

Appendix H

Sports Field Lighting Project Checklist

SPORTS FIELD LIGHTING CHECKLIST

This checklist has been developed by MBRC as a guide to assist the community in the preparation of sports field light installations. The checklist identifies key information that is required to be submitted to Council to obtain landowner's permission and to assist with project management. The details of Sections 1-4 should also be provided to the organisation's lighting designer to achieve the desired outcome.

1. SITE ANALYSIS

A. Who owns the land that is proposed to be developed?

- State Government – Proof of resource entitlement may be required. Approval from Council (as trustee) through the lodgment of an Improvement Works Application process will be required
- Council – Approval through the Improvement Works Application process will be required

An Improvement Works Application (IWA) is required to obtain permission from Council to undertake the project. Refer to www.moretonbay.qld.gov.au/improvementworks for details.

B. Are there any site conditions that require special consideration?

- Former landfill site - additional footings are likely to be required
- Flood zone - electrical gear is to be installed above the flood line
- Protected trees that cannot be trimmed - the design must be adjusted to avoid impacting the trees
- Other (e.g. Light Spill)
- Nil

C. Is the area proposed for the lighting project currently lit for sports use?

- Yes
- No - A Development Permit may be required. Council will advise of this requirement through the Improvement Works Application process

D. Has an audit been undertaken on the existing infrastructure?

- Yes - check that all items included in 'No' have been obtained
- No - A lighting audit should be undertaken to establish the current lighting (lux) levels, the condition of the existing poles, the capacity for poles/cross-arms to carry additional lights and the capacity of the electrical infrastructure (transformer, switchboard, distribution boards, cables and conduits) to accommodate new lights

2. FIELD LIGHTING AND FOOTINGS DESIGN

Please refer to the Australian Standard for sports lighting applicable to the sporting code. Please note that there are different lighting levels for training and competition. For example: Outdoor Hockey - Australian Standard (AS 2560.2.7 - 1994)

Ball training junior and minor grade competition	250 lux
Major grade club, national and international competition	500 lux

A. Specify the area/s of the site to be lit on a site map with aerial base

- Field/s only
- Overflow activity spaces
- Other non-participation areas (ie. lighting to assist last person to leave)

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B. Determine the lighting level (safety, training, competition, semi-professional or professional) to be achieved in each of the areas identified for the immediate project and for any future projects.

These levels must be demonstrated to be achieved at the luminaire's 'end of life':

- Immediate project (e.g. competition 110 lux)
- Future requirement (e.g. semi-professional 200 lux)

Minimum lux levels are prescribed by the Australian Standard (AS) for the particular sport. Also check with the Regional, State or National Sporting Organisation for any requirements above the Australian Standard. Note that future lighting upgrades may be required due to a change in the AS, the governing body's standards, the club moving into a higher level of competition or the co-location of another sport that requires a higher standard of lighting. Infrastructure for the higher level of lighting should be constructed as part of the initial project as 'upgradable to x lux' in the future, to prevent duplication of works.

C. Are there any specific areas that require higher levels of lighting to accommodate a different sport? (e.g. softball in the corner of a football field)

- Yes - identify the area of higher lighting on the site plan
- No

D. Is the lighting upgrade proposed to be undertaken in multiple stages?

- Yes - prepare details of each stage of development and indicate how each stage meets the Australian Standard for the sport identified
- No

E. Does the design propose to use or relocate existing poles?

- Yes - Certification from an RPEQ is to be provided to confirm that reuse/relocation of poles is possible, and the structural capacity is suitable for the additional weight and sail area of new lights
- No

F. Are the light poles offset a minimum of 5m from the playing field boundary?

- Yes - confirm with the sport's governing body if any additional distance is required prior to accepting the design
- No - obtain confirmation in writing from the sport's governing body of the minimum safety distance required from the playing field boundary and include with the Improvement Works Application

G. Does the height and configuration of the poles meet the requirements of the sport's governing body, will it accommodate future lighting level upgrades and is it the most cost efficient?

- Yes - Ensure that the chosen configuration provides for future upgrades if required
- No - Consider an alternative design

Many sports fields can be lit by a greater number of shorter poles or fewer but taller poles. Extra poles on landfill sites will escalate costs due to significant footings. A cost-benefit analysis should be undertaken to determine the preferred approach.

