

STAGE 1 ROAD SAFETY AUDIT REPORT FOR 111644: FOOTBALL STADIUM AND TRAINING FACILITIES AT KINGSFORD, ABERDEEN



Report Ref 40817(1) Rev C

Issue Date 20-Jun-17

111644: Football Stadium & Training Facilities, Kingsford, Aberdeen.
Road Safety Audit Stage 1

CONTENTS

1. INTRODUCTION.....	2
2. SCHEME DETAILS.....	3
3. PROCEDURE	5
4. ITEMS RAISED IN PREVIOUS ROAD SAFETY AUDITS.....	7
5. IDENTIFIED PROBLEMS.....	8
General.....	8
Local Alignment.....	8
Junctions.....	9
Non Motorised User Provision.....	10
Road Signs, Carriageway Markings and Lighting.....	11
6. AUDIT TEAM STATEMENT	12
Appendix A. Location Plan of Problems	13
Appendix B. Location of Recorded Collisions.....	15

Issue / Revision	Issue 1	Revision A	Revision B	Revision C
Remarks / Status	Final	Para 2.1 , 3.5	Drg & problem update	Drg 111644/fig7001
Prepared by				
Signature				
Checked by				
Signature				
Issued by				
Signature				
Report No	10017(1)	10017(1) rev A	10017(1) rev B	10017(1) rev C
Date Issued	14/03/2017	10/04/2017	03/05/17	20/06/2017

111644: Football Stadium & Training Facilities, Kingsford, Aberdeen.
Road Safety Audit Stage 1

1. INTRODUCTION.

1.1. The objective of a Road Safety Audit is to identify any aspects of a road design or construction scheme that gives rise to road safety concerns and, where possible, to suggest modifications that would improve the road safety of the resultant scheme. This report results from a Stage 1 Road Safety Audit carried out on Aberdeen Football Club's (AFC) proposed stadium and training facilities at Kingsford, Aberdeen. The Audit was requested by Fairhurst and was carried out by Wyllie Lodge Ltd, Independent Road Safety Consultants.

1.2. The Audit Team members were;

Audit Team Leader [REDACTED], I Eng, MCIHT, MSoRSA

Audit Team Member [REDACTED], BSc, MSc, CMILT, MCIHT.

2. SCHEME DETAILS.

2.1 The development consists of the construction of;

- a 20,000 seated football stadium,
- 3 training pitches,
- a football academy with pavilion,
- 2 synthetic training pitches,
- cycle parking for 220 cycles,
- coach parking for 93 coaches,
- shuttle bus drop-off and waiting facilities and,
- 4 car parks with around 1350 spaces.

The development is to be located on a green-field site at Kingsford Aberdeen. The site is to the immediate north of the A944 and between Kingsford and the Aberdeen Western Peripheral Route (AWPR) Kingswell south junction, which is currently under construction.

The A944 at this location is a 40mph dual carriageway and access to the site will, in the main, be via a priority T-junction with part-time traffic lights. On non-match days the traffic lights will be off and the junction will operate by way of Give Way markings allowing left in and left out manoeuvres only. On match days the junction will operate under traffic light control and will allow left and right turn entry manoeuvres, and left turn exit manoeuvres. Additionally on match days only two further accesses will be used. One to the east of the site for a fleet of shuttle buses and, one to the west of the site for coach parking and some car parking.

It is proposed to construct the development in two phases. Phase 1 being the 3 training pitches, football academy with pavilion, and 2 synthetic training pitches and Phase 2 being the stadium and associated parking.

The development will also require the widening of the A944 eastbound approach to the AWPR Kingswell South interchange, where the two lane approach will be widened to a 3 lane approach. The A96 northbound off ramp will require the length of two lane approach to be slightly increased and part time traffic control is required on the interchange at match times.

