07 – Indoor Cricket.**

The minimum play size is a rectangular space 28.0-30.0m long and 10.5-12.0m wide and roofed by flat netting 4.0-4.5m high.

The ball used is a modified softer ball making it lighter than a conventional outdoor cricket ball but otherwise has similar characteristics of size and stitching.

Indoor cricket 'court' play is designed to specifically appeal to a wide range of participants of mixed gender with a wide spectrum of abilities. It is a fast moving sport designed to maximise participation for all players.

Lighting standards and guideline recommendations

Australian Standard AS 2560.2.3 considers the Lighting for Multi-purpose Indoor Sports Centres and sets a recommendation for competitive play as a minimum maintained average illuminance of 500 Lux with a uniformity of 0.7 Minimum to Average at 1m above floor level.

There is however no Australian Standard specifically directed at the lighting for Indoor Cricket or the subdivision of the internal lit space into a series of 'Courts'.

European Standard EN 12193 does considers Indoor Cricket but the reference area is a larger 32m x 20m open hall space rather than a 'court'. It contains a range of illuminance recommendations being:

Class I – 750 Lux; Uniformity Min to avg= 0.7

Class II – 500 Lux; Uniformity Min to avg= 0.7

Class III – 300 Lux; Uniformity Min to avg= 0.7

The measurement plane is taken as the ground level.

The *ECB Indoor Cricket Facilities – Design Guidelines – TS7 (2011)* specifically considers Indoor Cricket Courts and recommends a (minimum) average maintained illuminance level for Club Use to National Level of 500 Lux ; Uniformity Minimum to Average = 0.8.

The measurement plane is not defined but is assumed as being at ground level.

It is recommended that Indoor Cricket Courts used for competition comply with EN12193 Class II requirements (500 Lux) as a minimum which is consistent with current AS 2560.2.2 illuminance requirements that have directed multi-purpose indoor sports hall specifications.

Where uniformity is further improved from 0.7 to 0.8 it will also permit compliance with the current *ECB Indoor Cricket Facilities – Design Guidelines* and uniformities specified for practice nets.

Indoor Cricket Practice 'Nets'

Indoor cricket practice nets anticipate function as per outdoor cricket practice nets with a similar general size of 33m x 4m.

Lighting standards and guideline recommendations

A key differentiating factor between Indoor Cricket Practice Net lighting and Indoor Cricket Courts is the use of a standard hard cricket ball. As such, the lighting requirements will be set higher to improve batter and bowler safety from the ball as a small fast moving hard projectile.

European Standard EN 12193 considers Indoor 'Cricket Nets' at the reference area of 33m x 4m.

It contains a range of illuminance recommendations being:

Class I – 1500 Lux; Uniformity Min to avg= 0.8

Class II – 1000 Lux; Uniformity Min to avg= 0.8

Class III – 750 Lux; Uniformity Min to avg= 0.8

The measurement plane is taken as ground level.

The above lighting recommendations align with those contained in the 'ECB Facilities Briefs and Guidance Notes for Indoor Sports Halls with Cricket provision – TS3' in which:

- **Class I** equates to Low Level Club / Local Club
- **Class II** equates to Mid-Level Competition Regional / Club Level
- **Class III** equates to Top Level Competition International / National Level.

For an indoor sports facility intending to cater for cricket 'practice nets' as opposed to indoor cricket 'courts', hard ball use needs to be anticipated and the capacity to illuminate to the above standards is recommended in order to deliver the capacity to more safely assess the ball movement at high speed and mitigate the increased potential for injury.

Capacity to flexibility 'convert down' to 'court' style operation, where desired, could be accommodated with switch down or dimmed lighting controls.

As with outdoor cricket practice nets, take account of the lighting transmission loss due to nets.

INDOOR CRICKET GENERAL LIGHTING CONSIDERATIONS

Refer to AS 2560.2.2 for general lighting guidance on lighting matters such as:

- General design objectives
- Interior background colour and reflectance
- Glare control
- Daylighting
- Selection of lighting systems and equipment

Specific note is made of the following aspects.

Independent operation

Consider lighting of each indoor court or practice net on an individual basis such that lighting compliance of one court is not dependent on the operation of any adjacent net(s) or court(s).

Background contrasts

Light coloured walls are recommended for indoor cricket. The ECB Guidelines TS3 and TS7 recommend reflectances of 0.7 be obtained notably with white painted walls and ceiling.

AS 1680.2.2 multi-purpose recommendations are similar for ceilings at 0.6 to 0.8 reflectance and 0.3 to 0.6 wall reflectance recommended range. Matt finishes will help avoid unwanted reflectances from daylight / artificial light sources back to participants.

Glare control from luminaires

To reduce glare to participants and spectators, positioning away from the normal lines of sight will help reduce potential for glare.

The pitch sets the preferred play orientation. Critical viewing along this axis will be aided by viewing rectangular luminaires endwise. That is running rows of luminaires aligned with the pitch axis instead of across it.

Luminaire designs which incorporate reflectors, lens or louvres designed to control the luminance and high angle light distribution will assist player comfort provided the spacings ensure an overlapping contribution from multiple light sources and a uniform lighting coverage of the play area.

Daylight

Maximise the use of daylight wherever possible with due consideration to shading of roof lights and windows to avoid daylight sky glare or glare due to beam sunlight penetration particularly at low sun angles.

Multi-purpose sports capability

Consider whether the venue is to cater for other sports use to maximise utility and factor any restriction on lighting placements and/or designs that pertain to the other sports use.

Continuation of an event in case of lighting failure

The requirements in the event of lighting failure need to be considered. At a community level the need to restage training or a match may be able to be managed where the likelihood of such occurrences are expected to be infrequent (ie. where mains supply is unusually interrupted).

In other locations where supply interruptions are more probable, consider the need for power supply backups and/or hot restrike lamp systems to permit restoration of sports lighting after an interruption.

Safe movement

Verify the spectator areas at the fringe of indoor cricket play spaces will be satisfactorily lit by the contributory light spill from the cricket play areas and provide ancillary lighting as necessary. Consider Australian Standard AS 1680.0:2009 sets 20 Lux as an indoor minimum for safe movement in publicly accessible spaces.

Exit and emergency lighting

Provide Exit and Emergency lighting in compliance with the relevant National Construction Code and AS 2293.

Controls, operation and maintenance

Lighting installations should be simply controlled and designed to allow flexibility of operation. Simple zoning can avoid the need to operate courts or pitches not in use. Capacity to daylight link and/ or use occupancy sensor lighting controls will help reduce energy and running costs when daylight levels are adequate or when a space is not is use.

Controls should be located in non-publically controlled areas such as reception / management offices accessible to duty staff.

Consider maintenance access to lighting placed above cricket nets.

Select lamps with long lifetimes to help reduce the need for frequent access. This is available with Fluorescent and Solid State Lighting (eg. LED).

Select also with regard to capacity to link with Intelligent Energy Management controls to minimise energy and maintenance burden.

DEFINITIONS

The following definitions are derived from AS 2560.2.1, AS 3665, the *IESANZ Lighting Guide for Outdoor Cricket LG - 4.01* and *Cricket Oval and Practice Wickets Floodlighting - Queensland Cricket Technical Guidelines.*

CIRCLE	The line dividing the infield from the outfield.
COLOUR RENDERING INDEX (CRI)	The ability of a light source to faithfully reproduce colour in objects. The CRI is expressed on a scale from 0-100, where 100 is the best. Sometimes also referenced as Ra or Ra8, the latter denoting the CRI as evaluated with respect to 8 standardised colours.
COLOUR TEMPERATURE	The overall colour appearance of the light itself when referring to a source as either 'warm' or 'cold'. Colour temperature is measured in Kelvin. Lower colour temperature (< 4000K) represents 'warm' light; higher (>4000K) represents 'cool' light. May be referred to be symbol 'Tk'.
CONTROL GEAR	General term for the electrical equipment to start a High Intensity Discharge (HID) Metal Halide lamp when power is applied and then to limit the electrical current once it is running. Sometimes also called the 'ballast'.
FIELD OF PLAY (FOP)	The cricket field of play is typically an oval shaped area covered in grass or artificial turf contained within a defined boundary. There is no fixed dimension for the oval size and the diameter can vary. The playing area is demarcated by a line or rope called the boundary. Also called the Principal Playing Area (PPA).
GLARE	Visual condition in which there is a discomfort or impairment of vision, or both, caused by an unsuitable distribution or range of luminance, or due to extreme contrasts in the field of vision.
GLARE RATING (GR)	A numerical rating on scale of 0 to 100 representing the degree of glare from a lighting system for given observer positions and viewing directions. Higher values correspond to greater glare from the lighting system. Refer CIE 112.
ILLUMINANCE	The intensity of light falling on a surface and is measured in lux. It is independent of surface colour or texture and simple to measure using an illuminance meter. Commonly represented by the symbol 'E'. May be either the Initial or Maintenance Illuminance and may be commonly measured as 'horizontal' or 'vertical' where the following definitions apply: ▪ **Initial Average Illuminance** – that initially provided by the lighting system when it is new and by convention after lamps are aged 100 hrs. At this time there is taken to be no depreciation of light due to lamp, luminaire or dirt depreciation factors. ▪ **Maintenance average Illuminance** – The value below which the average illuminance on the specified surface is not allowed to fall. It is the minimum illuminance at which maintenance operations, such as replacing lamps and cleaning the luminaires are to be carried out. ▪ **Horizontal Illuminance** – The value calculated or measured incident on the flat playing field directly from above, that is the incident vertically at 90 degrees to it. Measured with an illuminance meter on the ground facing up. ▪ **Vertical Illuminance** – The value calculated or measured incident on a defined vertical plane at a specified height and facing in the specified direction. Measured with an illuminance meter flat to the said surface facing in the specified direction.
ILLUMINANCE METER	A device for measuring illuminance (E) in Lux. Sometimes also referred to as a Lux Meter.
INFIELD	An area 27.4m from the pitch centreline.
LAMP	The light source – bulb, tube.
LOUVRE	An external optical assembly used to control light distribution from a luminaire – typically a frame with several parallel blades.
LUMINAIRE	The international term for a light fitting into which a lamp is installed – also called a floodlight.
LUX	The unit of measurement of illuminance.
OBTRUSIVE LIGHT	Spill light which, because of quantitative, directional or spectral attributes in a given context, gives rise to annoyance, discomfort, distraction or a reduction in the ability to see essential information.
OUTFIELD	The Outfield is the part of the field of play between the infield and the boundary.
PITCH	The pitch is a rectangular area of the field of play 20.12m in length and between 1.83m to 3.05m width (range depending on surface type and level of competition played), nominally in the centre of the field of play. Greater definitions of pitch types and dimensions is provided in Guidance Note 02 – Pitches and Playing Fields.
SQUARE	The square is a specially prepared area of the field of play within which the match pitch is situated.
UNIFORMITY	Uniformity is expressed as a ratio. U1 is the minimum illuminance divided by average illuminance taken across the calculation / measurement area. U2 is the minimum illuminance divided by maximum illuminance taken across the calculation / measurement area.
UNIFORMITY GRADIENT	The rate of change of illuminance over a defined area. Determined, usually from calculated illuminance figures, as a portion relating the illuminance at a nominated grid point and the illuminance at the eight immediately adjacent surrounding grid points (eg. 20% for 5m signifies a change of 20% using a 5m grid). (Note: The convention of specifying U1 and U2 this way in Australia is opposite to that commonly found in overseas publications).

QUALIFICATIONS AND FURTHER REFERENCES

Target Audience – Community facilities only

This Guidance Note is directed at community level cricket facilities and not elite levels of play. They do not cover television broadcast requirements for cricket. Note that in the event a venue requires design to cater for elite levels of play and/or colour television coverage, specialist advice is recommended at an early stage. References may also include *IESANZ Lighting Guide for Outdoor Cricket LG - 4.01* for outdoor cricket venues and relevant publications of 'Free TV Australia'.

Further project specifications are needed

This Guidance Note is not intended to substitute the project specifications that will be necessary to take account of the unique set of circumstances pertaining to each individual project. Be aware that some aspects will likely arise that are not considered in this Guidance Note as a consequence.

Other regulations need consideration

Consider the further requirements of local authorities and changes in regulations and standards that will occur from time to time. This Guidance Note is intended to co-exist with the regulatory framework in which each facility will be developed.

Subject to change

As an area not specifically standardised in Australia, upgrade and amendment to the Floodlighting Guidance Note may occur from time to time without notice to reflect experience and practices considered worth inclusion or necessitating amendment to the information in this Guidance Note.

Ancillary lighting considerations

Lighting guidance is focussed on competitive play and training for Cricket. This Guidance Note does not seek to address lighting needs for other sports codes, public lighting, safety lighting, emergency lighting or interior lighting requirements for building services compliance including spectator areas.

Risk assessment and insurer requirements

The intended lighting of a community cricket facility, and the selection of a particular lighting for standard, or Class, needs to be discussed and agreed on an individual venue basis at the outset by the body responsible for its development. This should be in consultation with the relevant Cricket Association, competition administrator and the venue's insurers to ensure lighting provided is to a satisfactory standard for the level of risk assessed as associated with the levels of play it is intended will occur under floodlighting.

Conditions of use

Every care has been taken but this Guidance Note is not intended as a substitute for professional oversight and consideration of the lighting particulars of a specific project and Cricket Australia accepts no liability for harm or damage which may be incurred by club or person as a result of implementing these guidelines.

Sample designs, case studies and costing examples

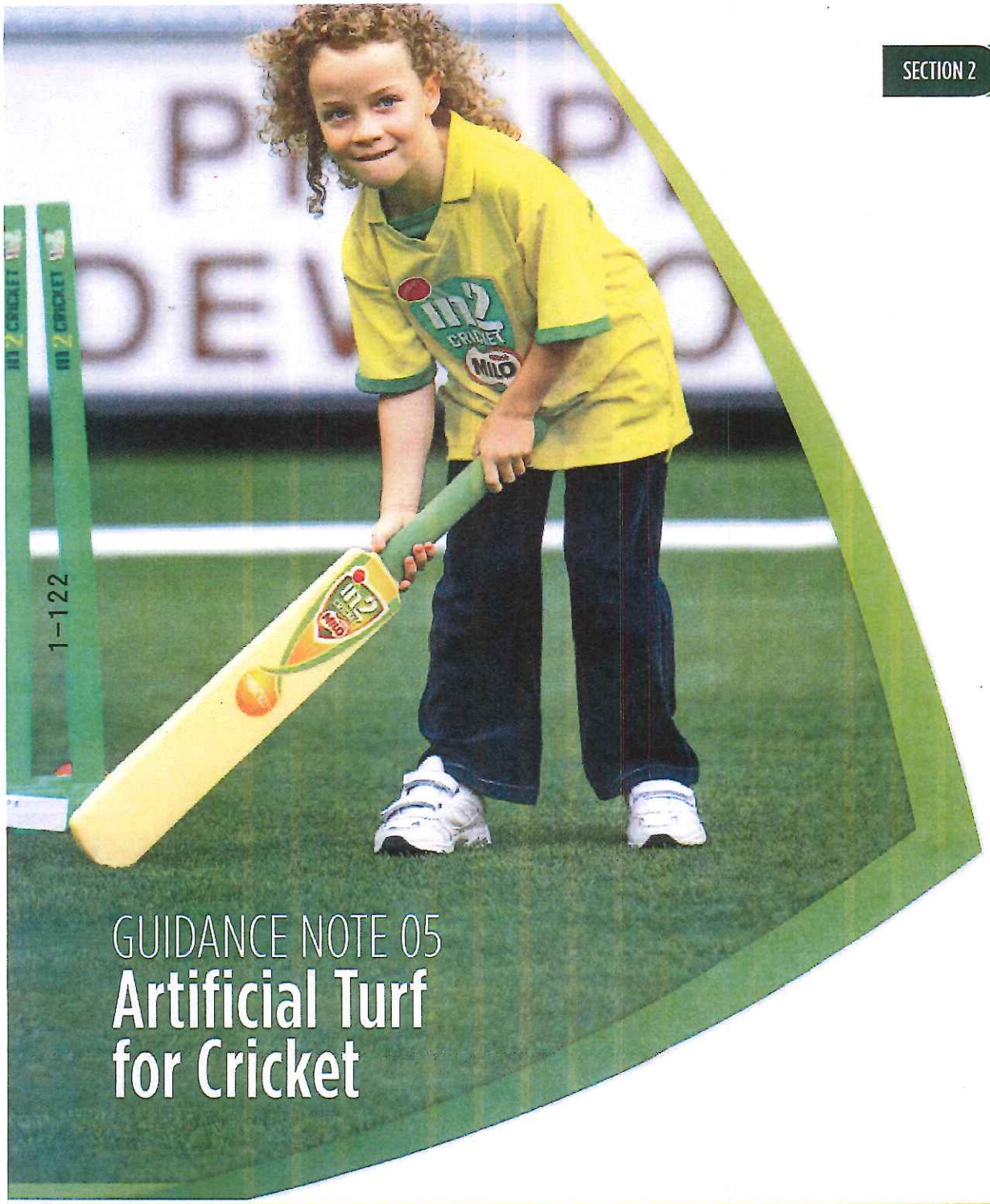
This Guidance Note does not include sample designs or specific lighting case studies at this time. Some sample outdoor Cricket designs may be found in the *Cricket Oval and Practice Wickets Floodlighting - Queensland Cricket Technical Guidelines.*

With the development of night cricket venues, consideration will be given at a future time to production of Cricket Floodlighting Case Studies, sample designs and budgetary costings as a means of providing further implementation guidance.

