

Services and Support Facilities

Introduction

This Data Sheet deals with services and a range of important features of the ground that are ‘ancillary’ to the main facilities which consist of the pitch and provision for players and spectators.

Most but not all of these support facilities are eligible for consideration for FSIF funding, as set out in the Fund’s guidance notes. Standards that are required by your particular league or higher level must be checked and agreed to ensure current standards are met.

As explained in Data Sheet 1, some of these facilities (e.g. toilets, or control rooms) receive very detailed treatment in the Guide to Safety at Sports Grounds (the ‘Green Guide’) and will also require the necessary statutory approvals.

Where support facilities will be used by people with disabilities, the design and access issues are covered in Data Sheets 3 and 4.

Services

Data Sheet 1 ‘Planning an Improvement Project’ identifies the need to have and maintain information on your existing services. This is a necessary requirement for good management and for any facility development that your club is planning. The Guide to Safety at Sports Grounds lays out in detail management responsibilities and related legislation. The safety plan at your ground will require details of services and equipment.

Accurate plans, records and manuals should provide the location, depth, loading and capacity of your services that include:

- water
- gas
- electricity
- communication systems
- fire detection systems
- soil and surface water systems
- ventilation
- air conditioning
- smoke control systems.

Your development and improvements may be possible using your existing services but longer-term developments and league requirements may require substantial upgrading and capability.



Lighting

Late afternoon or nighttime usage will require lighting to

- circulation routes, passageways and escape routes
- floodlighting to the pitch for matches and the standards required for television cameras (*see data sheet 6*)
- illumination of signs, alarm call points and fire fighting equipment
- emergency lighting and stand-by power.

Statutory approval of your installations and standards will be part of a necessary process carried out by the relevant authority.

Closed circuit television systems (CCTV) can be used in two ways: for crowd control and information such as scoreboards and, although expensive and different in technology, colour video displays.

Public Address (PA) / Voice Alarm (VA)

PA and VA installations are a vital and necessary provision at football clubs and should always be designed and installed by competent specialist professionals and contractors. This applies to upgrading improved or new systems. Depending upon the scale and extent, successful implementation and usage will involve management, architect, fire engineering consultant, mechanical and electrical engineer, electro-acoustic consultant, manufacturer and installer. Statutory approvals will include Building Control and Fire Authority and will form part of the football club's safety plan.

If your application to the FSIF includes this type of work then it will be necessary to demonstrate that your proposals provide clear information that includes:

- Professional team and their responsibilities
- Specifications and standards
- Costs, procurement and contracts.

Standards and Performance

While there are many British and International standards that can be called up in a Public Address/Voice Alarm (PA/VA) system specification, the following provide a very good indication of the requirements: BS5839 Part 1: 2002 'Fire detection and alarm systems for buildings Part 1'. Code of practice for

system design, installation and servicing', BS5839: Part 8: 1998 'Fire detection and alarm systems for buildings Part 8. Code of practice for the design, installation and servicing of voice alarm systems', BS7827: 1996 'Code of practice for designing, specifying, maintaining and operating emergency sound systems at sports venues' and BS EN 60849: 1998 'Sound systems for emergency purposes'.

As the system forms part of the fire warning system it must have:

- Adequate speech intelligibility over the whole coverage area
- Automatic status indication
- Automatic fault monitoring (including software-controlled equipment) an interface with the emergency detection system (fire alarm, etc)
- Secondary power supply
- Pre-announcement 'attention-getting' signals
- Emergency announcement priority
- System integrity in the presence of loudspeaker line faults
- System integrity in the presence of power amplifier failure
- Zoning of the loudspeaker circuits
- Appropriate loudspeakers
- Fail-safe ambient noise sensing
- Appropriate microphones
- Reliable and high integrity emergency message generators
- Appropriate and suitably accessible control equipment.

PA/VA systems should be intelligible, audible and free from distortion. Speech intelligibility is the most integral part of the system. A PA/VA system with poor intelligibility is worse than no system at all. Intelligibility is not the same thing as audibility. To be intelligible, an audio signal must be heard without undue distortion (amplitude or frequency) and in the absence of excessive noise or reverberation. Incorrectly positioned or specified loudspeakers, highly reverberant spaces, inadequately specified or badly adjusted signal processing and amplification equipment, can all contribute to the degradation of intelligibility. Acoustic design to predict intelligibility is a highly specialised area of expertise and an electro-acoustic consultant will provide this advice.