111644: Football Stadium & Training Facilities, Kingsford, Aberdeen.
Road Safety Audit Stage 1

2.2 The information made available for the audit is listed below;

Report Ref	Title
111644/TA01 January 2017	Aberdeen Football Club Proposed Stadium and Training Facilities at Kingsford, Aberdeen – Transport Assessment
Drawing Ref	Title
HFM. 10422-P(90)003 Rev C	Proposed Site Layout
HFM. 10422-P(90)004	Phase 1 Proposed Site Layout
111644/sk007/A	Additional Development Access
111644/sk0018/C	Site Access proposals
111644/sk0019/-	Main Access Road Junction with A944. Non-Match Days
111644/sk0022/-	Existing footway / cycleway along A944 west of site mitigation layout for 3m wide route.
Fig 10.1	5 years Road Crash Map of A944 Road Section Between Kingswell Roundabout and Arnhall Roundabout
111644/sk8005/D	AFC Football Stadium 1600m Catchment.
111644/sk8010/B	Stagecoach Service X17 Alternative Route
111644/sk8011/-	Emergency Vehicles Route
111644/sk8013/-	Pedestrian Infrastructure to Arnhall
111644/fig7001/ A	AWPR Kingswell South Junction Potential Improvements

2.3 Road traffic collision information has also been retrieved from Crashmap.co.uk . It should be noted that the A944 and B9119 junction has changed from a roundabout to a signalised junction during the period of the collision search, and the AWPR Kingswell south junction is under construction to the east of the site.

3. PROCEDURE

- 3.1. The audit was carried out generally in accordance with procedures set out in HD 19/15 of the Design Manual for Roads and Bridges (DMRB). The Road Safety Audit procedure is not an examination or verification of compliance to a design standard. The audit team has not been informed of any departures from standard. The recommendations in this report are considered by the audit team to be appropriate and proportionate to the concerns and problems identified.
- 3.2. The audit was carried out between 2nd March and 20th June 2017 at the offices of Wyllie Lodge and on site. A daytime site visit was carried out by both audit team members between 12:30 and 14:00hrs on Thursday, 2 March 2017.
- 3.3. During the site visit traffic flows were moderate and flowed without interruption. The weather was cold and sunny and the road surface was dry.
- 3.4. In accordance with HD 19/15 the Project Sponsor should consider the recommendations contained within this audit. In doing so, the Project Sponsor may consult with the Design Team. If any item is considered insignificant, irrelevant or impractical the Project Sponsor shall prepare an Exception Report for consideration and a final decision by the Director. The Project Sponsor should then issue all approved Exception Reports along with any agreed alternative to the Design Team and copied to the Audit Team.

111644: Football Stadium & Training Facilities, Kingsford, Aberdeen.
Road Safety Audit Stage 1

3.5. For the purposes of this audit the following are defined as:

Organisation	Contact
Overseeing Organisation	Aberdeen City Council
Director	Head of Infrastructure Aberdeen City Council
Project Sponsor	Aberdeen Football Club PLC
Design Organisation	Fairhurst
Road Safety Audit Organisation	Wyllie Lodge Limited.

111644: Football Stadium & Training Facilities, Kingsford, Aberdeen.
Road Safety Audit Stage 1

4. ITEMS RAISED IN PREVIOUS ROAD SAFETY AUDITS.

- 4.1. No previous road safety audit has been carried out for this development.

5. IDENTIFIED PROBLEMS

General.¹

No problem identified

Local Alignment.

No problem identified.

¹ DMRB HD19/15 standard list

Junctions.

5.1 PROBLEM

Location A944 Main Entrance and approaches.

Summary Risk of serious side impact collision.

The activation of the part-time traffic signals at the stadium and the deployment of temporary traffic management measures on match days will require bollards to be removed from the central reservation, and signs altered in the central reservation and verges on both A944 approaches.

Manually carrying out these tasks requires workers to cross the A944 and work within the central reservation. This exposes them to the risks of being struck by a vehicle.

The continual installation and removal of temporary bollards will no doubt lead to excessive wear of the bollards and likely loss or misplacement of them. Through time it should be anticipated that some bollards will get broken or lost and the gap in the central reservation will not be securely closed during non-match days. The recommended route for westbound traffic to enter the site on non-match days is to drive past the site, through the signalised A944/B9119 junction and carry out a U-turn at the Arnhall roundabout, then back through the signalised junction before turning left into the site. An opened central reservation gap at the main entrance will tempt some drivers to avoid the recommended route and turn right through the gap and across the eastbound traffic flow. This will increase the possibility of a serious side impact collision with eastbound traffic who will not be expecting traffic to turn across their path.