H. Does the lighting have the potential to impact on surrounding residences?

- Yes - A lighting spill plan is required to demonstrate compliance with AS4282 Effects of Obtrusive Lighting. Rear shields may be required to be fitted to the lights. The lighting plan must identify if shields are incorporated to achieve the final light levels
- No - A lighting spill plan is required to demonstrate compliance with AS4282 Effects of Obtrusive Lighting

I. Has the effect of vegetation been taken into account?

- Yes - the lighting design cannot use vegetation to conform to AS4282 Effects of Obtrusive Lighting
- No - the positioning of the poles should avoid vegetation to prevent future 'shading' of the lights

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J. Has a copy of the lighting design been provided by a certified sports field lighting designer for each level of lighting, demonstrating compliance with the relevant standards?

- Yes - a copy of all designs is to be provided with the Improvement Works Application
- No - all above documentation will be required before Council can provide permission for the project

K. Has the lighting design been submitted to Council via an Improvement Works Application?

- Yes
- No - visit www.moretonbay.qld.gov.au/improvementworks

3. SPORTS FIELD LIGHTING CONTROL

A. Are any requirements for the lights to be able to be switched in different configuration, in order to reduce unnecessary expense? Match the locations to the site plan.

- Different areas of field usage (e.g. half field only)
- Different lighting levels to correlate with activities being undertaken (i.e.. training v competition)

B. Specify the preferred location for:

- Site switchboard - consider future access by club personnel and electricians
- Lighting control box - consider inside vs outside the clubhouse, proximity to exit points/car park and accessibility by other user groups

C. What is the preferred light switching mechanism?

- Select from traditional switches, electronic control, mobile phone app control (e.g. E-Switch) or other - discuss options with the lighting designer
- Determine if there is a need for a push-button timer or similar to assist the exit of the last person

D. What is the preferred access to the lighting controls based on usage of the facility?

- Padlock and key access - consider hierarchy, who should be provided access and the need to provide keys to other users without gaining access to other facilities
- PIN pad entry
- Other - discuss options with the lighting designer

E. Is any mechanism required to record electricity consumption?

- For example, by different user groups or to separate electricity used in the clubhouse from the field lights.
- Yes - options may include sub-meters, computer programming or other. Discuss options with the lighting designer. Consider other equipment or ongoing costs that may be required to use the system such as a laptop or SIM card access
- No

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4. CONTRACT INCLUSIONS

- A. Has soil/geotechnical testing been undertaken at the proposed location of each light pole?
- Yes - the results should be used to confirm the suitability of the footings design
 - No - quotes from sports field lighting installation companies will generally rely on a minimum soil bearing capacity. Additional costs will be incurred where soil conditions do not meet criteria, such as sandy soil profiles or landfill sites. The location of concrete, rock or asbestos during installation will also increase cost. If sub-standard conditions are known to exist, soil testing is highly recommended
- B. Has a site-specific footing design been obtained prior to obtaining quotes?
- Yes - provide the design to all companies quoting on the works
 - No - as per 4A, any adverse conditions found during the works may substantially increase the cost of works, which may not be included in the project budget. Ensure that the contractor includes a footing design in their scope of works
- C. Is there any requirement for external power points at the base of light poles or on switchboards?
- Yes - ensure the number and location are provided to the lighting designer
 - No
- D. Is there a requirement for a new/upgraded Energex meter?
- Yes - ensure the cost is included in the contractor's quote
 - No

5. FINANCIAL ASSESSMENT

- A. The organisation has obtained estimates for the following items:
- Running costs of the lights at each lighting level (\$ per kWh)
 - Maintenance and cleaning schedules and costs
 - Lamp rated life in hours
 - Lamp replacement costs, including labour, equipment and other associated costs
- B. Will the proposed lighting installation or upgrade increase the club's electricity consumption above 100 MWh per annum?
- Yes - consider options to reduce consumption. If you cannot reduce below this level you will need to change your electricity supply arrangement with a suitable retailer to a 'large consumer' and will be subject to higher network charges. Contact Council's Sport and Recreation team for more information
 - No - you can retain your existing electricity supply arrangement