Even in grounds with home and away segregation, it is preferable at Conference level or below for announcements to be made to the whole ground rather than to one zone as spectators in one part of the ground may think they have missed an announcement.

It is recommended that the general public announcer should not be stationed within the control room (if any) though it is valuable for both functions to be in contact with each other, e.g. by telephone or through sliding glass.

The announcer and fire officer should be familiar with the layout of the control panel/microphone, the layout of the ground and with the evacuation procedures.

The recommended period between successive maintenance should not exceed six months. Completed projects must ensure that 'as built' or installed equipment and systems are handed over and that relevant staff are carefully trained.

Toilets

Calculating Demand

One of the most long-standing complaints about football grounds is about the inadequate number and the poor standard of toilets, and these criticisms were voiced publicly in Lord Justice Taylor's report following the Hillsborough disaster.

There have been improvements since that time, but standards are still uneven. Most spectators (men or women, young or old) wish to be confident that a toilet is within reach, that if there are queues they will not be prolonged so that fans will not miss any of the game, and that the toilet will be sensibly designed and will be clean.

Given the distinctive pattern of football matches – with a gradual build-up of spectators before the game, a very concentrated period at half time and gradual dispersal at full time – the provision of toilets will involve compromises that require some peak time queuing. But it is in a club's own interest to keep queuing to a minimum. Not only does it discourage people (especially women) from attending matches but also fans who are queuing are not spending money on refreshments.

The most demanding but probably the most important point to establish is the male to female ratio of toilets needed, and to do this it is necessary to calculate the ratio of male to female spectators.

Although research has been published on attendance at Premier and Football League matches, this ratio will vary from club to club and between home and away so it is advisable to make the calculation for your own particular ground.

This will involve using lists of club members, family members and season ticket holders, supplemented by occasional head counts by stewards or club volunteers.

Calculating demand will also involve recognition that female spectators take approximately twice as long as males to use a toilet, so in order to provide equal provision for both sexes it is necessary to install twice as many female toilets for a given number of spectators.

The number of female spectators is rising, so if a club has established (for example) that the male/female ratio is 90:10 it may be wise to provide toilets on the basis of an 80:20 or even a 75:25 ratio.

British Standard 6465 (Part 1 1994 and Part 2 1996) makes recommendations for the number of toilets to be provided at places of public entertainment including cinemas, concert halls and sports venues but there are a number of reasons why these do not apply particularly well to soccer grounds. These reasons include:

- most spectators are in the open air, often at low temperatures
- peak usage is at half time
- most spectators are men
- many fans meet in the pub before the game starts.

	Urinals	WCs	Wash Hand Basins
Men	1 per 70 males	1 for every 600 males, but min. of 2 per toilet area	1 per 300 males, but min. of 2 per toilet area
Women		1 for every 35 females, but min. of 2 per toilet area	1 per 70 females, but min. of 2 per toilet area

Table 1

Capacity of Stand Or Area	Type of Provision	Male:Female 90:10	Male:Female 80:20	Male:Female 75:25
500	Male urinals	7	6	6
	Male WCs	2	2	2
	Male whbs	2	2	2
	Female WCs	2	3	4
	Female whbs	2	2	2
1000	Male urinals	13	12	11
	Male WCs	2	2	2
	Male whbs	3	3	3
	Female WCs	3	6	8
	Female whbs	2	3	4

Table 2

As a result, specific (minimum) recommendations have been made for football stadia by the former Football Stadia Advisory Design Council. These are set out in Table 1.

These recommendations are based on a higher provision of urinals in the men's toilet areas but a lower provision of WCs and wash hand basins than the British Standard.

Table 2 shows how these recommendations translate into an allocation of toilets in a ground, but it is important to realise that this allocation relates not to the capacity of the ground overall but to a specific stand or spectator area of the ground, especially if there is home/away segregation. Stand capacities of 500 and 1000 are shown in this table, and larger capacities of e.g. 2000 and 3000 are calculated on a pro rata basis. Refer to Data Sheet 3 for guidance and standards for disabled spectators.