Recommendation

It is recommended that;

1. The bollards or barriers that close the central reservation gap are of a type that can be activated by a remote electronic switch, thereby removing the risk associated with having workers and vehicles in the central reservation.
2. That the advance signs that warn of when the traffic signals are operating and of the temporary lane destination are of an electronic type that can be operated remotely.

Non Motorised User Provision.

5.2 PROBLEM

Location A944 and west entrance.

Summary Risk of pedestrian injury collisions.

Arnhall Business Park can provide car parking spaces during match days as well as bus stops for public bus services. Drawing 111644/sk8013 also shows a length of Venture Drive being used for as a Taxi drop-off and pick-up area. This has the potential to generate over 1800 pedestrians walking eastwards from the business park to the stadium, and returning after the game. Pedestrians will want to take the most direct path, which is likely to be from Venture Road and along the A944 dual carriageway to a crossing point near the stadium. Guardrail will contain the pedestrians to the footway. Drawing No 111644/sk8013 shows a demountable length of pedestrian guardrail opposite the entrance to the stadium. Further east there is a controlled Toucan crossing facility within the signalised A944 / B9119 junction.

It is proposed that when pedestrian flows are highest during match days the demountable barrier is removed to allow pedestrians to cross the A944 towards the stadium. This will create an uncontrolled crossing of a 40mph dual carriageway.

The uncontrolled crossing of the A944 dual carriageway by large numbers of pedestrians will present a risk of pedestrian and vehicle collisions. Pedestrians stepping out into the path of approaching vehicle will lead to sudden braking and shunt type collisions which may result in pedestrian injuries.

Recommendation

It is recommended that;

1. The preferred pedestrian route from Arnhall Business Park to the stadium is from Venture Road, along the south footway of the A944 to the controlled Toucan crossing at the signalised junction of the A944 and B9119.
2. Only when pedestrian flows are likely to exceed the capacity of the Toucan crossing should the demountable barriers be removed and the uncontrolled crossing activated. The operation of the uncontrolled crossing will require the assistance of the match day Police who will have powers to stop traffic. A

operational procedures plan must to be put in place which includes a risk assessment and training of stewards.

Road Signs, Carriageway Markings and Lighting.

5.3 PROBLEM

Location A944 near east access.

Summary Risk of vehicle strike with redundant roadside furniture.

Near the east access there are existing signs that warn of cattle crossing. As the field to the north of these signs is to be developed there may no longer be a need for cattle to cross the A944. Redundant signs are an unnecessary distraction to drivers as well as being a roadside hazard that any errant vehicle could hit.

Recommendation

It is recommended that all redundant signs are removed.

5.4 PROBLEM

Location A944 eastbound approach to AWPR Kingswell South junction.

Summary Risk of side swipe collisions due to late lane changing.

During periods of traffic queuing the road markings will be obscured by queuing vehicles and drivers will have inadequate advance notification of the lane destinations. This will result in late or sudden lane changing manoeuvres which can contribute to low speed side impact or shunt type collisions.

Recommendation

It is recommended that the advance direction signs are altered to reflect the 3 lane approach and their destinations.

6. AUDIT TEAM STATEMENT

AUDIT TEAM STATEMENT

FOOTBALL STADIUM & TRAINING FACILITIES, KINGSFORD, ABERDEEN
SAFETY AUDIT STAGE 1

We certify that we have examined the works listed in this report. The examination has been carried out with the sole purpose of identifying any features of design or construction that can be modified in order to improve the safety of the scheme. The problems identified have been noted in this report together with recommendations, which should be studied for implementation.

