

To: CORPORATE SERVICES (LICENSING) SUB-COMMITTEE		Subject: SAFETY OF SPORTS GROUNDS CERTIFICATION ARRANGEMENTS - FIR PARK STADIUM, MOTHERWELL
From: HEAD OF BUSINESS FOR LEGAL AND DEMOCRATIC SOLUTIONS		
Date: 4 August 2016	Ref: LD/RM	

## 1. Introduction

- 1.1. The Council has adopted practices in relation to its responsibilities for the certification of "Designated Sports Grounds" in North Lanarkshire and agreed to the establishment of a Safety of Sports Grounds Officer Working Group representing a variety of disciplines which assist the process of certification.
- 1.2. The Council has also agreed that a programme of annual inspections be established and over the past few months, Officers of the Working Group have carried out inspections at Fir Park Stadium, Motherwell, and met with representatives from the Stadium Management to discuss a number of issues relating to the General Safety Certificate for the ground.

## 2. Current Position

As a result of these inspections, a number of issues have been identified as requiring attention, details of which have been passed to the Stadium Manager:

### (a) Reports/Certificates

- The submission of (1) an Annual Structural Inspection Certificate (the Certificate should clearly state which part(s) of the Stadium is/are fit for purpose and, if applicable, which part(s) of the Stadium is/area not fit for purpose); (2) a Certificate of the Risk Assessment and the Stadium's adequacy; (3) a Certificate of Risk Assessment of barriers, claddings and structural elements; (4) an Annual Periodic Electrical Inspection Report, and (5) detailed calculations and drawings for the safe capacity of all parts of the Stadium.
- Confirmation as to whether a structural appraisal has been carried out on the Stadium since 2008 and, if so, provision of detail as to the date of the appraisal. If the Chartered Engineer appointed by the Stadium owners/operators considers that a structural appraisal is not appropriate at this time, the reason(s) why should be clearly stated in the Annual Structural Inspection submission.

### (b) Electrical Installations

- The Council appointed RYBKA, Consultants, in May 2015 to inspect the electrical installations at each of the four stadia in North Lanarkshire.
- Attached, as Appendix 1 to this report, is a report by RYBKA providing commentary on works which had been carried out at the Stadium to the electrical distribution system following on from the RYBKA site inspection in May 2015. Setting out in Section 3 of the report, details of the status of upgrading and repair works which had been recommended for action in 2015.

- Attached as Appendix 2 to this report, is a report by RYBKA providing commentary on works which had been carried out at the Stadium to the existing emergency lighting installations following on from the RYBKA site inspection in May 2015. Setting out in Section 2 of the report, details of the status of upgrading and repair works which had been recommended for action in 2015.

(c) **List of Structural Observations**

- There are areas of flaking paint and corrosion on the steel work forming the roof structure and frame in respect of the West Stand (Main Stand); North Stand, East Stand, and South Stand.
- The brickwork on the boundary wall at the rear of the South Stand is off plumb.
- There are areas of flaking paint and corrosion on the North West, South West and North East floodlights.
- There are three damaged fire protection panels on the structural steel beams in the gymnasium.
- Management, and their appointed Engineering Consultants, are asked to check and ensure that all appropriate Certificates for any structural work or alterations carried out at the facility are in place.

(d) **Building Standards**

- All broken/damaged seating must be identified and a suitable area around it cordoned off until the seating is fixed.

3. **Recommendation**

It is recommended that the Sub-Committee hear verbal updates on any outstanding issues by the appropriate officers and from the Stadium Management at Fir Park Stadium, and consider the renewal of the General Safety Certificate accordingly.



Head of Business for Legal and Democratic Solutions

## NORTH LANARKSHIRE COUNCIL

### CONDITIONING REPORT ON THE ELECTRICAL DISTRIBUTION SYSTEM

#### FIR PARK FOOTBALL STADIUM

##### 1.0 INTRODUCTION

This addendum report has been prepared at the request of North Lanarkshire Council to provide commentary on works carried out at the Fir Park Football Stadium to the electrical distribution system following on from the Rybka 2015 site inspection of May 2015

The information contained within this report has been obtained from the following:

- Undertaking a visual inspection carried out on the visible parts of the electrical distribution system.
- From on-site discussions with the staff
- From reviewing the current electrical 'test' sheets

No electrical tests were undertaken on any electrical cables.

No manually operated isolator switches, MCCB's, MCB's or RCBO's were activated, to prove whether or not they were still operating correctly.