Reference documents

Guidance has been drawn from the following publications.

1. IESANZ Lighting Guideline Series LG-4.01 Sports Lighting Cricket
2. Cricket Oval and Practice Wickets Floodlighting - Queensland Cricket Technical Guidelines; - Queensland Cricket & DMA Professional Engineers
3. CIE-112 – 1994 Glare Evaluation System for use with Outdoor Sports and Area Lighting
4. Australian Standard AS 2560.1 – 2002, Sports Lighting – General Principals
5. Australian Standard AS 2560.2.2 – 1986, Sports Lighting – Lighting of multipurpose indoor sports centres
6. Australian Standard AS 2560.2.3 – 2007 Sports Lighting for football (all codes)
7. Australian Standard AS 2560.2.6 – 1994 Sports Lighting – Baseball & Softball
8. Australian Standard AS 2560.2.7 – 1994 Sports Lighting – Outdoor Hockey
9. Guide to the Artificial Lighting of Hockey Pitches – International Hockey Federation (FIH) – 6th Edition
10. Australian Standard AS 4282 – Control of the Obtrusive Effects of Outdoor Lighting
11. Australian Standard AS 1680 Series – Interior & Workplace Lighting
12. European Standard EN 12193 :2007 Light and Lighting – Sports Lighting
13. Civil Aviation Authority MOS139 – Manual of Operating Standards Part 139 – Aerodromes
14. Department of Sport & Recreation Western Australia, Sports Dimensions Guide
15. ECB Facilities Briefs and Guidance Notes for Indoor Sports Halls with Cricket provision – TS3
16. ECB Indoor Cricket Facilities – Design Guidelines – TS7 (2011)



GUIDANCE NOTE 05
Artificial Turf for Cricket

INTRODUCTION

Synthetic turf technology has evolved significantly over the past 10 years and is now commonly used by many major sports throughout the world.

Long pile synthetic turf with performance infill allows synthetic turf to mimic the properties of natural turf, both in terms of player comfort and playability. As a result of these developments the AFL and Cricket Australia have joined together to develop a synthetic turf program to enable the playing of community level Football and Cricket on an approved synthetic product.

In 2007 the AFL, Cricket Australia, Sport & Recreation Victoria and JLT Trustees (the insurer to both the AFL and Cricket Australia), commissioned the University of Ballarat to determine whether specific criteria could be developed for the use of synthetic grass for Football and Cricket. Following a number of tests on natural turf football and cricket ovals, the University of Ballarat developed a set of criteria that would enable synthetic turf to mimic the performance characteristics of natural turf. The AFL and Cricket Australia subsequently endorsed the playing of community level Football and Cricket on a synthetic surface meeting those criteria.

Why synthetic turf?

Synthetic turf fields have the ability to address a number of issues that can impact on participation. These include:

Weather variability – Australia has been impacted by both drought and significant rain events in recent years which has meant grounds have been closed for training and play. It is predicted that these events will become more common place and as such the ability for synthetic turf to continue to provide a safe and playable surface no matter what the weather brings is a distinct advantage.

Venue supply and participation increases – participation increases in both sports have placed additional demand on grounds already at capacity. From 2008-2012, Football participation has increased by more than 151,000 and 398 new club teams have been formed. Over the same period, outdoor cricket participation increased by over 98,000 players.

Getting more use out of finite open space resources – accessing additional land for new sporting ovals is increasingly difficult. Synthetic surfaces allow up to three times more use than natural turf ovals and can therefore create better usage outcomes out of the existing space available, particularly to accommodate increased training loads.

Water availability - as an added advantage, synthetic turf ovals consume no potable water and provide the ability to harvest water that can be used to irrigate adjacent natural turf ovals or nearby landscaped areas.

Licensing software and approved products

Since the development of the synthetic turf standards, the AFL and Cricket Australia have established a licensing program that ensures the quality of products being manufactured from a performance and longevity perspective and that the products comply with safety and insurance requirements.

The licensing program includes both laboratory tests and field tests to ensure the products meet the AFL/Cricket Australia criteria after manufacturing and once installed. The licensing process is outlined below:

Step 1 A synthetic Manufacturer enters into a Licence Agreement with the AFL/Cricket Australia

Step 2 A Licenced Manufacturer submits a product sample to an approved laboratory for testing

Step 3 The product sample is subjected to the laboratory tests. Subject to the product passing these laboratory tests an "Approved Synthetic Turf Product" Certificate is issued

Step 4 A surface comprising of the product which has satisfied the laboratory tests is installed

Step 5 The installed surface undergoes field tests

Step 6 Subject to passing the field tests, the oval is certified as meeting the AFL/Cricket Australia standards.

Outcomes

With ongoing participation increases in both sports (male and female), the development of emerging forms of the games (AFL 9s, T20 Cricket) and the extremes of the Australian environment, synthetic turf ovals have an important role to play in enabling the sports to continue to play no matter the circumstances. This will ultimately lead to:

- Less maintenance
- Less ground closures
- More play.

Test procedures

The AFL/Cricket Australia 'Approved Synthetic Turf Product' mark is awarded to those products that have been subject to a series of stringent laboratory tests. These tests include those for durability, joint strength, resistance to weathering, ball roll and bounce, hardness, critical fall height, traction and abrasion.

Every oval installed must meet a second stage of testing that occurs on site once the oval has been laid and filled to produce the playing surface and has been allowed to settle and be played on for a period of one month or 160 hours of play. This allows consolidation before testing. Testing is undertaken at a variety of points on the field to ensure compliance across the field. Once an oval has met all the requirements of the field testing it will be issued with official certification that the oval complies with AFL/Cricket Australia Standards. Retesting is required every two years to ensure ongoing accreditation.

The benefits of the testing and certification process are as follows:

- Ensuring surfaces have the same playing characteristics as natural turf
- Ensuring quality and durability of the product
- Maximising playing comfort and safety.

AFL CRICKET AUSTRALIA
Approved Synthetic Turf Product

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A number of Synthetic Turf Manufacturers have been Licenced by the AFL/Cricket Australia to manufacture and install approved AFL/Cricket Australia products. For a list of current Licenced Manufacturers and more information on synthetic turf standards please visit clubassist.cricket.com.au

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GUIDANCE NOTE 06
Support Infrastructure

INTRODUCTION

Outside of the main playing, training and clubroom facilities there are several key support infrastructure items that should be considered and planned for when developing a new or upgrading an existing community cricket venue.

This Guidance Note explores several areas of supporting infrastructure that contribute to both on and off field use of a cricket venue by players, spectators, family members and the wider community and should be read in conjunction with other Guidance Notes.

Ground fencing

Cricket recognise the importance of developing multi-use sporting facilities and the potential limitations perimeter fencing can have on the overall flexibility and use of open space. With this in mind, and where fencing does not impede on a site's overall usage, community access, flexibility and capacity to expand, it is cricket's preference that a cyclone mesh wire fence be installed to prevent balls leaving the ground onto adjacent spectator areas or pathways.

The traditional 'white picket' fence is an aesthetically appealing sports ground fencing option that is more appropriate for a Premier/ Regional level venue. Before opting for this style of fencing, consider other users of the sports field and potential safety and injury hazards. The traditional picket fence is now manufactured in a range of materials, including metal and durable plastics to prolong lifespan and reduce cost. For a Club (home) or Club (satellite) cricket ground a cyclone mesh wire fence at either 900mm, 1050mm or 1200mm around the playing field is desirable.

It is important that perimeter fencing allows for emergency vehicle entry/egress and enables curator machinery unimpeded access to the playing field. This access should be in close proximity to the curator's equipment and machinery storage facility.

Safety fencing

Fencing that protects spectators and pedestrians or limits damage to neighboring properties, infrastructure and vehicles is highly recommended, particularly in 'hot spot' areas prone to cricket balls being hit during play. If installation of safety fencing is not feasible, it is recommended from a risk management and liability perspective that warning signage be placed around the ground advising the public of the sporting activity taking place and to be aware when walking past or parking their vehicle.

Australian Standard AS 1725.5-2010 Chain link fabric fencing - Sports ground fencing - General requirements provides detailed information on the provision of cyclone mesh fencing for sports grounds.

White picket fencing is an aesthetically appealing and traditional cricket ground fencing design

900mm, 1050mm or 1200mm cyclone mesh fencing is recommended for Premier/Regional, Club (home) and Club (satellite) cricket grounds.

Shade provision

The provision of sheltered spectator viewing areas at community cricket grounds is a key design feature that is often overlooked when planning a new cricket facility.

Whether it be permanent shelters with seating, extending a pavilion roofline, shade sails, tree plantings (natural shade is preferred) or a designated area for the erection of a temporary shade structure, sheltered spectator areas provide a refuge from the sun during the hot summer months. With a cricket match or a day's play taking anywhere up to eight hours to complete, shelter from the sun or wind will increase the likelihood of spectators staying to watch the match. This not only builds the atmosphere of the match but provides a meeting place for family and friends and local residents, promoting social cohesion, community health and wellbeing and a strong sporting club culture.

When considering the placement of shade and shelters, try to minimise spectators having to look into the sun, ensure the shade provision is not placed in a location that will disrupt the match (eg. spectators sitting or moving behind the bowler's arm) and take measures to ensure the shaded and/or sheltered area is accessible.

Images of example spectator seating and shade structures.
Images courtesy of Cricket Australia.

Maintenance and equipment storage

A well positioned and adequately sized maintenance and equipment storage area for turf pitch curator machinery and equipment **is a key facility requirement for venues with turf pitches.**

When deciding on the best location for a curator storage shed, ensure it is in close proximity to the playing field and that easy access to the playing field is available (eg. double gates that enable vehicle access onto the ground). To minimise building footprints and use of public open space, consider using the shed as a base for a scoreboard (be mindful of impacts of sun glare on scoreboard). External storage facilities can also double up as raised spectator viewing areas if designed accordingly.

A consolidated multiple roller door design with separate storage areas for individual pieces of curator machinery and equipment or club equipment is recommended for grounds servicing turf pitches.

A minimum 60m² space is recommended for a Club (home) turf cricket pitch ground and 80m² for a Premier/Regional level facility. A 30m² curator storage facility is desirable at a Club (satellite) ground, if it's a turf pitch venue.

The types of equipment and materials most commonly used in a turf curator storage shed include:

- Walk behind or ride on roller
- Hand roller
- Cylinder mower
- Height bar
- String line
- Marking frame and paint
- Scraper
- Grass clippings
- Scarifier
- Rotary Mower
- Vacuum
- Tractor mounted broom
- Turf covers
- Turf covers trolley and pegs
- Brooms and rakes.

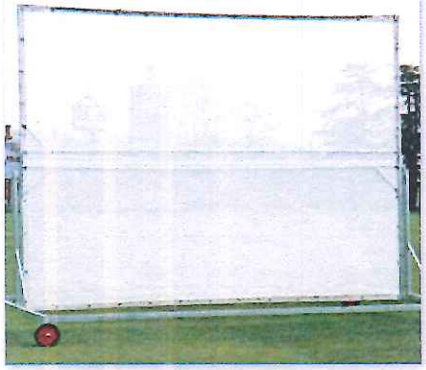
Example of roller door storage with scoreboard mounted to consolidate built infrastructure, Williamstown Cricket Ground (VIC)
Image courtesy of InsideEDGE Sport and Leisure Planning

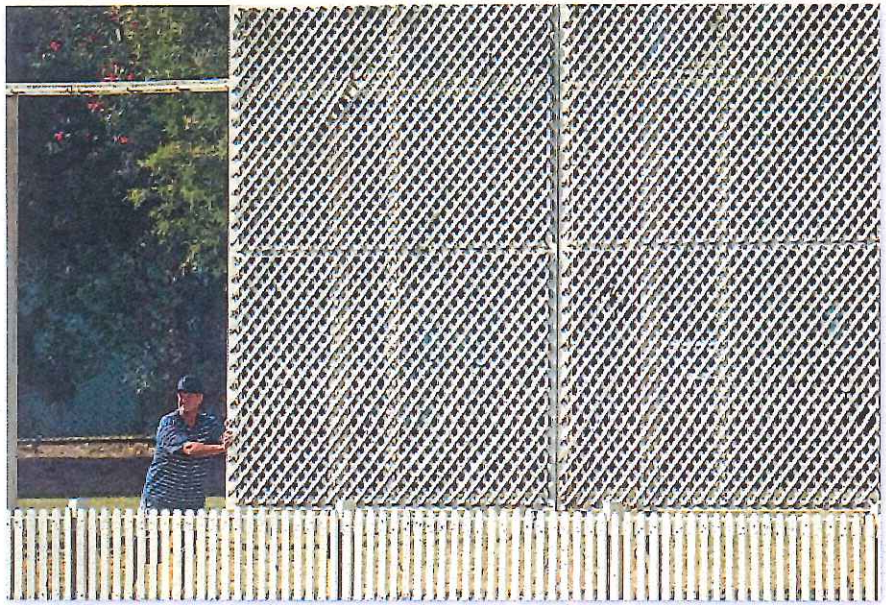
Example of roller door storage with player and spectator viewing above, Drummoyne Oval (NSW)
Image courtesy of InsideEDGE Sport and Leisure Planning

Sight screens

Cricket sight screens are large structures (generally on wheels or permanently fixed to rails) placed outside the boundary line at both ends of a cricket field behind the bowler's arm. Sight screens are used to assist the batsmen's vision of the ball leaving the bowler's hand as they provide a solid contrasting background - white for a red ball and black for a white ball.

Whilst not a requirement at all levels of community cricket, sight screens are recommended for Premier/Regional level cricket venues or grounds that have distracting backdrops (eg. passing traffic) or structures or vegetation that impact on batsmen visibility.





Scoreboards

Electronic or manually managed scoreboards should be provided at all levels of community cricket. The model and detailed design of the scoreboard (electronic or manual, fixed or temporary) will more often than not be dictated by the level of competition being played at the venue. A club's capacity to contribute towards funding the scoreboard and the presence and requirements of winter sporting club tenants (if applicable) should also be considered in determining scoreboard suitability.

Dual purpose electronic scoreboards designed to cater for both winter and summer sports are increasing in popularity. They also provide the ability to promote sponsors via rolling text at the base of the screen, link into social media and can provide score updates from other venues and club matches taking place at the same time.

Ensure the scoreboard is placed in a location that provides optimal visibility for spectators and players and if electronic (LED) consider the impacts of afternoon sun glare on its readability.