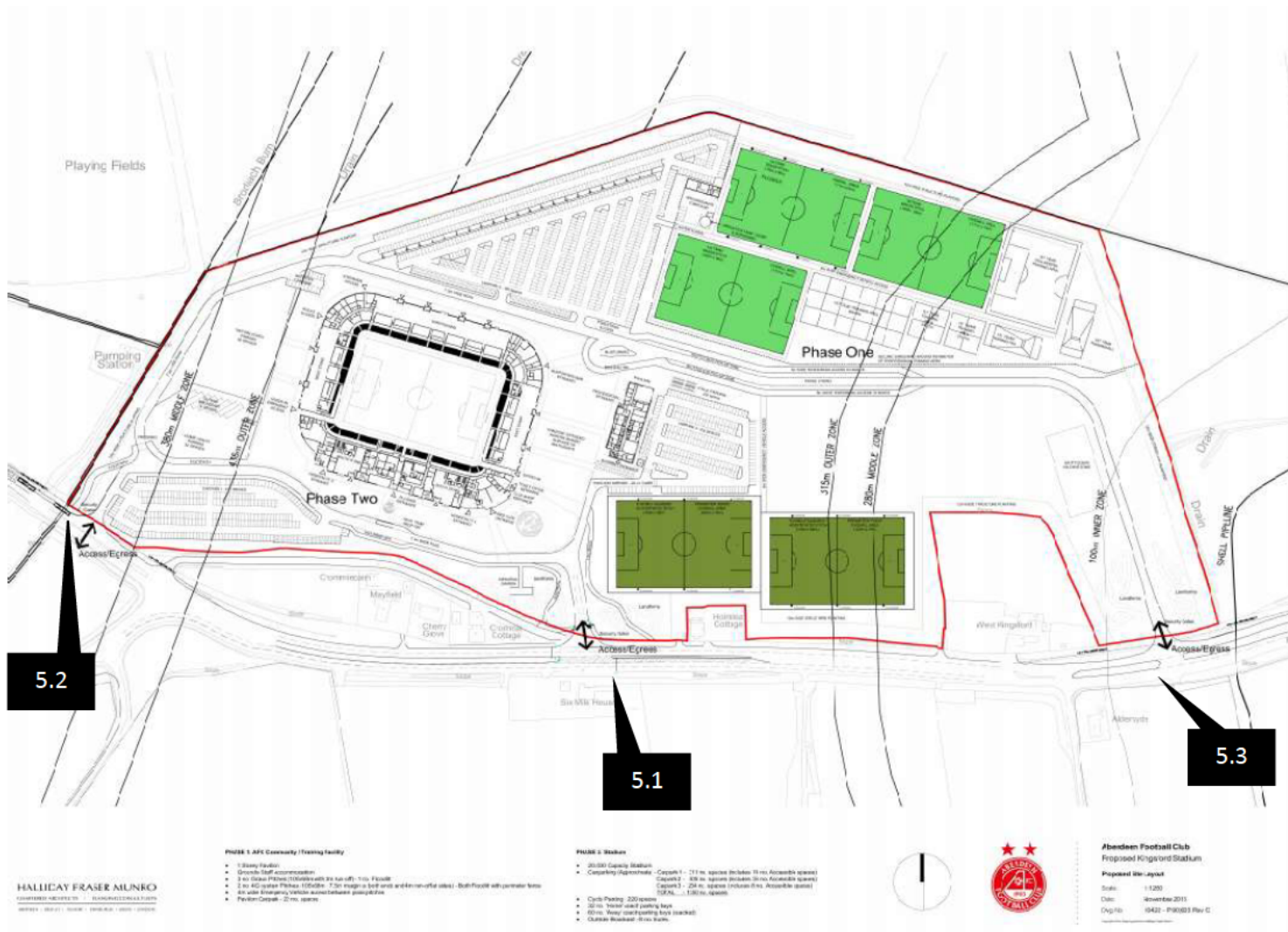
We certify that this Road Safety Audit has been carried out in accordance with HD 19/15.

Signed..... [Redacted]Audit Team Leader Date 20 June 2017.
[Redacted] T Eng, MCIHT, MSoRSA