Those parts of the electrical installation which have been built-in, covered up or made inaccessible within the normal course of construction, fitting out or occupation were not inspected. Consequently, liability is not accepted for any faults which may become apparent at a later date due to a concealed defect.

The existing standby generator sets were not tested during our inspection of the electrical distribution system.

Our comments and recommendations on the condition of the electrical distribution system relate to the condition of the existing electrical equipment and cable installations installed and highlights any departures from the current standards & regulations, and does not constitute a check on the performance of the installations currently in use.

The sub-main electrical switchgear located within the West Stand is in poor condition and has reached the end of its operational life. We were advised by the Facilities Manager that this switchgear along with the floodlighting switchgear within the North East corner of the North Stand was due to be replaced this year, once the football season had closed. Due to technical and programme issued Motherwell Football Club could not complete the works in 2015.

**Update, Motherwell Football Club confirmed during the 2016 visit that the switchgear will be replaced at the end of the 2015/2016 Football Season, all equipment has been purchased and an installation programmed has been agreed with their electrical contractor.**

##### 2.0 ELECTRICAL TEST SHEETS, 'O&M' MANUAL AND 'AS FITTED' DRAWINGS

Annual Test:

The annual electrical test should include for the testing of 20% of all sub-mains power cables and the testing of 20% of all outgoing lighting and power circuit cables from each distribution board. Different lighting and power circuits should be tested during the annual testing exercise.

Five Year Test:

The five yearly electrical test should include for a 100% testing of all sub-mains power cables and a 100% testing of all lighting and power circuit cables have been completed over the 5 year period.

The electrical test sheets for the stadium, dated 9<sup>th</sup> July 2014 were inspected and confirmed the following:

- That all final outgoing circuits from all distribution boards and consumer boards have been tested.
- That all sub-mains cables have been tested.
- That a small number of electrical circuits have a higher circuit earth fault value than that permitted by BS.7671 (The IET Wiring Regulations).
- The electrical test results provided comply with the requirements set out within Part 4 : Protection for Safety, and Part 6 : Inspection and Testing, of BS.7671 (IET Wiring Regulations).

The electrical test sheets also contained the following:

- a. A schedule of items on the electrical installation that need to be actioned to maintain the electrical safety of the installation (33No. Items).
- b. A non-specific overview on the condition of the electrical installation highlighting 23No. Items listed that require to be further addressed.

Although there is no set guidelines within BS.7671 or the 'Electricity at Work Regulation 1989' to advise on the extent of electrical testing required or the time periods on when electrical testing should be carried out, it is recognised throughout the electrical industry that, for this particular building, sample testing (in the region of 20%+) should be carried out annually with a 100% electrical testing programme conducted every 5 Years.

There are no 'O&M Manuals' or 'As Fitted' drawings on site containing the details of the electrical installation installed throughout the Football Stadium.

### 3.0 UPDATE OF 2015 RECOMMENDATIONS

From our observations and inspection we noted the following when comparing the installation to the 2015 report;

#### 3.1.1 Recommended Upgrading Works, noted within Appendix 1 sheets

2015 Action	2016 Status	Comment
Provide 'electrical warning' signs on cupboard doors and on electrical distribution boards & consumer boards	Works partially completed	
Provide 'electrical shock' notices.	Works partially completed	
Provide periodic inspection labels	Works partially completed	
Provide rubber floor mats in front of the main electrical switch panel and sub-main switch panels	Works not completed	

#### 3.1.2. Repair Works, noted within Appendix 1 sheets

2015 Action	2016 Status	Comment
Make good the hinges on the front door on Distribution Board 'Catering' (Located within the South Stand).	Works not completed	

3.1.3 We would also recommend that the following 14No. circuits identified within the test sheets as having a higher earth fault value than that permitted by BS,7671 be further investigated and be altered/upgraded, where necessary:

2015 Action	2016 Status	Comment
Main Stand: Millennium Lounge Kitchen Dist. Board 'MSU16' Circuit No. 4, Circuit No. 5	Works not completed	
Main Stand: Kiosk 1, Circuit 12/L1	Works not completed	
South Stand: Dist. Board 'LP6', Circuit 5/L2, Circuit 7/L3, Circuit 11/L3	Works not completed	
South Stand: 'Catering' Dist. Board, Circuit 1/L3, Circuit 2/L1, Circuit 2/L2, Circuit 4/L1	Works not completed	
South Stand: '24 Hour' Dist. Board, Circuit No. 5	Works not completed	
South Stand: Dist. Board 'GH' Circuit 2/L2, Circuit, 3/L1 Circuit 3/L3	Works not completed	

The circuits identified as having the high earth fault reading should be physically checked to ensure that there are no loose cable terminations/connections within the circuit and then be re-tested.