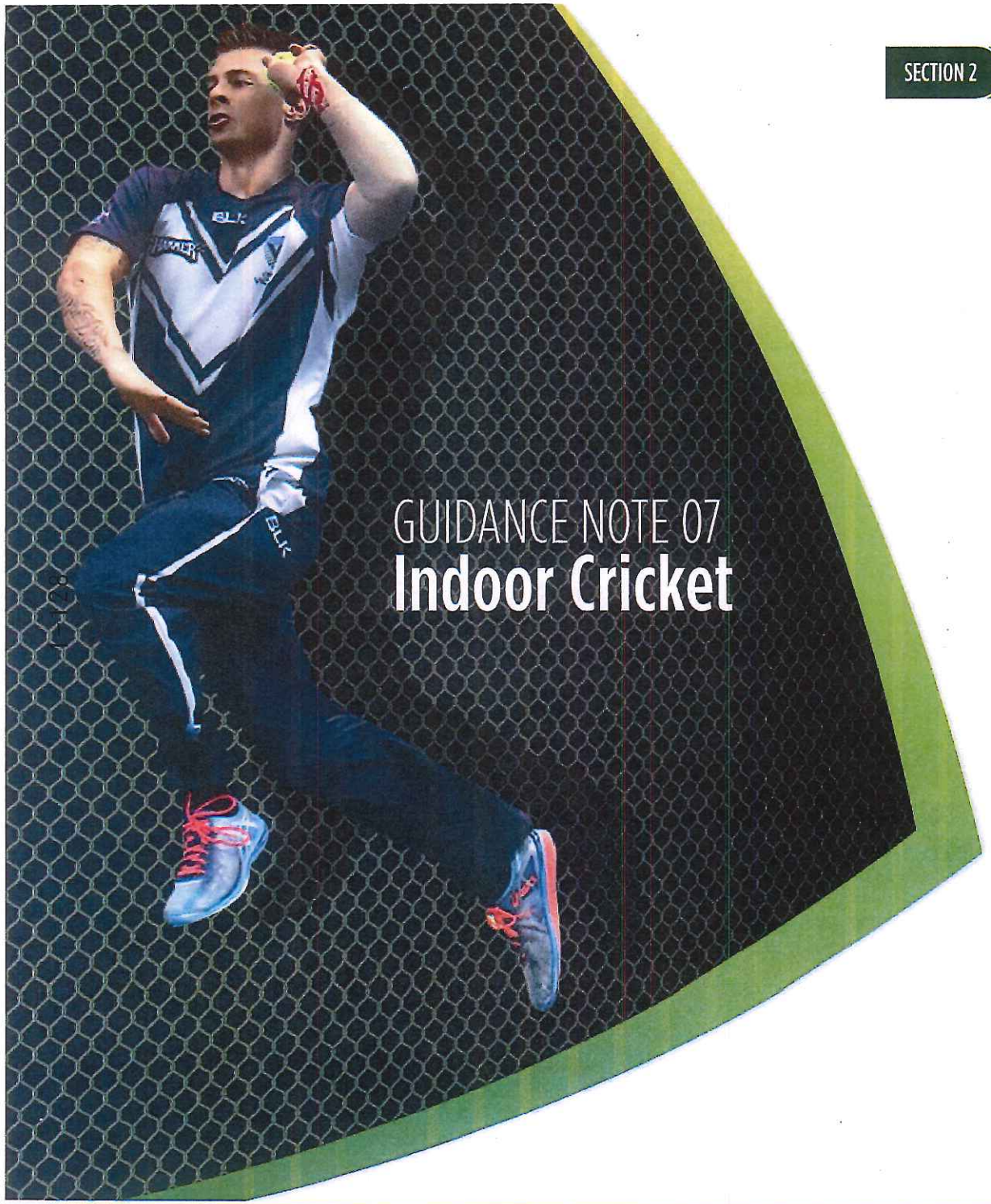
Social amenities and cricket ground surrounds

The power of visual appeal and atmosphere on current and prospective members cannot be underestimated in promoting and creating a welcoming and inclusive community cricket club and facility.

With cricket being a sport played over several hours for juniors and the best part of a day for senior competition, it is important 'family friendly' supporting amenities be incorporated into wider cricket facility precinct design. Supporting facilities, equipment and amenities to be considered when planning a community friendly facility include:

- Shade and shelter
- Spectator seating incorporated into the park environment
- Adequate and accessible car parking
- Play equipment, skate or BMX park
- Bicycle racks
- Shared and connecting pathways or trails
- Public BBQ
- Access to food and beverage
- Public toilet facilities
- Drinking fountains
- Tree plantings, garden beds and vegetated areas
- Landscaped treatments
- Venue and club signage.

It is important to create a strong entry to your cricket facility. For way finding requirements, ensure your venue is clearly and attractively signed and give careful consideration to the site's interface with surrounding properties and roads.



GUIDANCE NOTE 07
Indoor Cricket

INTRODUCTION

Indoor cricket is a variation of standard cricket and was developed in Perth, Western Australia, in the late 1970s. It is suitable for cricketers and novices alike, and played year-round.

Indoor cricket is played on a rectangular, artificial grass-surfaced court. The court is enclosed in tightly tensioned netting, including a 4m high 'ceiling'. Courts are usually constructed in factory units or purpose-built centres.

A game is played with two teams, each with a maximum of eight players or, in some rare cases, six (though six-a-side centres are uncommon, they do exist – usually where the playing area isn't big enough to construct a full-sized court). Indoor cricket uses a softer ball than a regulation cricket ball.[1]

Indoor cricket forms part of a multi-sport experience where players of all abilities can enjoy competitive and social team sport. Indoor matches can be played between mixed genders and players of all ages. Due to the ability to play all year round, indoor facilities provide an ideal off-season training facility, particularly for young player development and social competitions.

Through adopting a multi-purpose design approach, indoor cricket facilities can also provide opportunity for participation in a variety of alternate sporting activities.

[1]WA Sports Dimensions Guide

Indoor cricket and multi-sport court set-up
Images courtesy of Cricket Australia

INDOOR CRICKET LAYOUT AND DIMENSIONS

An indoor cricket 'court' is rectangular, 28m-30m long, 10.5m-12m wide, and roofed by flat netting at 4m to 4.5m high. The walls are also of flexible netting.

The cricket pitch is 20m long and 1.8m wide, covered with artificial turf, with the striker's end close to one end of the court. An additional line is marked across the middle of the pitch, 11m from the striker's popping crease, and forms the non-striker's crease, behind which he is safe from being run out. The batsmen run only 11m to score runs instead of the full length of the pitch.

The wickets are 22.86cm wide, 71.1cm high and consist of three stumps with two bails 11.1cm long on top. The wickets are located at each end of the pitch 20m apart. The stumps are of equal and sufficient size to prevent the ball from passing through. Bails may be wooden or plastic and must be tied to the stumps.[1]

The following detailed indoor cricket dimensions should be considered when designing a new or refurbishing an existing indoor cricket facility. The diagram on the following page provides a visual image of dimensions, layout and requirements for indoor cricket courts.

THE PITCH: The area between both sets of stumps, the bowling return creases and the offside lines and the strikers' end.

THE STUMPS: Should be of equal and sufficient width to prevent the ball from passing through them. The top of the stumps should be 71.1cm above the floor.

THE WICKET LINE: Should be marked in line with the stumps at each end and be 1.83m in width at the batting end and 2.47m at the bowling end. The stumps should be placed in the centre and the middle of the stumps 20m apart.

THE POPPING CREASE: Should be in front of and parallel with the wicket lines at both ends. Its back edge should be 1.22m from the centre of the stumps. At the striker's end the popping crease should extend from one side of the court to the other and is called the batting crease. At the bowler's end the popping crease will be the line extending between the return crease and is called the bowler's crease or the front foot line.

THE RETURN CREASE: At the bowler's end will be the lines at right angles to the bowling crease and the line of the wickets. The return creases will be marked 1.22m from the middle stump on the line of the wicket. The return creases may be considered to extend back from the line of the stumps indefinitely for the purposes of adjudication.

THE RUNNING CREASE: The running crease (or non-striking batter's crease), which is the edge of the crease marking nearest the bowling end, should be parallel to the popping crease and extend from one side of the court to the other. The distance between the running crease and batting crease should be 11m.

THE COURT: Should be no less than 28m and no more than 30m in length and no less than 10.5m and no more than 12m in width. The height should be between 4-4.5m.

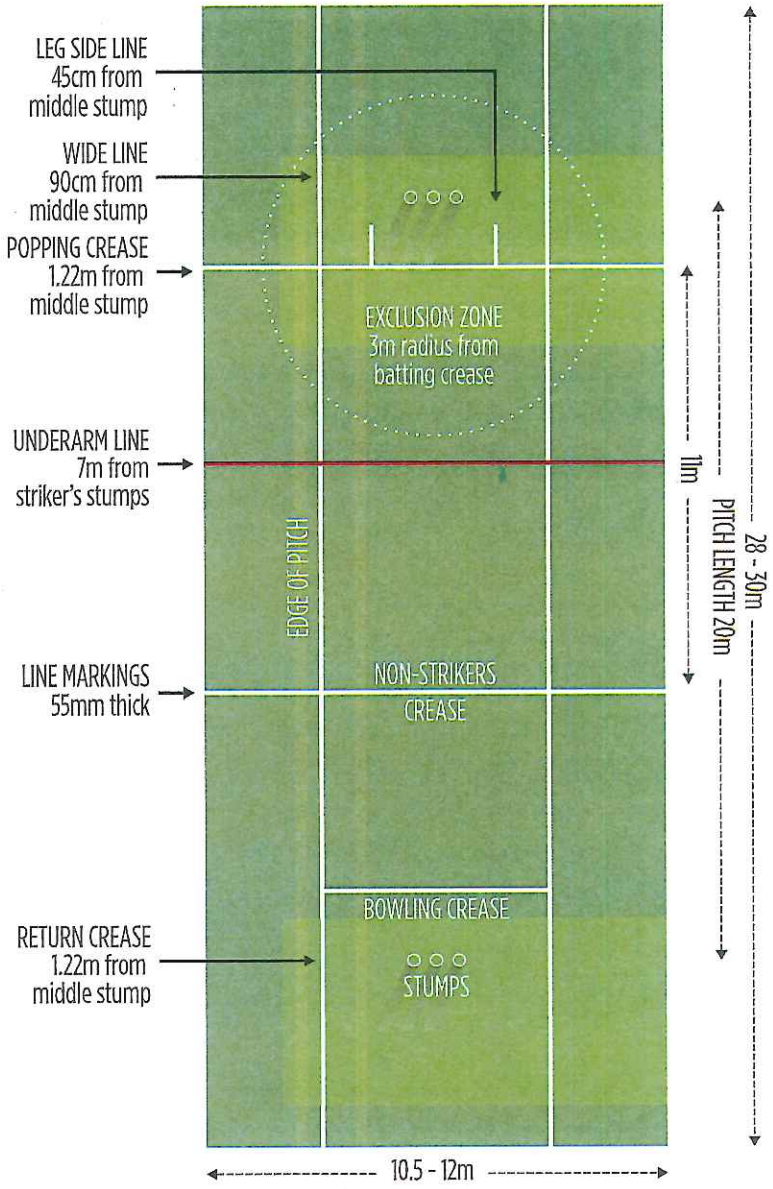
THE LEGSIDE LINES: Should be positioned with the inside edge 45cm from the middle stump. The legside lines should extend a minimum 15cm at right angles to the batting crease. The offside or wide lines are to be positioned with the inside edge 90cms from the centre stump.

THE FIELDING EXCLUSION ZONE: Should be marked in an arc extending from the centre of the batting crease at a radius of 3m.

THE UNDERARM LINE: Should be marked across the pitch 7m from the striker's stumps.

LINE MARKING: Should be marked at a thickness of 55mm.

[1]*WA Sports Dimensions Guide for Playing Areas.*



NETTING

The net enclosing an indoor cricket court is very tightly tensioned. This allows consistency in the ball's bounce off the net. It is also a safety feature — players are protected from hitting any walls or columns that may be close to the court and there is less chance of getting fingers caught in tight nets. It also allows spectators to be closer to the game, as players hitting the net will not stretch it far.

The court is defined by a cubic frame of high-strength steel cable, to which the netting is securely attached. Tensioning of the net is achieved by tensioning of this 'cube'. The lower four cables of the cube are secured directly into a concrete floor. The four lower corners are tensioned to anchor points set into the concrete.

The top four cables are all fastened at the corners to anchor points, located on the ceiling/inner-roof. These take the main tension and help form the 'box' structure of the cables. These top cables are then further fastened to the ceiling for additional support. The shape of the box thus formed is achieved by adjusting the tension mainly in the eight corners, with finer tuning possible by individually adjusting the extra attachments along the top edges.[1]

[1]*WA Sports Dimensions Guide for Playing Areas.*

Indoor cricket tensioned netting
Images courtesy of Cricket Australia

Indoor cricket lighting system example
Images courtesy of Cricket Australia

LIGHTING

It is essential to have good quality lighting so that the players can follow the movement of the ball travelling at high speeds, either struck by the batsman or bowled by the bowler.

The illuminance must be uniform throughout the playing area, with the background walls behind both batsman and bowler providing a good viewing contrast. Safety is paramount and the lighting system must take into account the propulsion of balls at speed.

The recommended minimum lighting level for an indoor cricket sports centre is between 1000 and 1500 lux for non-televised use.[1]

[1]*WA Sports Dimensions Guide for Playing Areas.*

Example of player and spectator support amenities that complement and support social usage.
Images courtesy of Cricket Australia

VENUE AMENITIES

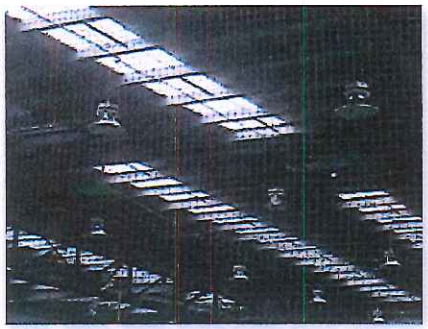
Creating a welcoming environment to any community facility starts with providing a positive first impression to patrons on entry.

This includes reception areas that are open and configured to managed flow into the building, as well as welcoming social and spectating areas that provide visibility into the centre and across playing areas.

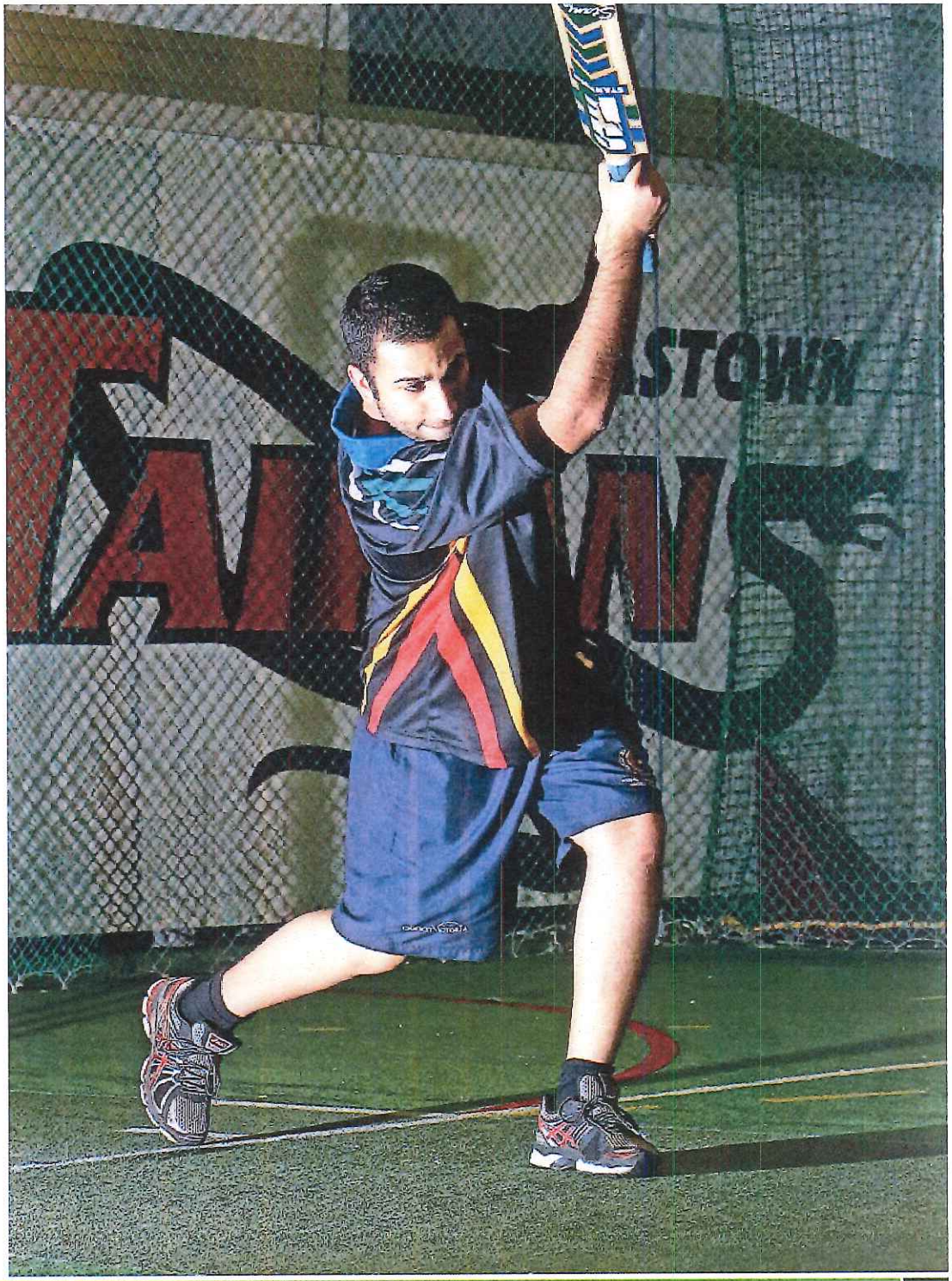
Ensuring that adequate spectator areas are provided throughout the venue and within any social, bar or café area will add to the overall spectator experience. The provision of heating, cooling, natural light and ample circulation space will also assist in improving player and spectator comfort.