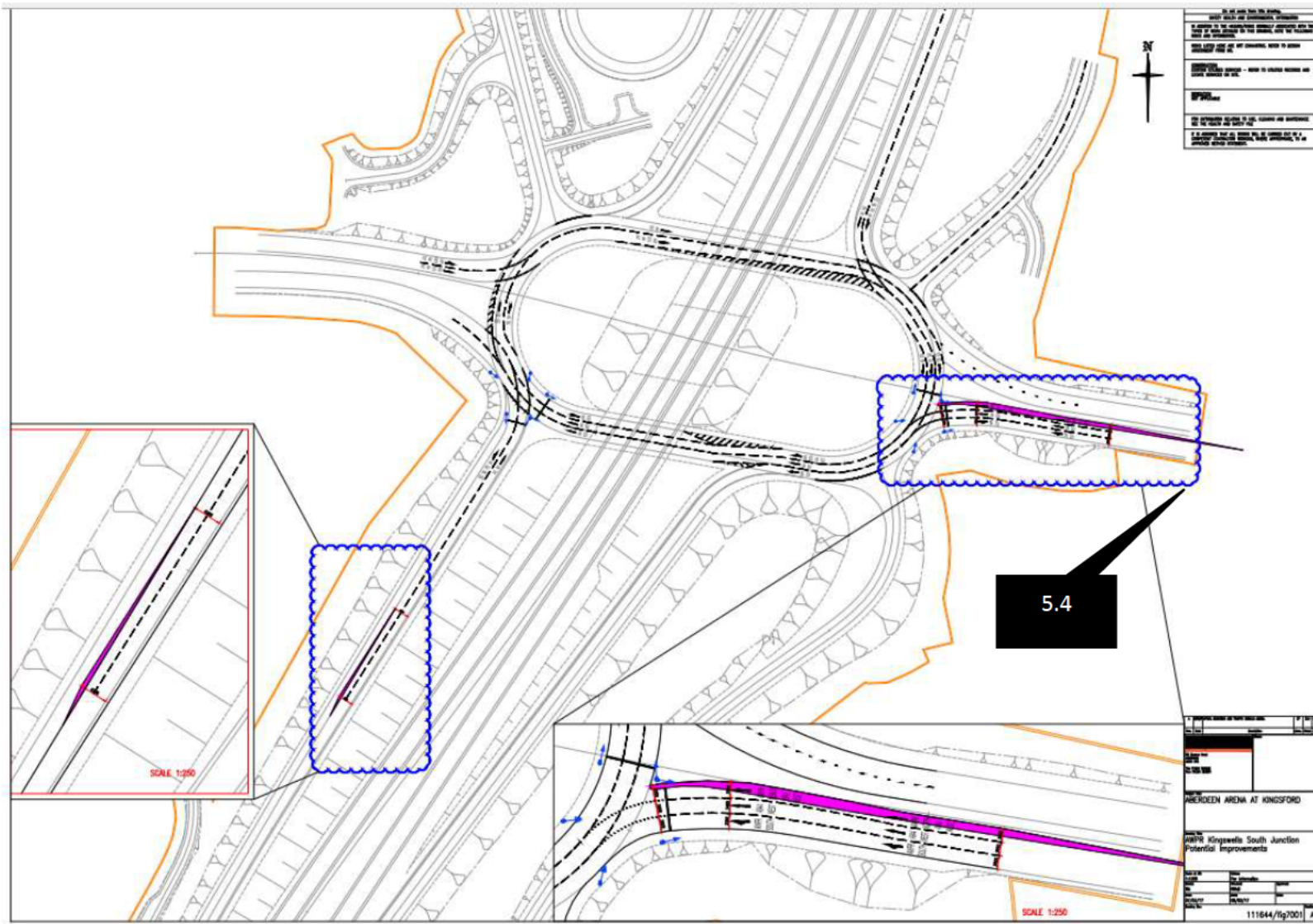
Signed..... [Redacted]Audit Team Member Date 20 June 2017.
[Redacted], BSc, MSc, CMILT, MCIHT.

Wyllie Lodge Road Safety Consultants		T 08450 944512
[Redacted]	[Redacted]@wyllielodge.co.uk	[Redacted]
[Redacted]	[Redacted]@wyllielodge.co.uk	[Redacted]
WYLLIE LODGE Limited. 8 St Andrew's Street Ayr KA7 3AH.		

Appendix A. Location Plan of Problems



111644: Football Stadium & Training Facilities, Kingsford, Aberdeen.
Road Safety Audit Stage 1



111644: Football Stadium & Training Facilities, Kingsford, Aberdeen.
Road Safety Audit Stage 1

Appendix B. Location of Recorded Collisions.