If the test result is still found to be higher than the maximum value permitted then the circuit will need to be upgraded, i.e. by one of the following or all:

- Downsizing the rating of the circuit protective device : This will reduce the electrical load available from the circuit.
- Increasing the size of the circuit conductors : This will result in a re-wire of the circuit.
- Replacing the existing circuit protective device with a 30mA rated RCBO protective device.

3.1.4 We would also recommend that an exercise be undertaken to produce the following:

2015 Action	2016 Status	Comment
An 'Operating and Maintenance' Manual for the electrical distribution system installed within the Football Stadium	Works not completed	
A set of 'As Fitted' drawings recording the location of the electrical switchgear and route of all sub-mains cables installed throughout the Football Stadium	Works not completed	
An accurate wiring schematic for the electrical distribution system installed within the Football Stadium	Works not completed	

### 3.2 Additional Items noted

No new items for electrical distribution were raised as a concern at Fir Park Stadium

## 4.0 SUMMARY

With the exception of the West Stand Sub Main switchgear the electrical installation provided throughout the stadium is considered to be in a reasonable condition with only a few minor elements requiring attention.

The electrical installation will be fully compliant with the current regulations set out within BS.7671 and the 'Electricity at Works Regulations 1989' when the following actions have been completed:

- After undertaking all the recommended upgrading/repair works detailed within this report.
- After undertaking all the recommended upgrading/repair works detailed within the electrical test sheets.
- After undertaking a 100% electrical test on all sub-mains and final circuit cables installed throughout the stadium.

## **NORTH LANARKSHIRE COUNCIL REPORT ON EMERGENCY LIGHTING INSPECTIONS**

### **FIR PARK STADIUM**

#### **1.0 INTRODUCTION**

This addendum report has been prepared at the request of North Lanarkshire Council to provide commentary on works carried out at the Fir Park Football Stadium to the existing emergency lighting installation following on from the Rybka 2015 site inspection of emergency lighting which was carried out to compare compliance to BS EN 50172, BS EN 1838 and BS5266-1 : 2011.

This addendum report is linked to the document; **North Lanarkshire Council Safety at Sports Ground Annual Inspection 2016.**

The follow up site inspection visit was carried out on the 3<sup>rd</sup> of May 2016.

The information contained within this report has been obtained from our on-site discussion with the staff, from reviewing the current Emergency Lighting Certificates and from our inspection carried out on the visible parts of the emergency lighting installation.

No physical light meter measurements were taken.

Where practical, the emergency lighting system was operated to view the coverage and general effectiveness of the system.

We did not inspect those parts of the installation which were built-in, covered up or made inaccessible within the normal course of construction, fitting out or occupation. Consequently, liability is not accepted for any faults which may become apparent at a later date due to a concealed defect.

Our comments and recommendations on the emergency lighting installation relates to the condition of the existing emergency lighting installation installed and highlights any departures from the current standards & regulations, and does not constitute a check on the performance of the installations currently in use.

This addendum report should be read in conjunction with the Rybka document;  
**'Report on Emergency Lighting Inspection, Fir Park Stadium' Dated 8<sup>th</sup> April 2015.**

#### **2.2 TEST CERTIFICATE, LOG BOOK, O&M MANUAL AND 'AS FITTED' DRAWINGS**

A copy of the emergency lighting 'Test Certificate' and 'Service Log Book' are on site and are up-to-date. The emergency lighting 'test certificate' expires on the 31<sup>st</sup> August 2016. The log book records the weekly test dates.

There are no 'O&M Manuals', 'As Fitted' drawings or wiring schematics for the emergency lighting installation provided throughout the stadium.

#### **2.3 SUMMARY**

The inspection of the emergency lighting system installed throughout the stadium identified that it was not fully compliant with BS.5266-1 and could not prove whether or not it was fully compliant with BS EN 1838.

To ensure that the emergency lighting system installed throughout the stadium is fully compliant with BS.5266-1 and BS EN 1838 the following actions need to be carried out by the end user:

2.3.1 Undertake the 'Essential Upgrading Works' detailed within Clause 2.4.1.

2.3.2 Undertake the 'Repair Works' detailed within Clause 2.4.3.

2.3.3 Verify (by submitting a statement) whether or not the emergency lighting system fed by the standby generator set is fully compliant with the following Clauses contained within BS 5266-1:

a. Clause 6.1 : System Integrity

This clause explains that the emergency luminaires within an area needs to be illuminated on loss of the electrical supply to the local lighting circuit.