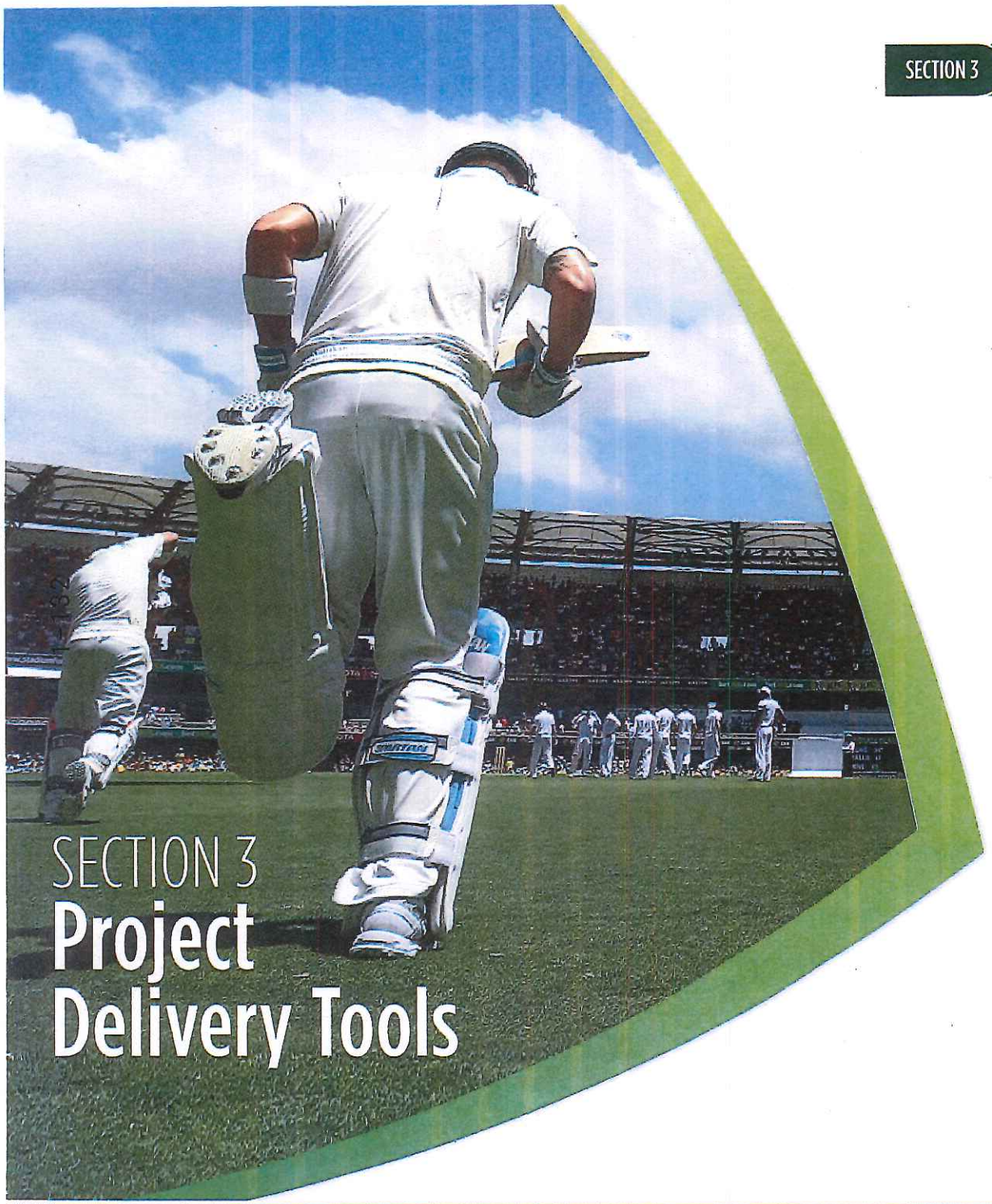
The design of any building for indoor cricket must be carefully considered in order to create both strong playing and venue amenity areas. Designing areas that minimise staffing requirements and co-locate reception, food, beverage and merchandise sales areas will assist to create management and financial efficiencies.

Kaleen Indoor Sports (ACT) – Example of spectator seating
Images courtesy of Cricket Australia



Example of natural light
Images courtesy of Cricket Australia





SECTION 3 Project Delivery Tools

FACILITY COST GUIDE

Facility related costs within this section are provided as a guide to help stakeholders identify the range of costs associated with cricket infrastructure provision and maintenance and to assist with project planning and budget development.

Costs provided are estimated calculations based on current market trends (as at June 2015), similar project costings and consultation with a range of industry suppliers. It should be noted that cost estimates exclude preliminaries, site establishment, state influences, builder's margin and services provision costs and relate to 'above the ground' costs only. They are also exclusive of site investigation and planning costs and related fees.

Costs listed are indicative only and exclude GST. Detailed project specific costs should be developed during the detailed design phases of individual projects.

CAPITAL COST PROVISIONS

The following table is provided as an initial guide to help stakeholders identify the capital cost provisions of new cricket infrastructure. Cricket Australia commits to updating these capital costs between July and September annually.

FACILITY ELEMENT	ESTIMATED REQUIREMENTS	LOWER COST RANGE	UPPER COST RANGE	ESTIMATED COST RANGE
CONCRETE PROVISION FOR CENTRE SYNTHETIC PITCH - 2.4M X 25M	60m²	$60 per m²	$70 per m²	$3,600 - $4,200
CONCRETE PROVISION FOR CENTRE SYNTHETIC PITCH - 2.8M X 28M	78.4m²	$60 per m²	$70 per m²	$4,700 - $5,500
SYNTHETIC CRICKET PITCH – 2.4M X 25M (9MM PILE)	60m²	$45 per m²	$55 per m²	$2,700 - $3,300
SYNTHETIC CRICKET PITCH – 2.8M X 28M (9MM PILE)	78.4m²	$45 per m²	$55 per m²	$3,500 - $4,500
SYNTHETIC CRICKET PITCH COVERS – INCLUDING COVER AND SPINDLE / INTERNAL ROLLER	Dependent on pitch dimensions and shape	-	-	$3,950 - $5,000
TURF PITCH SQUARE DEVELOPMENT – PREMIER / REGIONAL LEVEL (10 PITCHES X 25M LONG)	762.5m²	$250m²	$350m²	$190,625 - $266,875
TURF PITCH SQUARE DEVELOPMENT – CLUB HOME OR SATELLITE (5 PITCHES X 24M LONG)	366m²	$200m²	$300m²	$73,200 - $109,800
PLAYING FIELD FENCING FOR 50M GROUND – CHAIN MESH (1050MM) TOP AND BOTTOM RAIL	314m²	$60 per m²	$77 per m²	$18,800 - $24,500
PLAYING FIELD FENCING FOR 75M GROUND – CHAIN MESH (1050MM) TOP AND BOTTOM RIAL	471m²	$60 per m²	$77 per m²	$28,000 - $36,500w

LIFECYCLE PROVISIONS

The following table is provided as an initial guide to help stakeholders identify the important characteristics of life-cycle cost provisions. Cricket Australia commits to updating these life-cycle cost guides between July and September annually.

FACILITY ELEMENT	LIFE EXPECTANCY RANGE (YEARS)	PLANNED LIFE (YEARS)	TYPICAL REPLACEMENT COST	ANNUAL MAINTENANCE COST	ANNUAL REPLACEMENT COST	ESTIMATED ANNUAL RENEWAL COST
SYNTHETIC PITCH SURFACE – 2.4M X 25M (9MM PILE)	6-8 years	8 years	$6,000	$1,200	$750	$1,950
SYNTHETIC PITCH SURFACE – 2.8M X 28M (9MM PILE)	6-8 years	8 years	$7,800	$1,500	$975	$2,475
SYNTHETIC PITCH COVER – PRODUCT AND LABOUR (COSTS WILL VARY BASED ON PITCH DIMENSIONS)	4-5 years	5 years	$5,500	$1,200 (installation, removal & repairs)	$1,100	$2,300
SOIL PITCH COVERING AND UNCOVERING – INCLUDES COST OF MATERIALS, CONTRACTOR LABOUR AND REMOVAL OF SOIL FROM SITE)	1 year	1 year	n/a	$4,000	n/a	$4,000
TURF PITCH SQUARE MAINTENANCE (INCLUDING MATERIALS, WATER EQUIPMENT OPERATION, CURATOR COSTS) – PREMIER / REGIONAL (10 PITCHES)	12-15 years	15 years	$225,000	$80,000 (based on 6-7 months maintenance)	$15,000	$95,000
TURF PITCH SQUARE MAINTENANCE (INCLUDING MATERIALS, WATER EQUIPMENT OPERATION, CURATOR COSTS) – CLUB HOME OR SATELLITE (5 PITCHES)	12-15 years	15 years	$91,500	$50,000 (based on 6-7 months maintenance)	$6,100	$56,100
PLAYING FIELD FENCING FOR 50M GROUND – CHAIN MESH (1050MM) TOP AND BOTTOM RAIL	25-35 years	30 years	$25,500	$500	$850	$1,350
PLAYING FIELD FENCING FOR 75M GROUND – CHAIN MESH (900MM)	25-35 years	30 years	$37,500	$500	$1,250	$1,750

VENUE PROVISION SUMMARY BY HIERARCHY

Information presented within this section provides the preferred levels of facility and amenity provision for community level cricket.

It sets aspirational targets for all existing venues to reach, as well as providing information from which to plan new or redevelop existing venues.

The Cricket Facility Hierarchy outlined in Section 1 of the Guidelines and summarised below defines cricket facilities, their purpose and core cricket uses for Premier/Regional and Club level cricket facilities.

HIERARCHY LEVEL	FACILITY PURPOSE
PREMIER/REGIONAL	Integrates the community cricket pathway and provides connection between club cricket and high performance pathways. Facilities service home clubs, as well as providing for the broader cricket catchment.
CLUB (HOME)	Provide a mix of recreational and competitive cricket opportunities within a community club environment for local communities – clubs and venues connect with their associated turf or synthetic competition and pathway structure (for all age groups).
CLUB (SATELLITE)	Provides opportunities for club and school competition and social/recreational cricket. Venues often used as secondary grounds for junior and lower senior grades.

The **venue infrastructure amenities** identified in the following tables represent 'cricket's preferred levels of provision' in order to facilitate cricket training and matches at each hierarchy level.

Consideration of compatible sports and alternative codes has been taken into account in developing theses guidelines, but they are not expressly represented in the following tables. Through all stages of site and venue planning, consultation with other users, sporting codes and Local Councils should be undertaken in order to align user objectives and requirements.

These tables are best utilised in the preliminary scoping, feasibility and design stages of new venues and projects, but also be used to inform facility or site redevelopment projects.

The definitions below have been used within the following tables and should be referenced to help explain cricket's preferences.

REQUIRED	Facility element required to ensure play can occur at relevant hierarchy level
DESIRABLE	Play can occur, but may be compromised or user experience lessened without it
OPTIONAL	Play can occur with little to no impact, on user experience

Where items have been referenced with an (*), this refers to specific elements of Premier/Regional level facilities that **must be provided or are required** in order to support the use of those venues for First Class or Domestic level cricket.

PITCHES AND TRAINING AMENITIES

COMPONENT/CAPABILITY	PREMIER/REGIONAL	CLUB (HOME)	CLUB (SATELLITE) WITH CLUBROOM BUILDING	CLUB (SATELLITE) NO CLUBROOM BUILDING
PLAYING FIELDS PER SITE (MINIMUM)	1	1	1	1
PLAYING FIELDS (DESIRABLE)	3	2	1	1
TURF PITCHES PER PLAYING FIELD (MINIMUM/PREFERRED)	8/10	5/6	5/6	5/6
SYNTHETIC PITCHES PER PLAYING FIELD (SYNTHETIC PITCHES ONLY)	N/A	1	1	1
WARM SEASON GRASS SPECIES	Desirable*	Desirable	Desirable	Desirable
IRRIGATION/ACCESS TO WATER	Required	Required	Desirable	Desirable
FLOODLIT PLAYING FIELDS (1 PER SITE ONLY)	Desirable	Optional	N/A	N/A
PLAYING FIELD FENCING (900MM OR 1050MM)	Desirable*	Optional	Optional	Optional
PITCH COVERS FOR TURF PITCHES	Required	Required	Required	Required
SIGHT SCREENS (PAIR)	Required	Optional	N/A	N/A
SCOREBOARD	Permanent Electronic (Desirable*)	Temporary or Permanent (Required)	Temporary (Required)	Temporary (Required)
OUTDOOR TURF TRAINING PITCHES	8 – 12	4 - 6 Optional	N/A	N/A
OUTDOOR SYNTHETIC TRAINING PITCHES	2 – 4	3 – 6	2	2
TRAINING FACILITY MULTI-PURPOSE	OPTIONAL	OPTIONAL	N/A	N/A
POWER TO OUTDOOR TRAINING PITCHES	Required	Desirable	N/A	N/A
INDOOR TRAINING PITCHES	4 Pitches Desirable	N/A	N/A	N/A

SITE FACILITIES AND AMENITIES

COMPONENT/CAPABILITY	PREMIER/REGIONAL	CLUB (HOME)	CLUB (SATELLITE) WITH CLUBROOM BUILDING	CLUB (SATELLITE) NO CLUBROOM BUILDING
SPECTATOR SEATING (STRUCTURE)	100 Seats* Desirable	30 Seats Desirable	Park Benches	Optional
SPECTATOR VIEWING (COVERED)	Desirable*	Desirable	Desirable	N/A
SPECTATOR VIEWING (NATURAL SHADE)	Required	Required	Required	Required
SITE/PERIMETER FENCING	Optional*	Optional	N/A	N/A
PLAYGROUND/SPACE OR YOUTH SPACE	Desirable	Desirable	Desirable	Desirable
WALKING PATH/TRAIL	Desirable	Desirable	Desirable	Desirable
CAR PARKING PER PLAYING FIELD (MIN SPACES)	50 Spaces*	40 Spaces	30 Spaces	30 Spaces
SITE/VENUE SIGNAGE	Required	Required	Required	Required

* Denotes a required element to host domestic of higher levels of cricket

CLUB FACILITIES AND AMENITIES

COMPONENT/CAPABILITY	PREMIER/REGIONAL	CLUB (HOME)	CLUB (SATELLITE) WITH CLUBROOM BUILDING	CLUB (SATELLITE) NO CLUBROOM BUILDING
PAVILION/CLUBROOMS (ESTIMATED MINIMUM SIZE OF INTERNAL BUILDING FOOTPRINT)	600-700m²	400-500m²	300-350m²	Assumes no building provided
PLAYER CHANGE ROOMS (PER PLAYING FIELD)	2 X Unisex*	2 X Unisex	2 X Unisex	
UMPIRE CHANGE ROOMS (PER PLAYING FIELD)	1 X Unisex* (With minimum of 2 lockable cubicles)	1 X Unisex (With minimum of 2 lockable cubicles)	N/A	
KITCHEN/CANTEEN/ KIOSK	Kitchen* + Kiosk*	Kitchen or Kiosk	Kiosk	
DRY GOODS STORAGE/COOL ROOM	As needs basis	As needs basis	N/A	
SOCIAL/COMMUNITY ROOM (INDOORS)	Required	Required	Required	
SOCIAL/BBQ AREA (OUTDOORS)	Desirable	Desirable	Desirable	Desirable
TOILETS (M/F OR UNISEX & ACCESSIBLE)	Required	Required	Required	Access to Public Toilets required
FIRST AID/MEDICAL ROOM	Desirable*	Optional	OPTIONAL	N/A
GYM/FITNESS ROOM	Desirable*	N/A	N/A	N/A
OFFICE/ADMINISTRATION/MEETING	Required	Optional	N/A	N/A
SCORERS' BOX/VIEWING AREA	Desirable*	Table & Chairs (shade & weather protected)	Table & Chairs (shade & weather protected)	Table & Chairs (shade & weather protected)
GROUND MAINTENANCE STORAGE	Required	Required for Turf Pitch Venues	Required for Turf Pitch Venues	Required for Turf Pitch Venues
EQUIPMENT STORAGE	Required	Required	Required	N/A
MEMORABILIA/HONOUR BOARD DISPLAY	Desirable	Desirable	Desirable	N/A

*Denotes a required element to host domestic of higher levels of cricket

ESTIMATED MINIMUM LAND AREA REQUIREMENTS FOR NEW VENUE DEVELOPMENT

VENUE TYPE AND PROVISION	PREMIER/REGIONAL	CLUB (HOME)	CLUB (SATELLITE) WITH CLUBROOM BUILDING	CLUB (SATELLITE) NO CLUBROOM BUILDING*
SINGLE OVAL WITH CLUBROOMS, TRAINING FACILITIES, SITE & SUPPORT AMENITIES	4.5 Ha	3 – 4 Ha	2 Ha	1.5 Ha
DUAL OVAL WITH CLUBROOMS, TRAINING FACILITIES, SITE & SUPPORT AMENITIES	10 Ha	8 – 10 Ha	6 – 8 Ha	5 – 6 Ha
THREE OVAL WITH CLUBROOMS, TRAINING FACILITIES, SITE & SUPPORT AMENITIES	12.5 Ha	10 – 12 Ha	8 – 10 Ha	8 Ha

Case Study Indoor Cricket Training Facility Lighting

COMPONENT	PROJECT DETAILS
LOCATION	Blacktown International Sports Park (BISP), Eastern Road, Rooty Hill, NSW 2767
LAND OWNER	Blacktown City Council - (02) 9839 6591
COMPONENTS	Indoor Practice Centre - 1050 lux ENSA 200W LED high bay lights
KEY USES/USERS	All levels of cricket including domestic squads, premier cricket and community clubs
COST	Lighting cost only - $40,000 (excluding GST and power supply costs)
COMPLETED	June 2015
FUNDING PARTNERS	Cricket NSW

PROJECT DESCRIPTION

Cricket NSW engaged Trackie Industries to install a 1000 lux system to increase the visibility, flexibility and functionality of the Indoor Practice Centre (IPC) at the Blacktown International Sports Park precinct.