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6. CONTRACT INCLUSIONS

- A. Ensure that the following items, at a minimum, are clearly defined and included in the scope of works for contractors to quote, for the organisation to select its preferred contractor, and then for the preferred contractor to undertake the works
- Soil testing and footing design (if not completed earlier)
 - All pole types, height and locations as per the lighting design
 - All light fittings as per the lighting design
 - All required electrical infrastructure (e.g. switchboards, cables, sub-meters, etc.)
 - All switching mechanisms and access to light controls
 - All Energex fees, including supply upgrades and new meters
 - Final certification of footings and poles
 - Removal and disposal of existing lighting infrastructure - consider retaining the existing infrastructure until the new installation is commissioned and achieves required standards
 - Removal and disposal of excess soil or other spoil- these costs can be particularly large at land fill sites
 - Tree trimming and removal of debris, if approved by Council or State Government
 - Rectification of any damage to the playing surface
 - Meeting with Council's sports turf officers, if applicable, prior to commencing the project
 - Instructions and diagrammatic "how to" guide to light switching, to be contained in the switchboard
 - Final commissioning of the lights, including lux plots across the field/s for all lighting levels, and certification by an independent lighting engineer that the installation meets the required Australian Standards or requirements of the sport's governing body
 - Provision of 'as-constructed' documentation
 - Specification of a defects liability period where the contractor will be responsible for replacing faulty components (usually 12 months)
 - Specification of warranties of poles, fixtures and fittings

7. PROJECT MANAGEMENT

- A. Ensure that the following items are undertaken prior to the commencement of the project:
- The preferred timing of the works is identified in conjunction with the contractor, to avoid peak usage periods of the facility. Consider that the rectification of damaged playing surfaces can take eight weeks or more until usage can resume
 - Meet with the contractor and officers from Council's Sport and Recreation and Parks Technical Services teams at least two weeks in advance of the proposed start date to discuss access times, vehicle paths, potential damage to playing surfaces, mechanisms to mitigate field damage, and the control of irrigation for ground stability
 - Photos are taken of the facility in its pre-construction condition, particularly in areas where construction vehicles are likely to access
 - Facility access and site security are confirmed directly with the contractor, including end-of-day procedures

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B. Ensure that the following items are undertaken during and at the conclusion of the project:

- Photos are taken of the ground and areas of work, with references for depth perception such as a ruler or pencil
- Any keys to locks are returned by the contractor
- Any infrastructure removed by the contractor is replaced - e.g. bollards, goal posts
- All 'as constructed' documentation and final certifications (footings, poles, field lighting levels and spill lighting levels) are supplied to Council
- Post construction meeting with contractor and officers from Council's Sport and Recreation and Parks Technical Services teams to assess park surface condition and any required rectification works
- All other items required as part of the contract are fulfilled

8. ASSET AND FINANCIAL MANAGEMENT

A. Is the club aware of its ongoing maintenance responsibilities for the facility?

- Yes - confirm responsibilities under the club's lease and any conditions specified in the land owner's permission letter for the project
- No - responsibilities will be included in the club's lease and any additional conditions specified in the landowner's permission letter for the project

If the club is operating under the conditions of a lease issued in accordance with the MBRC Community Leasing Policy, details on responsibilities can be found at www.moretonbay.qld.gov.au/communityleasing

B. Does the club have an asset management plan in place?

- Yes - add the new lighting to the asset register and specify the maintenance activities required, frequency of maintenance and approximate costs for all elements of the lighting
- No - prepare an asset management plan as per 'Yes' and add any other infrastructure controlled by the club

C. Is the club making regular deposits into a facility sinking fund?

- Yes - ensure that the contributions are increased to accommodate the maintenance and replacement activities identified in the asset management plan
- No - establish a sinking fund and make regular contributions to cover maintenance and replacement of all club assets

D. Is the organisation seeking external funding to undertake the project?

- Yes - provide sufficient lead time for the design to be ready prior to funding submission. Advise any tenderers that there will be delay between quoting and construction due to the funding application timeframes
- No