The operation of the standby generator set needs to be tested to prove that the generator set switches 'on' following the loss of an electrical supply serving a local 'back-up' lighting circuit.

We noted that the Static Inverters are connected to the emergency power system.

b. Clause 8.2.6 : Segregation

This clause explains the requirement 'that the wiring of emergency escape lighting installations is exclusive to the installation and separate from the wiring of any other circuits.....'.

We noted that the Static Inverters are wired as standalone circuits.

2.3.4 Verify (by submitting a statement/test certificate) whether or not the emergency lighting system provided is fully compliant with Clause 4.2.6 as contained within BS EN 1838, which states:

'Following the loss of the normal electrical supply within an escape route 'the emergency escape route lighting shall reach 50% of the required illuminance level within 5 seconds and full illuminance within 60 seconds'.

The operation of the 'back-up' luminaires need to be tested to prove that the generator set illuminates the 'back-up' luminaires to 50% illumination within the 5 second window.

Stadium Staff confirmed verbally that the generator start up time does allow the lighting to comply with BS EN 1838, the generators were not tested at the time of the visit.

## 2.3 UPDATE OF 2015 RECCOMENDATIONS

From our observations and inspection we would recommend that the following upgrading and repair works be carried out:

### 2.3.1 Essential Works

Provide stand-alone, self-contained, emergency luminaires within the following areas:

2015 Action	2016 Status	Comment
North Stand, within the Toilet Areas.	Works completed	
West Stand, within the stairwell leading into the Joe Wark Lounge.	Works completed	
West Stand, within the Joe Wark Lounge.	Works completed	
West Stand, within the Function Suite (Above the steps).	Works completed	

### 2.3.2 Recommended Works

a. Provide additional stand-alone, self-contained, emergency luminaires within the following areas:

2015 Action	2016 Status	Comment
North Stand, Kiosk 7, within the Staff Server Area	Works completed	
North Stand, Kiosk 8, within the Staff Server Area	Works completed	
South Stand, Gymnasium Areas	Works not completed	Refer to additional items noted.
South Stand, Hospitality Area	Works not completed	Refer to additional items noted.
South Stand, Public Breakout Areas	Works completed	
East Stand, above and outside the South Exit from the Stand	Works not completed	
East Stand, along the TV Gantry		
West Stand, within the Main Kitchen	Works not completed	
West Stand, in the Toilet Area within the Visitors Changing Area	Works not completed	

b. Provide additional 'Exit' luminaires within the following areas:

2015 Action	2016 Status	Comment
North Stand, Kiosk 7, above the external door within the Back Store Room	Works not completed	
North Stand, Kiosk 8, above the external door within the Back Store Room	Works not completed	
North Stand, Disabled Toilet	Works not completed	
North Stand, Electrical Switchroom	Works not completed	

West Stand, above the exit door within the Washing Room	Works not completed	
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c. Undertake an exercise to produce the following:

An 'Operating and Maintenance' Manual for the emergency luminaires and the emergency lighting system installed	Works not completed	
A set of 'As Fitted' drawings recording the location and type of all emergency luminaires installed throughout the Stadium	Works not completed	
A wiring schematic for the emergency lighting system installed	Works not completed	

## 2.4 ADDITIONAL ITEMS NOTED

### South Stand

The South Stand emergency lighting has been modified to operate from a static inverter system which is generator backed. Where we observed that emergency lights did not operate on the static system when put under test conditions we noted that multiple circuits still had key switches within the circuit.

We suspect that key switches may be holding emergency lighting off when it should energise rather than lighting being missing or not working. This issue needs to be checked and traced by a qualified electrician to confirm the status of emergency lighting circuits.

Areas where emergency lighting was not operating in the South Stand include;

- Gymnasium main area
- Gymnasium access stairs

Other items within the South Stand;

The suites have emergency lighting to the upper levels, however the viewing decks which have changes of level within the viewing areas do not have emergency lighting including Andrew Paton suite, Wilson Humphries Suite, Andrew Weir Suite and the Martis Suite.

### East Stand

The East stand has self-contained emergency lighting with twin spot light fittings to each stair core between seats with emergency exit signage at the bottom of the stairs. This lighting was switched during our visit and observed to be operational. We noted however that the upper concourse level of the East stand has exit routes at both ends which are labelled as emergency escape routes but do not have appropriate emergency lighting as escape routes. The exit strategy needs to be conformed to check of additional emergency lighting is required for the upper concourse in the East Stand.

### North Stand

One of the hanging Exit signs hangs in front of an emergency light, readjustment is recommended.