The IPC is used year-round and was developed as part of the newest sporting centre at BISP in 2009. The combined indoor and outdoor facilities are amongst the best training facilities for cricket in Western Sydney.

It provides five full length indoor synthetic pitches with 15m run-ups.

The netting configuration allows the nets to be drawn to one end of the centre, thus transforming the facility into a sheltered warm-up and fitness area.

The core users of the Indoor Practice Centre include Cricket NSW Blues, Breakers and under age academy squads, local Blacktown community groups and various other external hirers.

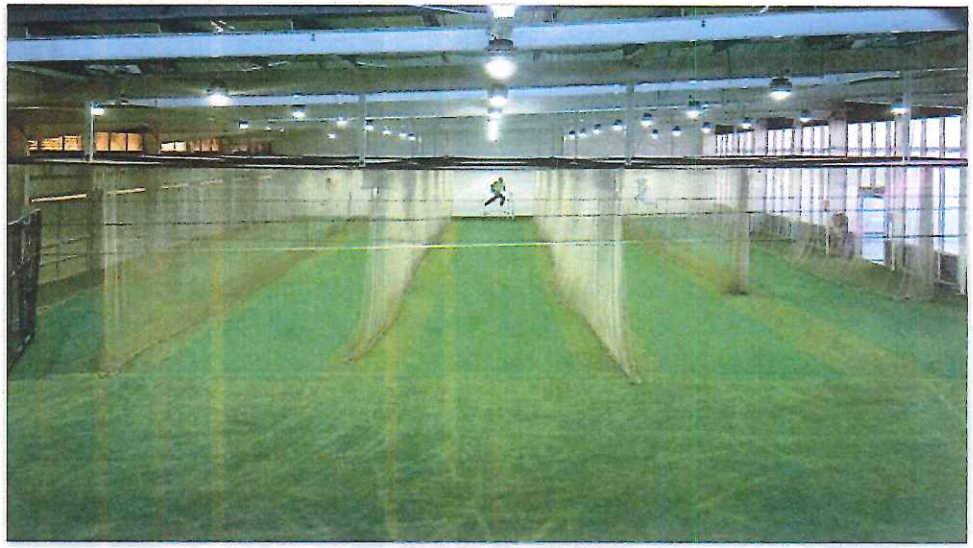
The lighting has an in-house C-Bus enabled control system that allows users to power on only the required areas, thereby enabling sufficient rotation of lights as well as limiting wastage.

Key Project Outcomes

- Upgraded lighting system capable of hosting elite and international squads.
- Demonstrated the ongoing partnership between BISP management and Cricket NSW, and both parties commitment to invest and provide great cricket training facilities.
- Isolated lighting control per pitch thereby reducing power consumption and sustainability of the system.
- Provides an opportunity to capture high speed camera footage and meets heightened player safety requirements.

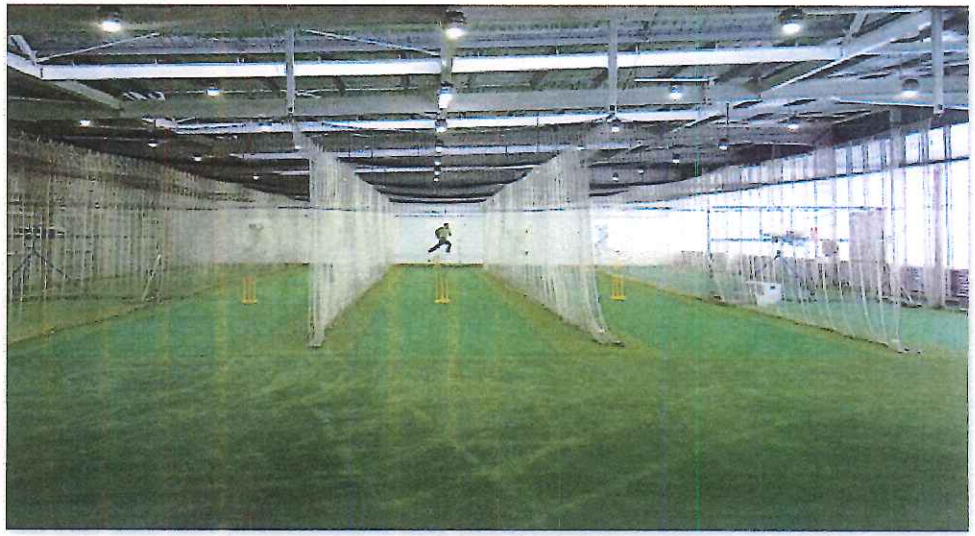
Key Learnings

- Ensure power supply and cabling on site will be sufficient to operate 1000 lux system – this can be a significant additional cost if not planned adequately.
- Forming relationships with preferred suppliers to understand and install best practice technology.
- The importance of working closely with architects, lighting engineers and users to ensure a flexible and financially sustainable system.



Lighting fixtures

41 ENSA LED high bay lights enable high performance sport for elite athletes as well as reduced power consumption.



Floodlights in operation

Each net has a dedicated lane of lights for enhanced illumination and capacity to switch on and off as required.

Case Study Outdoor Cricket Practice Wicket Lighting

COMPONENT	PROJECT DETAILS
LOCATION	Blacktown International Sports Park (BISP), Eastern Road, Rooty Hill, NSW 2767
LAND OWNER	Blacktown City Council - (02) 9839 6591
COMPONENTS	Outdoor synthetic and turf training nets - 500 lux – 4 mast installation (metal halide)
KEY USES/USERS	All levels of cricket including domestic squads, premier cricket and community clubs
COST	Lighting cost only - $98,000 (excluding GST and power supply costs)
COMPLETED	October 2014
FUNDING PARTNERS	Cricket NSW (CNSW) and BISP Venue Management

PROJECT DESCRIPTION

Cricket NSW and Blacktown, Internationals Sports Park Management engaged Musco Listing to install a 500 lux metal halide lighting system to increase the visibility, flexibility and functionality of the outdoor turf and synthetic training pitches.

The outdoor training area is used year-round and developed as part of the 2009 upgrade at BISP. The combined indoor and outdoor facilities are amongst the best cricket facilities in Western Sydney, and include the following:

- 5 indoor synthetic practice pitches;
- 18 outdoor turf pitches; and
- 5 outdoor synthetic pitches with full length run-ups.

Floodlighting was installed to the outdoor practice pitches in 2014 and allows training to extend well into the night, it is used for an estimated 30 hours per week during the cricket season.

The core users of both the indoor and outdoor training areas are Cricket NSW Blues, Breakers, Sydney Thunder and under age academy squads, local Blacktown and surrounding community cricket clubs.

Lighting has an in-house control system controlled by BISP site management and has a monitoring system to measure usage and associated costs.

Key Project Outcomes

- Lighting of an outdoor training area that was not previously lit, thus maximising use, for community sports, warm-ups and fitness drills.
- Permits use during overcast conditions and low light levels. Importantly the new installation greatly enhances visibility to enable domestic and international squads to use it for training.
- Demonstrated the ongoing partnership between BISP management and Cricket NSW, and both parties' commitment to invest and provide great cricket training facilities.

Key Learnings

- Ensure sufficient power supply to the site, capable of supporting a 500 lux system – this can be a significant additional cost if not planned adequately.
- Testing lighting levels and benchmarking other venues to ensure preferred and Australian Standards are achieved and maintained.
- The importance of working closely with architects, lighting engineers and users to ensure a user-friendly configuration.

Lighting poles and fixtures

4 pole metal halide system with 5 lamps per pole creates a 500 lux output, suitable for premier cricket and high performance training.

Floodlights in operation

Case Study Braybrook Community Hub

COMPONENT	PROJECT DETAILS
LOCATION	Braybrook Community Hub – 107-137 Churchill Avenue, Braybrook, Victoria 3019
LAND OWNER	Maribyrnong City Council – (03) 9188 5800
COMPONENTS	Multi-purpose shared use community centre and sports pavilion
KEY USES/USERS	Development of the Western Female Cricket Hub, Maribyrnong Greens Soccer Club, Braybrook Royale Soccer Club, community groups and individuals
COST	$12.5 million (excluding GST)
COMPLETED	2015
FUNDING PARTNERS	Maribyrnong City Council, Victorian Government

PROJECT DESCRIPTION

The Braybrook Community Hub is an innovative and integrated facility that accommodates Braybrook's first ever library, maternal and child health services, men's shed, community centre, co-health services, early years centre, maternal and child health centre, new sports pavilion, community gardens and café. The Hub takes a 'whole of family' approach that supports and promotes access to services and information for the entire community.

From a sporting perspective the new facility provides off-field clubrooms and amenities for two existing local soccer clubs and will also be home to Maribyrnong City Council's first women's cricket team. The venue will also become a primary development centre for all levels of women's cricket within Melbourne's western region.

Use by alternate sporting codes will also be available through the facilities' multi-purpose design features, enabling flexible usage by a variety of sporting and community groups. The space also allows facilities to be used outside traditional sporting club match and training hours and during the daytime and business hours.

The design and operation of the venue considered the principles of Universal Design to create spaces that were integrated and flexible for use by all people, including its amenities. In addition the removal of steps between the building and playing area maximised usage of this space for social gathering and spectating within close proximity to kiosk services.

Key Project Outcomes

- The creation of a centralised hub for community education, information, activities and services for the diverse Braybrook community.
- The Hub currently attracts in excess of 10,000 visitors weekly across all of its services.
- The co-location of community and family services provides significant visitation from local residents from which to promote sporting activities to.
- Maribyrnong City Council is the authority responsible for the Braybrook Community Hub. Council has a leadership role in the planning, development and operations of the Hub.
- Joint funding from a range of State Government areas such as: Sport and Recreation Victoria, Living Libraries and Community Support Grants was a great project outcome.

Key Learnings

- A governance Framework was developed to assist with Agreements with co-located partners operating on site.
- Ensuring all operational elements are in place prior to moving into the facility (e.g. Waste management).
- Input and involvement in the design process at the early stages by all funding partners.

Multi-purpose room

View of the multi-purpose room out towards the playing field. High glass panels and doors promote viewing from within the sports pavilion and create a sense of light and space. Moveable tables allow for greater flexibility in use of space and are easy to set-up and pack down. Operable wall between changeroom and social room to create a larger space if required.

Sports pavilion design

Sports pavilion is configured towards the playing field with direct external access to change rooms, first-aid room storerooms, kiosk and multi-purpose sports hall. The building design maximises the playing field frontage while integrating with other internal building areas.

Case Study Indoor Cricket Training Facility

COMPONENT	PROJECT DETAILS
LOCATION	John Mackay Sports Centre – Bankstown Memorial Oval, Bankstown, NSW 2200
LAND OWNER	Bankstown City Council – (02) 9707 9999
COMPONENTS	Indoor cricket training and multi-purpose sports facility
KEY USES/USERS	Premier cricket training with additional community use
COST	$1.8 Million of a total precinct project cost of $4.3 million
COMPLETED	January 2013
FUNDING PARTNERS	Federal Government, NSW Government, Bankstown City Council, Cricket NSW, Bankstown Sports Club and Bankstown District Cricket Club

PROJECT DESCRIPTION

Located within the Bankstown Memorial Oval precinct, the John Mackay Sports Centre is a purpose-built indoor sporting facility - suitable for cricket, soccer, fitness and other indoor sports activities.

The four pitch synthetic 9mm pile indoor training centre provides full length run-ups with fully flexible netting to allow for multiple configurations to suit training needs and user group requirements. It can also be converted to a large, open space for functions to accommodate up to 350 people seated at tables.

The Centre is primarily used by the Bankstown District Cricket Club but also available for other local clubs and user groups to train indoors year-round. The Centre is also used by Cricket NSW Development Squads.

Support facilities include change rooms, commercial kitchen, storage areas, fitness studio and large roller door out to the main oval to provide for combined indoor, outdoor and cross-training activities and easily accommodates large squads and school groups.

"Multi-purpose" was a key theme in the designing of the Centre. For example flexible configuration can be accommodated, and the toilet area can be sealed from the main centre and converted to public use to support key match days and events on the oval.

The Centre is managed by Bankstown District Cricket Club under license from Bankstown City Council. The club is responsible for cleaning, basic repair and renewal and electricity, most of which is funded through hire fees from other users.

Key Project Outcomes

- Indoor training centre that accommodates local to domestic level cricket competition and training squads.
- Indoor training venue accessible year round that complements outdoor training amenities and match day venue.
- Flexible nature of the indoor space maximises its use for a range of cricket and non-cricket activities (including large community functions).

Key Learnings

- There are no seasons in relation to the use of an indoor centre. Experience shows it is strongly used by cricket in the winter for junior academies and other sports have similar off season requirements.
- The overall venue design works well, except additional storage space for cricket kit bags when in full use would be ideal. This could possibly be achieved by reconfiguring the change room areas which receive irregular use.

Flexible netting

Full length cricket pitch with soft flexible netting curtains that can be configured in multiple ways to accommodate different group sizes and a range of different activities.

Roller door

Roller door opens up to the main playing field and spectator concourse and promotes multi-use options and creates better airflow and ventilation during summer months.

Coaches office

Glass fronted coaches office with direct viewing into the cricket pitch area with room for coach-player feedback and desks for digital review and playback.

Case Study Multi-purpose Cricket Net Training Facility

COMPONENT	PROJECT DETAILS
LOCATION	Bill Lawry Oval - Northcote Cricket Club, Northcote, Victoria 3070
LAND OWNER	Darebin City Council – (03) 8470 8888
COMPONENTS	Fully enclosed synthetic cricket practice facility incorporating four practice PITCHES with retractable netting and provision for netball court line marking and goals
KEY USES/USERS	Premier cricket, Australian Rules Football, Netball, informal sport and recreation programming
COST	$155,000 (excluding GST)
COMPLETED	2011
FUNDING PARTNERS	Darebin City Council, Sport and Recreation Victoria and Northcote Cricket Club

PROJECT DESCRIPTION

The synthetic four pitch cricket net enclosure at Bill Lawry Oval in Northcote (Victoria), provides the Northcote Cricket Club, its members and the wider Darebin community with a quality cricket training and multi-purpose sport and recreation facility.

The training facility complements the neighbouring turf training pitches and reduces safety issues associated with the previous sub-standard nets. The enclosed nature of the facility, positioned off the playing area, also provides the precinct with a facility capable of accommodating grassroots cricket activities right through to elite pathway development and coaching programs.

Due to its multi-purpose capability, the Northcote Cricket Club has strengthened its relationship with co-tenants and external sport, recreation and community groups, a desirable outcome for any sporting community and multi-purpose precinct.

Taking pressure off main oval usage, the Northcote Cricket Club has also experienced improved playing conditions and a reduction in site water usage.

The attractive new facility has also increased the appeal of the site with a spike in increased interest by local primary and secondary schools. Use is also maximised through a pin-coded access system, allowing managed access without the need for club volunteers to be available to open, close and secure the venue before and after every use.

Key Project Outcomes

- Increased sport and recreation participation levels through the provision of a quality facility and surface for multiple sports in the Darebin community, including cricket, football and netball.
- Established Centre of Excellence at a premier cricket venue for young players in the Darebin community aspiring to the elite levels of cricket.
- Reduced risk of injury in comparison to issues faced by the previous sub-standard facility.
- Maximised capacity of the site to accommodate multiple training and match participation concurrently.
- Pin coded access maximises usage and security and reduces volunteer management requirements.

Key Learnings

- Planning for the provision of lighting infrastructure would add significant value for year-round usage and increase benefits for winter users.
- For those sites that would accommodate it, consideration of developing synthetic pitches adjacent turf pitch practice areas would improve coaching and training management practices by being in close proximity.
- Combined storage and bowling machine net structures have been the greatest feature to maintain safety, provide security and avoid the need for set up and pack down.

Retractable netting

Retractable netting allows for more flexible use of the multi-purpose enclosure and increased sport and recreation programming opportunities. Roof netting eliminates the risk of damage to neighbouring properties or injury to other reserve users, particularly in high density inner urban areas.

Storage

Adjoining storage enables quick and easy set up and pack down of equipment and lessens the load on players and club volunteers. Retractable netting storage cabinets provide a secure storage option for netting when not in use, promote easy set up and pack down and take up minimal open or programmable space. Shed roller doors open up and gated access doubles as protection for bowling machine operators that can use bowling machines from inside the shed, reducing Workplace Health and Safety issues with moving machines, as well as providing easy access to power.

Case Study Synthetic Cricket Pitch Cover & Applicator

COMPONENT	PROJECT DETAILS
LOCATION	Jamestown Oval, Jamestown SA 5491 – Victoria Park Community Sporting Hub
LAND OWNER	Northern Areas Council - (08) 8664 1085
COMPONENTS	Synthetic cricket pitch cover and applicator
KEY USES/USERS	Multiple cricket clubs and Australian Rules Football clubs
COST	$20,000 plus (excluding GST)
COMPLETED	2013/2014
FUNDING PARTNERS	Northern Areas Council, South Australia Government Office for Recreation and Sport, Belalie Mannanarie Cricket Club, Jamestown Junior Cricket Club, Jamestown Peterborough Football & Netball Club and Spalding Cricket Club

PROJECT DESCRIPTION

Northern Areas Council (located 200km North of Adelaide in South Australia) purchased a Gecko artificial turf cricket pitch cover and applicator to assist with the covering and uncovering of the Jamestown Oval's synthetic cricket pitch during the seasonal changeover. Jamestown Oval is home to both Cricket and Football and used all year round by local sporting clubs.

The local Cricket and Football clubs identified the need for a more efficient way of managing the seasonal change over (synthetic pitch covering and uncovering) and providing a suitable playing surface for both sporting codes. An artificial turf pitch cover and applicator supplied by Gecko Surfacing Solutions has provided Council and the local clubs with a quick, easily managed and safe cricket pitch covering option that provides the Football club with a post cricket season playing surface suitable for football training and match day competition.

This new approach to pitch covering has not only reduced the burden on club volunteers (who previously manually covered and uncovered the pitch) and reduced safety concerns associated with this process, but also reduced the time gap between seasonal ground preparation and increased the longevity of the cricket pitch previously impacted by plastic sheeting, dirt and sods of turf during the winter season.

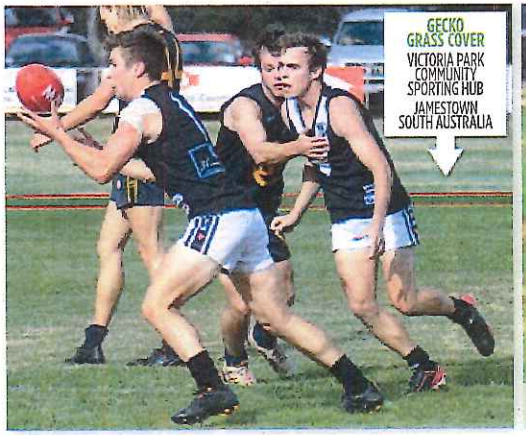
This approach has also been adopted at a second ground in the region, demonstrating its success and also increasing the viability of Council's investment.

Key Project Outcomes

- Safer and more time efficient covering and uncovering of synthetic pitch process.
- Reduced down time between seasonal change over periods.
- Extended lifespan of the synthetic cricket pitch surface.
- Improved partnership between winter and summer tenant clubs.

Key Learnings

- Council or Cricket Association takes 'ownership' of registering and insuring equipment, with costs shared by users.
- Summer and winter sports need to work together to identify the cost savings and benefits and then plan together to raise funds.
- Safe and dry storage of the synthetic pitch cover roll and the applicator need to be considered prior to purchase.



Football surface - winter

Cricket pitch area can be seen in the background, covered with the artificial pitch cover. Areas of dead or worn out grass are minimised and there is a trip free surface with minimal dirt on the playing surface.

Cricket pitch - summer

Standard synthetic cricket pitch surface, showing no ill effects of being covered by the artificial pitch cover during winter.

> We had a foam/carpet cover in the past which had dirt placed around the edge of it. This took six men, plus a forklift and a front end loader about four hours to cover and uncover. Prior to that it was just dirt which caused all sorts of issues for ground levelling, trip hazards, water run-off and took somewhere around six hours the first time and we would be consistently going back across the season to tidy it up. I would be thinking that much of the pitch covering/un-covering methods across the state would not meet many Local Government guidelines hence, the reason we have the Gecko Grass hydraulic machine.

James Lang *Manager*
Community Development Northern Areas Council

Case Study Synthetic Cricket Pitch Cover & Applicator

COMPONENT	PROJECT DETAILS
LOCATION	Onkaparinga City Council – multiple ground locations
LAND OWNER	Onkaparinga City Council – (Ov 8) 8384 0666
COMPONENTS	Synthetic cricket pitch cover and applicator
KEY USES/USERS	Metropolitan community cricket clubs and Australian Rules Football clubs
COST	$90,000 plus (excluding GST)
COMPLETED	2015
FUNDING PARTNERS	Onkaparinga City Council, South Australia Government Office for Recreation and Sport, Kangarilla, McLaren Flat, Cherry Gardens, Flagstaff Hill, Happy Valley, Morphett Vale, Hackham, Port Noarlunga, Aldinga and Willunga Cricket and Football Clubs

PROJECT DESCRIPTION

With multiple grounds in the City of Onkaparinga experiencing high demand and an increasing need for a quicker transition between summer and winter sports, several Cricket and Australian Rules Football clubs in the Onkaparinga area (with support from Council) combined funds and invested in a Gecko artificial turf cover applicator machine and synthetic pitch covers to assist with the prompt and safe covering and uncovering of synthetic cricket pitches at season changeover.

This initiative has not only reduced the volunteer manpower required by local clubs and enabled sports grounds to change purpose in a matter of hours, but has also provided Council and associated clubs with a cost effective process that meets safety regulations and achieves suitable playing conditions for both Cricket and Football.

Despite being a relatively new process, it is envisaged the lifespan of individual cricket pitch surfaces will also be significantly extended via this method as opposed to covering pitches with plastic sheeting, dirt and sods of turf during the winter months. All of which impact the wear and tear on synthetic cricket pitches and contribute to their premature need for renewal and/or replacement.

Key Project Outcomes

- Reduced volunteer requirements and lower Council staff costs to cover and uncover pitches safely.
- Reduced down time between winter and summer sporting season change over.
- Safer method of covering pitches that meets Local Government guidelines.
- Extended life of the synthetic cricket pitch surfaces.

Key Learnings

- A holistic approach by stakeholders that recognises the cost savings and increased efficiency of the process is essential to project success.
- Provision for storage of covers when not in use during summer is a key planning consideration.
- Clear communication between winter and summer tenants and developing a schedule of works (covering/uncovering of pitches) at the beginning and end of seasons minimises club conflict during seasonal changeover.

Start of the Football season

At the conclusion of the cricket season, the rolled up cover is removed from storage, lifted onto the machine and then moved to the cricket pitch location, where a tractor is used to roll out the synthetic grass pitch cover. Pitch covers and rolls are clearly labelled with the ground name and the end in which they should be installed – eg. Morphett Vale Oval Southern End.

Winter Football surface

The cricket pitch area is covered with the synthetic pitch cover. Areas of dead or worn grass are minimised and there is a trip free surface with minimal dirt on the playing surface. One person is required to position the pitch cover and a small amount of dirt allows the edges to come together. The machine rolls up the synthetic cover at the end of the football season and it is then stored in a safe and dry location throughout summer.

Case Study Princes Park: Cricket And Soccer Grounds

COMPONENT	PROJECT DETAILS
LOCATION	Princes Park (Southern Sports Area), Carlton Victoria 3053
LAND OWNER	City of Melbourne – (03) 9658 9658
COMPONENTS	Complete reconstruction of 70,000 m² of natural turf (drainage, irrigation, sand profile, turf) and installation of 2 turf tables for Premier Cricket and 2 synthetic cricket wickets (summer season configuration – all 4 not to be used at same time) and 6 x rectangular pitches (winter season configuration). Lighting provided to entire area at 50 lux; or a combination of 100 lux and 50 lux for parts of the area.
KEY USES/USERS	Premier Cricket (3rd and 4th XI's), Community Club cricket, Senior and Junior Soccer, schools, "touch" competitions and public open space when not in sporting club use
COST	$6.74 million
COMPLETED	Project commenced in March 2014 and completed in July 2015
FUNDING PARTNERS	Victorian Government

PROJECT DESCRIPTION

This project was identified in the 2012 Princes Park Master Plan approved by Council. This project was funded by the Victorian Government in late 2013. The project was identified as one of the mechanisms to combat increasing demand for community sport and recreation, recognising the difficulty of providing these spaces in an inner city environment. It provides maximum flexibility for use, and upgrades a large area of the park that was previously used for parking when AFL matches were held at the Carlton Recreation Ground.

Maintaining the open character of this parkland was an important consideration when developing the Master Plan. Sports lighting for the whole area was also included in order to maximise use of the space, particularly in winter months when community sporting clubs generally require lighting to undertake training. The upgrade provides further opportunities for community cricket on two new synthetic wickets (when Premier cricket is not being played) with opportunities for use during the week, Saturday mornings and Sundays.

The turf used in the area is Village Green Kikuyu, a drought tolerant species that remains green all year round. The new turf tables (Santa Ana couch) are 18m x 25m. The new synthetic wickets are both 2.7m x 25m, covered by a "winter" synthetic pitch cover during the winter months.

Key Project Outcomes

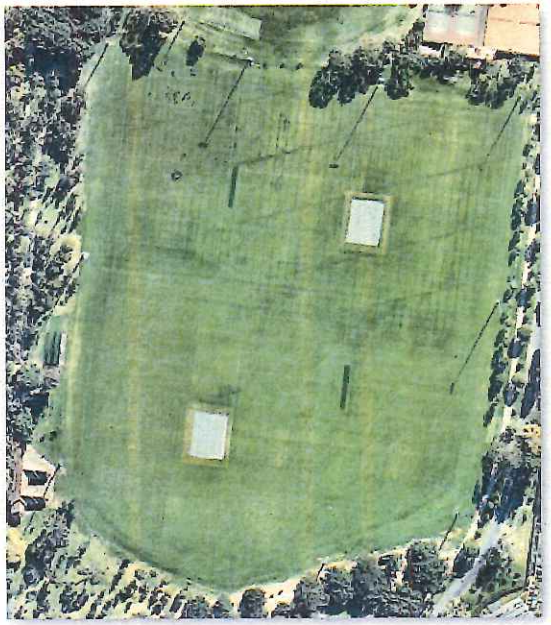
- 70,000 m2 of newly constructed sport and recreation space in an existing park setting.
- Maximise flexibility of the space for both summer and winter seasons.
- New sports lighting added to the entire area.
- Two new synthetic cricket pitches installed.
- Further opportunities to support community sport all year round.

Key Learnings

- The support and strategic direction of "Master Plan" documents is invaluable.
- Keep all stakeholders (internal and external) well informed throughout the entire journey.
- Pay particular attention to contingency plans and relocation plans.
- Plan for the reconstructed area to be unavailable for the maximum time not the minimum time.

SUMMER CONFIGURATION

- 2 turf cricket grounds with 65m radius boundary – Premier Cricket
- 2 synthetic cricket grounds – community cricket (not to be used at same time as Premier Cricket)



WINTER CONFIGURATION

- 6 full size soccer pitches, line marked with cricket pitches located off soccer playing fields
- Turf tables protected with growth mats
- Synthetic wickets covered with a "winter" cricket pitch cover

Case Study Dual Synthetic And Turf Pitches

COMPONENT	PROJECT DETAILS
LOCATION	Donvale Reserve Oval #2, Noonan Way, Donvale, Victoria 3111
LAND OWNER	Manningham City Council - (03) 9840 9333
COMPONENTS	Dual synthetic and turf wickets – single synthetic centre wicket adjacent to turf pitch square
KEY USES/USERS	Main users include Donvale Cricket Club (Eastern Cricket Association Senior D and F Grade Turf competition and Box Hill Reporter District Cricket Association Junior competition on synthetic wicket) and Donvale Magpies Junior Football Club (Eastern Football League)
COST	Unknown
COMPLETED	The dual pitch configuration has been in operation since 2007/2008
FUNDING PARTNERS	City of Manningham

PROJECT DESCRIPTION

Donvale Reserve Oval #2 is a dual synthetic and turf wicket ground that is used in summer for Senior Turf cricket and Junior synthetic wicket competition.

The ground is used predominately for Saturday turf cricket, with opportunity for use by junior teams on Friday evenings and Saturday mornings on the synthetic pitch.

Due to local ground capacity issues the dual pitch arrangement was established to cater for the Donvale Cricket Club's growing number of teams.

A critical component to the success of the dual wicket set-up is strong communication between all users. In the Donvale Reserve example, the City of Manningham as the appointed ground curator has ultimate control of the wickets and determine how they are scheduled, used and covered (depending on weather conditions). This decision can impact both synthetic pitch and turf wicket users and is made in consultation with users.

The synthetic wicket remains exposed and uncovered while turf wickets are in use. Ensuring the pitch is level with the surrounding area is essential to maintaining playability and player safety.

Developing player confidence and education on the presence of the synthetic surface does take some time to develop.

Key Project Outcomes

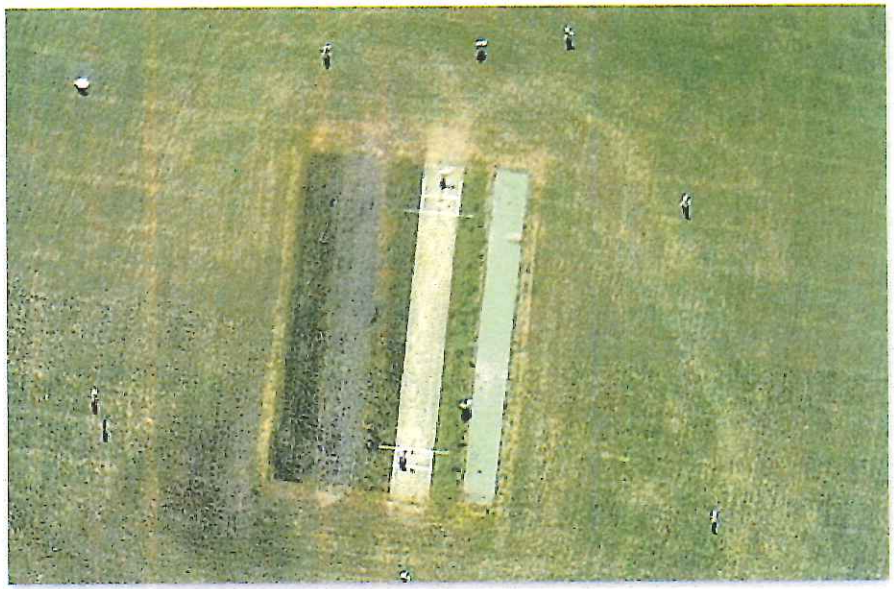
- Dual wickets have maximised the use of existing grounds within the City of Manningham.
- Synthetic wicket allows the predominately turf club to provide for and grow its junior base and pathway into senior cricket.
- Synthetic wicket provides a centre wicket training option, one that was previously not available to a turf wicket based club.

Key Learnings

- The support and strategic direction of "Master Plan" documents is invaluableEnsure the wicket area is level with all surrounds to avoid any safety risks with an uneven surface.
- Under 14 and Under 12 teams are the main users of the synthetic wicket to minimise wear and tear or damage to the turf square.
- Weather still plays a key factor in usage of the ground and management of wicket covering to preserve the integrity of the turf wickets. Match play on the synthetic pitch can be cancelled as a result of the turf pitch being covered.
- There is a need to clearly establish priority of use and communicate that to user clubs, players, opposition teams and parents.
- Local Association rules regarding covering of turf pitches will impact availability of the synthetic pitch (e.g the Eastern Cricket Association requires for all turf wickets to be covered by 7pm each Friday evening). Plan for the reconstructed area to be unavailable for the maximum time not the minimum time.

Centre wicket set-up

Image of turf pitches and square and positioning of synthetic cricket pitch. Minimisation of trip hazards and raised lips around the synthetic pitch area and stump holes is critical to developing player confidence and maintaining safety. Location of the synthetic wicket too close to the turf square can create some issues with batsmen running on the pitch with spikes. Turf pitch rotation becomes important in this instance.



Aerial image of Donvale Reserve Oval #2

Aerial image demonstrates the use of the turf wicket square for a Senior cricket match, with the synthetic wicket adjacent, uncovered.

State And Territory Contacts

Please refer to the following State and Territory contacts to discuss your potential project(s) in greater detail.

CRICKET ACT	02 6239 6002
CRICKET NSW	02 8302 6000
CRICKET TASMANIA	03 6282 0400
QUEENSLAND CRICKET	07 3292 3100
CRICKET VICTORIA	03 9653 1100
NORTHERN TERRITORY CRICKET	08 8944 8900
SOUTH AUSTRALIAN CRICKET ASSOCIATION	08 8300 3800
WESTERN AUSTRALIAN CRICKET ASSOCIATION	08 9265 7222
CRICKET AUSTRALIA: NATIONAL COMMUNITY FACILITIES MANAGER	03 9653 8826
CRICKET AUSTRALIA: MANAGER OF CLUB CRICKET	03 9653 8861

ACKNOWLEDGEMENT OF COUNTRY

We at Cricket Australia, through the Club Cricket Program and more broadly, would like to acknowledge Aboriginal and Torres Strait Islander Australians past and present, and recognize the distinctive rights that Indigenous Australians hold as the original peoples of this land.

Cricket Australia supports initiatives that help build capacity, knowledge and strengthen relationships with Australia's Indigenous communities. Reconciliation with Australia's traditional owners is an outcome that Cricket Australia supports.

Cricket Australia acknowledges the wonderful contribution Indigenous communities and cricketers have made to this land we all call home – Australia.

VISUAL TREE ASSESSMENT (VTA) AND IMPACT ASSESSMENT REPORT

LOCATION: MORVEN PARK, 1-3 BARCLAY STREET, EVANDALE

COMPLETED FOR: NORTHERN MIDLANDS COUNCIL

DATE: 24TH MARCH 2021

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BRISBANE STREET
LAUNCESTON.

HONG KONG OFFICE
ROOM 605 PARK TOWER
15 AUSTIN ROAD
KOWLOON. HONG KONG

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY

ENSPEC was requested by Northern Midlands Council to conduct a ground based Visual Tree Assessment (VTA), Tree Impact Assessment and provide a written report, regarding a mature *Quercus robur* (English oak) located in the rear garden of 20 High Street, Evandale. The tree is in private ownership and had been raised as a concern due to proposed construction of new cricket nets within Morven Park, Evandale, beneath the canopy of the tree.

The tree is a large, mature and prominent specimen located within a residential property. The wide-spreading canopy overhangs the rear garden of the residential property and detached garage, and over the maintained parkland within Morven Park to the east. The tree provides a very high significant contribution to the wider visual amenity and is of high habitat value.

One low branch on the northern side of the canopy was observed to have torsion cracks in two locations however, this was assessed to be a low risk to people due to the branch being near touching the ground in the council reserve.

The tree was assessed to be in good health and condition with no significant structural issues that required immediate remedial or preventative pruning intervention.

The new cricket nets are proposed to be constructed approximately 1 metre northeast from the northeast boundary of 20 High Street, Evandale and perpendicular to the southeast end of the tennis court approximately 2.20m from the fence enclosure. The cricket nets will be located directly beneath the canopy of the tree.

The proposed design would result in encroachment into the nominal Tree Protection Zone (TPZ) by approximately 10% which is at the upper limit of what is categorised as minor, as advised in Australian Standard AS4970-2009. Encroachment into the Structural Root Zone (SRZ) was estimated to be approximately 21% and is classed as major encroachment.

The proposed design would also require significant pruning of the northeast canopy of the tree potentially impacting its long-term health, structural integrity and visual appearance.

In light of potential harmful impact on the above and below ground parts of the tree as a result of the proposal, three options detailing amelioration and tree protection measures are provided below:

Option A.
Relocation of the existing cricket nets further to the southeast and outside of the tree's TPZ.

This option represents the least harm to the tree with no construction activities being required within the TPZ or canopy pruning required to the clear the new cricket nets.

Option B.
Relocation of the proposed cricket nets, at least 7 metres northeast of the northeast boundary of 20 High Street, Evandale. This would reduce the level of encroachment into the TPZ to less than 5% and there would be no impact on the SRZ. Construction of the concrete slab with enhanced reinforcement above the existing ground level is the only option to build the practice pitch to ensure the impact on roots is minimised.

Pruning required to clear the relocated side nets would result in smaller pruning wounds and have less impact on the health and visual appearance of the tree than Option C (below).

Option C.
Construction of the concrete base, for the new cricket nets, above the existing ground level and without excavations within the TPZ. This would reduce the impact of construction works on the root system of the tree however, the impervious nature of the concrete slab would reduce the level of water available to underlying roots and limit gaseous exchange resulting in a dramatic impact to the trees long-term health and useful life expectancy. Given the highly reactive nature of the underlying clay soil, the concrete slab would need to be at least 150mm in thickness and contain additional reinforcement either by incorporating two layers of rebar or alternatively, a single layer of rebar together with tensioning cables.

Installation of 3 metre tall side nets, as proposed, will require extensive pruning of the tree canopy where it overhangs the cricket nets. This will result in large pruning wounds being created and a significant loss of canopy that would affect both the tree's visual appearance and its ability to produce and store energy vital for maintaining good health and growth. Further the pruning of the canopy would result in an opening that could result in premature branch failure through the trees canopy due to altering the wind dynamics of the tree.

This is the least preferred option as it potentially has the most impact on the tree.

In this instance ENPSEC recommends <u>Option A</u> to be implemented. Option B and C is not recommended.

2. BRIEF & INSPECTION METHODOLOGY

ENSPEC was requested by Northern Midlands Council to conduct a ground based Visual Tree Assessment (VTA), Tree Impact Assessment and provide a written report, regarding mature *Quercus robur* (English oak) located in the rear garden of 20 High Street, Evandale. The tree is in private ownership and had been raised as a concern due to proposed construction of new cricket nets within Morven Park, Evandale, beneath the canopy of the tree.

Site methodology involved a detailed visual inspection of all parameters pertaining to the tree's present health. The influence of previous and proposed activities on the trees current and future condition was considered during the assessment.

Measurements were taken for the calculation of the Tree Protection and Structural Root Zones in accordance with AS4970-2009 *Protection of trees on development sites*. All other dimensions were visually estimated.

The following drawings were provided, and the information contained within them was used in the compilation of this report:

- *Morven Park – CRICKET NETS OPTION 2. A02_Rev*

3. DATE OF INSPECTION

The Visual Tree Assessment (VTA) was conducted on the 15th March 2021; the weather conditions while conducting the assessment were clear and dry.

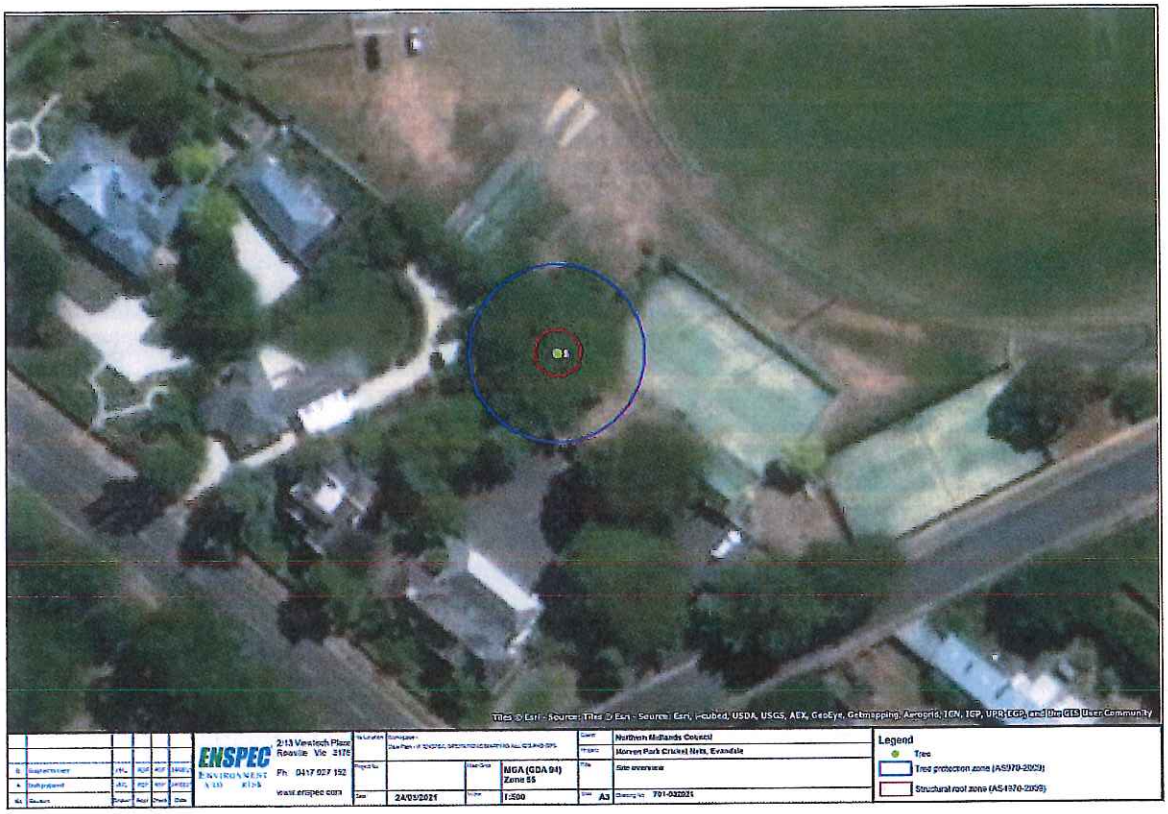
4. ARBORIST CONDUCTING ASSESSMENT

Name of Arborist	**Craig Hallam**
Qualifications	Advanced Diploma, Horticulture (Arboriculture) Diploma Arboriculture Diploma Ecology Diploma Horticulture (Arboriculture) Certificate III Ecology QTRA – Registered User No 3965 Cert IV Assessment and Workplace Training
Australian Arborist Industry Licence	Tier One Professional Registered Consulting Arborist Number AL1209
Contact phone number	+61 417 027 152
E-mail Address	craig.hallam@enspec.com
Name of Arborist	**Russ Fisher**
Qualifications	Certificate in Arboriculture Level 6 (UK) Certificate in Arboriculture Level 2 (UK) LANTRA Professional Tree Inspection Certificate (UK) QTRA - Registered User No 6019 TRAQ Qualified
Contact phone number	0417 702 190
E-mail Address	russ.fisher@enspec.com

5. OVERVIEW PHOTOGRAPH /MAP OF TREE LOCATION

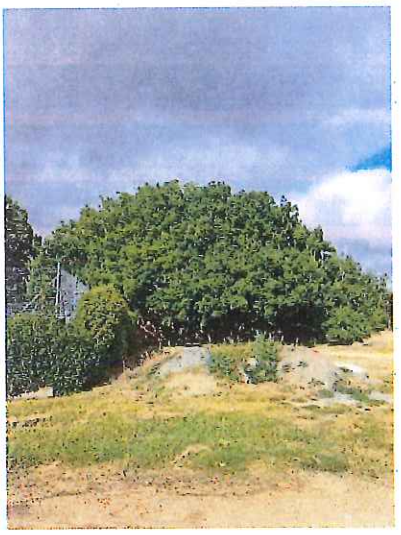
1-150

Plate 1. An enlarged version of the below map is attached as Appendix 1.



6. DESCRIPTION OF TREE SPECIES & TREE INFORMATION

Tree ID	*1*
Botanical Name	*Quercus robur*
Common Name	English oak
Tree Height (estimated)	14 metres
Tree Spread (estimated)	E-W 32 metres N-S 35 metres
Tree Maturity	Mature
Diameter at Breast Height (DBH)	125cm
Tree Protection Zone radius	15 metres
Structural Root Zone radius	3.9 metres
Retention Value	High
Viability	Good



7. TOPOGRAPHY / BACKGROUND STATEMENT

The large, mature tree is located within the rear garden of a residential property and immediately adjacent to the southwest boundary of Morven Park. The tree is a significant and prominent feature of the property and provides an important contribution to the wider visual amenity.

A detached garage within the residential property is located to the south of the tree.

The wide-spreading canopy overhangs the rear garden of the residential property, detached garage and over the maintained parkland within Morven Park to the east.

8. OBSERVATIONS OF TREE CONDITION

8.a. Root Plate Statement

There was no evidence of soil heave, subsidence or any other indications of root plate instability of any of the tree.

8.b. Root and Trunk Buttress Statement

The tree displayed well-developed root/trunk buttressing and basal flare indicative of good root development providing structural support.

8.c. Tree Trunk Structure Statement

The single trunk divides into multiple large scaffolds at approximately 3 metres. The codominant scaffold union was observed to be well-formed with no obvious structural issues evident.

Historic pruning wounds, observed on the eastern side of the southern scaffold, displayed woundwood development typical of the species with good occlusion of the wounds. A recent pruning wound was observed on the northern scaffold at 3 metres above ground level. (Plate 2).

8.d. Tree Branches and Limb Statement

Branch architecture and spatial arrangement was assessed to be typical of the species. The canopy has a wide, low-domed appearance and consists of wide-spreading structural branches, particularly in the lower canopy. Canopy clearance over Morven Park was generally below 2 metres with the northern side of the canopy extending down to ground level.

Branch unions throughout were generally open and well formed, typical of the species and were assessed as being structurally sound at the time of inspection.

One low branch on the northern side of the canopy was observed to have torsion cracks in two locations (Plate 3). The branch has partially subsided with its distal end now being in contact with the ground. (Plate 4). Further subsidence of the branch was assessed to be unlikely as it is supported by the ground. The risk of the branch failing and impacting people was assessed to be low.

Plate 2

Plate 3

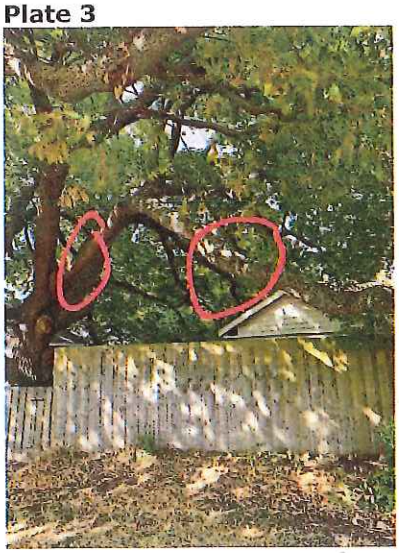


Plate 4

8.e. Canopy/Foliage Statement

Foliage size, colour and density was typical for the tree and indicates general good health and vitality.

8.f. Size of Dead Wood Statement

The canopy contained occasional dead wood measuring 5-8cm diameter and is typical for a tree of its maturity.

8.g. Pest and Disease Statement

No evidence of pests or disease issues were observed.

9. LIFE EXPECTANCY OF TREE

The tree in its current location has an estimated life expectancy of greater than 50 years. This estimation is based upon the tree's current health and growing condition.

10. DISCUSSION

The tree is a large, mature and prominent specimen located within a residential property. The tree provides a significant contribution to the wider visual amenity and is of high habitat value.

The tree was assessed to be in good health and condition with no significant structural issues that required immediate remedial or preventative pruning intervention.

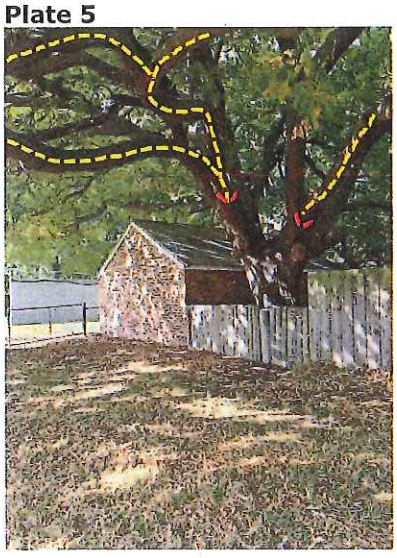
New cricket nets are proposed to be constructed approximately 1 metre northeast from the northeast boundary of 20 High Street, Evandale and perpendicular to the southeast end of the tennis court approximately 2.20m from the fence enclosure. The cricket nets will be located directly beneath the canopy of the tree.

Encroachment into the nominal Tree Protection Zone (TPZ) was estimated to be approximately 10% and at the upper limit of what is categorised as minor encroachment, as advised in Australian Standard AS4970-2009.

Encroachment into the Structural Root Zone (SRZ) was estimated to be approximately 21% and is classed as major encroachment.

Interpretation of the guidance set out in AS4970-2009 indicates that construction of the concrete base for the new cricket nets within the TPZ could be undertaken, subject to appropriate tree protection measures and special construction techniques to limit the potentially harmful effects of the construction works.

Plate 5



However, major encroachment into the SRZ has the potential to cause significant damage to the tree's structural, woody and feeder roots that occupy the favourable soil conditions in the open ground area within Morven Park.

Construction of the concrete base for the cricket nets could be undertaken above the existing ground level and without excavations within in the TPZ. This would reduce the impact of construction works on the root system of the tree however, the impervious nature of the concrete slab would reduce the level of water available to underlying roots and limit gaseous exchange. Given the highly reactive nature of the underlying clay soil, the concrete slab would need to be at least 150mm deep and contain additional reinforcement either by incorporating two layers of rebar or alternatively, a single layer of rebar together with tensioning cables.

Installation of 3 metre tall side nets, as proposed, will require extensive pruning of the tree canopy where it overhangs the cricket nets (as indicated in Plate 5). This will result in large pruning wounds being created and a significant loss of canopy that would affect both its visual appearance and its ability to produce and store energy vital for maintaining good health and growth

The intensity of recreational activities will inevitably increase in the vicinity of the new cricket nets and additional pruning of the canopy would be required to increase clearance above the ground. The tree was assessed to present a low risk to people, partly due to the low occupancy rate of the area beneath the canopy. However, as the occupancy rate would increase through use of the new cricket nets, so too would the risk of potential harm presented by the tree.

Relocation of the proposed cricket nets, to at least 7 metres northeast of the northeast boundary of 20 High Street, Evandale, would reduce the level of encroachment into the TPZ to less than 5% and there would be no impact on the SRZ. Construction of the concrete slab with enhanced reinforcement above the existing ground level (as discussed above) would ensure the impact on roots is minimised.

Pruning required to clear the relocated side nets would result in smaller pruning wounds, and less impact on the visual appearance of the tree. The risk to people from the tree would also be slightly reduced, primarily due to the size of the part of the tree, with the potential for failure, being significantly smaller.

Alternatively, relocation of the existing cricket nets further to the southeast and outside of the tree's TPZ would remove all impacts of the proposed design on both the above and below ground parts of the tree negating the need for special construction techniques.

10.a. AS4970-2009 Protection of trees on development sites

The Tree Protection Zone and Structural Root Zone for each of the trees has been calculated in accordance with AS4970-2009 *Protection of trees on development sites*. The radius of the zones in metres is provided in the data tables, as well as being shown on the accompanying maps.

Tree No.	DBH (m)	Basal diameter (m)	TPZ radius (m)	SRZ radius (m)	Estimated excavation distance (m)	TPZ Area Encroachment (%)	SRZ Area Encroachment (%)
1	1.25	1.45	15.00	3.90	~1.00	~10.00	~21.00

10.b. Pruning

Selective pruning of the canopy overhanging the proposed location of the new cricket nets to provide adequate clearance from the structure would be required. The extent of pruning would vary depending on the layout of the final design. Pruning of this extent to such a mature tree should not be undertaken.

Any pruning work must be carried out by appropriately qualified arborists working to AS4373-2007 *Pruning of amenity trees*.

11. RECOMMENDATIONS & REMEDIAL WORKS

Option A.
Relocation of the existing cricket nets further to the southeast and outside of the tree's TPZ. This option represents the least harm to the tree with no construction activities being required within the TPZ or pruning of the canopy required to the clear the new cricket nets.

This option is recommended as there would be negligible impact on the tree.

Option B.
Relocation of the proposed cricket nets, to at least 7 metres northeast of the northeast boundary of 20 High Street, Evandale. This would reduce the level of encroachment into the TPZ to less than 4% and there would be no impact on the SRZ. Construction of the concrete slab with enhanced reinforcement above the existing ground level would ensure the impact on roots is minimised.

Pruning required to clear the side nets would result in smaller pruning wounds and less impact on the visual appearance of the tree.

Option C.
Construction of the concrete base, for the new cricket nets, above the existing ground level and without excavations within in the TPZ. This would reduce the impact of construction works on the root system of the tree however, the impervious nature of the concrete slab would reduce the level of water available to underlying roots and limit gaseous exchange. Given the highly reactive nature of the underlying clay soil, the concrete slab would need to be at least 150mm thickness and contain additional reinforcement either by incorporating two layers of rebar or alternatively, a single layer of rebar together with tensioning cables.

Installation of 3 metre tall side nets, as proposed, will require extensive pruning of the tree canopy where it overhangs the side nets. This will result in large pruning wounds being created and a significant loss of canopy that would affect both the tree's visual appearance and its ability to produce and store energy vital for maintaining good health and growth.

This is the least preferred option as it potentially has the most impact on the tree.

12. CONCLUSION

The tree is a large, mature and prominent specimen located within a residential property. The wide-spreading canopy overhangs the rear garden of the residential property and detached garage, and over the maintained parkland within Morven Park to the east. The tree provides a significant contribution to the wider visual amenity and is of high habitat value.

One low branch on the northern side of the canopy was observed to have torsion cracks in two locations however, this was assessed to be a low risk to people due to the branch near touching the ground in the reserve area.

The tree was assessed to be in good health and condition with no significant structural issues that required immediate remedial or preventative pruning intervention.

The new cricket nets are proposed to be constructed approximately 1 metre northeast from the northeast boundary of 20 High Street, Evandale and perpendicular to the southeast end of the tennis court approximately 2.20m from the fence enclosure. The cricket nets will be located directly beneath the canopy of the tree.

The proposed design would result in encroachment into the nominal Tree Protection Zone (TPZ) by approximately 10% which is at the upper limit of what is categorised as minor, as advised in Australian Standard AS4970-2009. Encroachment into the Structural Root Zone (SRZ) was estimated to be approximately 21% and is classed as major encroachment.

The proposed design would also require significant pruning of the northeast canopy of the tree potentially impacting its long-term health, structural integrity and visual appearance.

In light of potential harmful impact on the above and below ground parts of the tree as a result of the proposal, three options detailing amelioration and tree protection measures are provided below:

Option A.
Relocation of the existing cricket nets further to the southeast and outside of the tree's TPZ.

This option represents the least harm to the tree with no construction activities being required within the TPZ or canopy pruning required to the clear the new cricket nets.

Option B.
Relocation of the proposed cricket nets, at least 7 metres northeast of the northeast boundary of 20 High Street, Evandale. This would reduce the level of encroachment into the TPZ to less than 5% and there would be no impact on the SRZ. Construction of the concrete slab with enhanced reinforcement above the existing ground level is the only option to build the practice pitch to ensure the impact on roots is minimised.

Pruning required to clear the relocated side nets would result in smaller pruning wounds and have less impact on the health and visual appearance of the tree than Option C (below).

Option C.
Construction of the concrete base, for the new cricket nets, above the existing ground level and without excavations within the TPZ. This would reduce the impact of construction works on the root system of the tree however, the impervious nature of the concrete slab would reduce the level of water available to underlying roots and limit gaseous exchange resulting in a dramatic impact to the trees long-term health and useful life expectancy. Given the highly reactive nature of the underlying clay soil, the concrete

slab would need to be at least 150mm in thickness and contain additional reinforcement either by incorporating two layers of rebar or alternatively, a single layer of rebar together with tensioning cables.

Installation of 3 metre tall side nets, as proposed, will require extensive pruning of the tree canopy where it overhangs the cricket nets. This will result in large pruning wounds being created and a significant loss of canopy that would affect both the tree's visual appearance and its ability to produce and store energy vital for maintaining good health and growth. Further the pruning of the canopy would result in an opening that could result in premature branch failure through the trees canopy due to altering the wind dynamics of the tree.

This is the least preferred option as it potentially has the most impact on the tree.

In this instance ENPSEC recommends Option A to be implemented. Option B and C is not recommended.

13. REFERENCES

- Norris, M. 2010., *Acts of God: Urban Tree Management*. Proceedings of the 11th National Street Tree Symposium, TREENET, Adelaide.
- AS4970-2009 *Protection of Trees on Development Sites.* SAI Global.
  International Society of Arboriculture., *Tree Risk Assessment Qualification (TRAQ).*
- Schwarze, F.W.M.R., 2008. *Diagnosis and Prognosis of the Development of Wood Decay in Urban Trees.* ENSPEC, Rowville.

14. DISCLOSURE STATEMENT

ENSPEC Pty Ltd and their employees are specialists who use their knowledge, training and education (qualifications), infield learning experiences, personal experiences research, diagnostic tools, scientific equipment to examine trees, recommend measures to enhance the beauty, health and preservation of trees, to reduce the risk of living near trees.

Trees are living organisms that can be affected by pests, diseases and natural events outside of ENSPEC control. ENSPEC and their employees cannot detect every condition that affects a trees health, condition and structural integrity. Conditions are often hidden within trees and below ground where humans cannot naturally see. Unless otherwise stated, ENSPEC's employee's observations have been visually made from ground level.

In the event that ENSPEC recommends retesting or inspection of trees at stated intervals, or ENSPEC recommends the installation engineering solutions, ENSPEC must inspect the engineering solution at intervals of not greater than 12 months, unless otherwise specified in writing. It is the client's responsibility to make arrangements with ENSPEC to conduct re-inspections.

Intervention treatments of trees may involve considerations beyond the scope of ENSPEC's service, such as property boundaries and ownership, disputes between neighbours, sight lines, landlord-tenant matters and other related incidents. ENSPEC cannot take such issues into account unless complete and accurate information is given prior or at the time of the site inspection. Likewise, ENSPEC Pty Ltd cannot accept responsibility for the authorisation or non-authorisation of any recommended treatment or remedial measures undertaken.

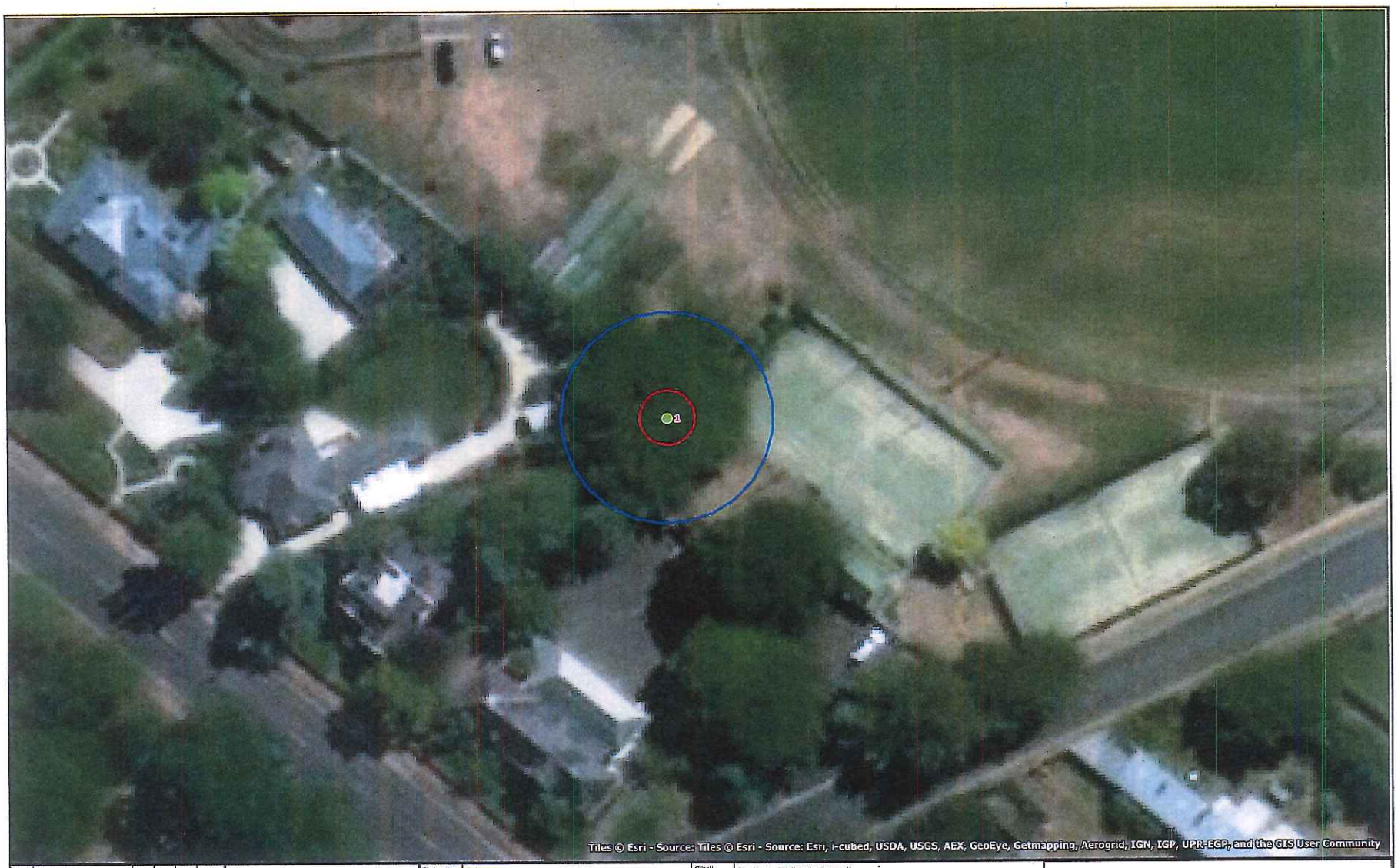
ENSPEC Pty Ltd cannot guarantee that a tree will be healthy or safe under all circumstances or for a specified period of time after our initial inspection and recommendations.

If this written report is to be used in a court of law, or any other legal situation, or by other parties ENSPEC must be advised in writing prior to the written report being presented in any form to any other party. All written reports must be read in their entirety. At no time shall part of the written assessment be referred to unless taken in full context with the whole written report.

Clients may choose to accept or disregard the recommendations of the assessment and written report.

Notwithstanding anything in the report, express or implied, the client is not entitled to recover from ENSPEC Pty Ltd, its employees, agents and/or subcontractors any damages for business interruption or loss of actual or anticipated revenue, income or profits or any consequential, special, contingent or penal damage, whatsoever, and the client releases ENSPEC Pty Ltd from any such liability. Without limitation of the foregoing, a party shall at all times be limited (to the extent permitted by law) damages in the amount paid by the Client to ENSPEC Pty Ltd for ENSPEC Pty Ltd services. The limitation applies whether the claim is based on warranty, contract, statute, tort (including negligence) or otherwise.

15. APPENDIX 1 - OVERVIEW MAP OF TREE PROTECTION ZONES & STRUCTURAL ROOT ZONES



No	Revision	Drawn	Appr	Check	Date
B	Supplied to client	JML	RSF	RSF	24/03/21
A	Draft prepared	JML	RSF	RSF	24/03/21

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File Location: Workspace - Data Path - H:\ENSPEC OPERATIONS\MAPPING ALL GIS AND GPS

Project No:

Map Grid: MGA (GDA 94) Zone 55

Date: 24/03/2021

Scale: 1:500

Client: Northern Midlands Council

Project: Morven Park Cricket Nets, Evandale

Title: Site overview

Size: A3

Drawing No: 701-032021

Legend
- Tree
- Tree protection zone (AS970-2009)
- Structural root zone (AS4970-2009)