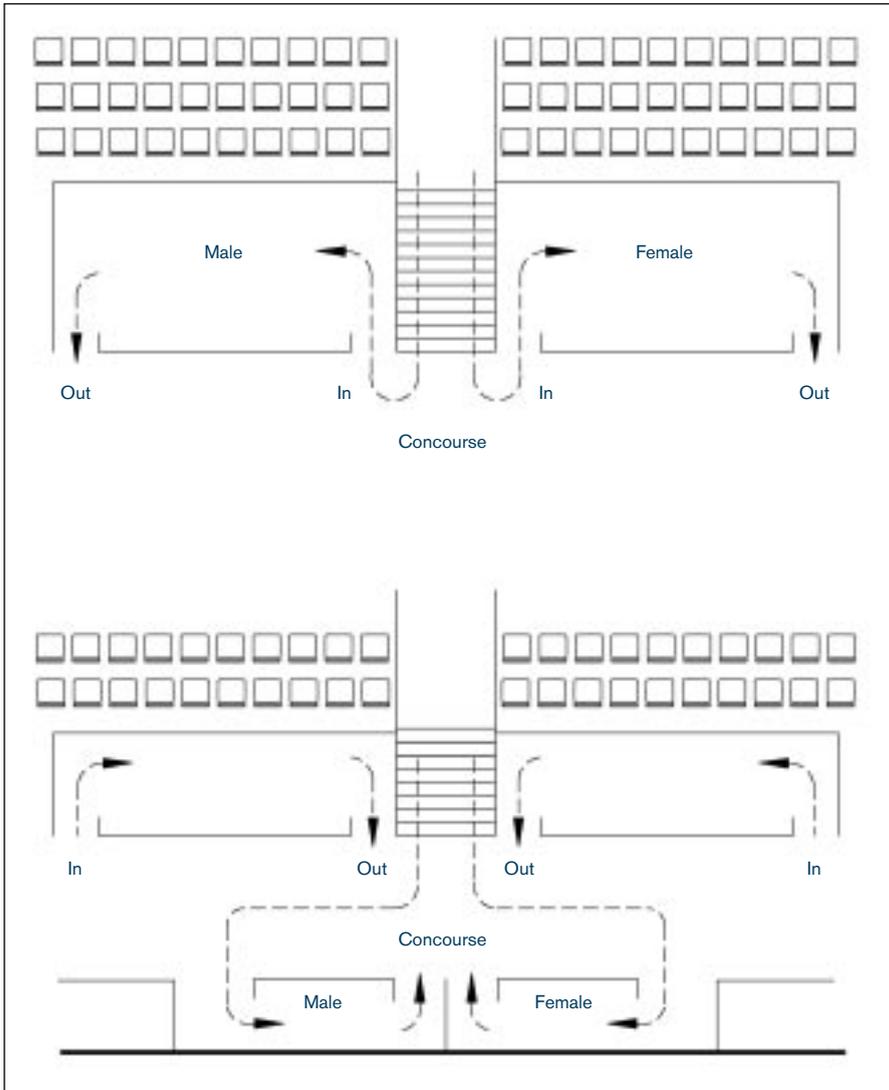


Diagram 1: Location and circulation in concourse areas

Location

The positioning of toilets should be based on the following principles.

- Where grounds are segregated, there should be no need for any spectator to pass through segregation barriers to reach a toilet.
- It is better, where possible, to provide many smaller toilets – evenly distributed throughout the ground – than one large one.
- Toilets can often be provided in the ‘undercroft’ or dead space beneath a bank of seating, but if this is done the toilet entrances must not be placed where queues waiting to enter the toilet obstruct the safe exit of spectators from the ‘vomitories’; this is the technical name given to exits (usually leading to stairs) from spectator seating. Careful placing of the entrances and exits to the toilets can help to avoid this hazard.

Management Policy

There is no point in investing in good quality and well-equipped toilets if the management policies of the club – including cleaning, maintenance and monitoring – are inadequate. The following management arrangements should help to ensure that the toilet areas are clean and usable at all times.

An individual member of staff should have constant overall responsibility for checking the toilets; seeing that there is soap and toilet paper and that there is a general sense of order.

This checking process should be carried out before the pre-match rush, before half time and before full time.

A director or club manager should visit the spectators’ toilets on match days to see that they are in good order.

Club members and supporters should be asked their opinion of the toilets (and of course other features of the ground which affect them) from time to time.

If the ground will be hosting events other than football, a higher proportion of female toilets may be needed, if necessary by providing temporary toilets.

It should be clear whose responsibility it is to deal with a plumbing emergency on match days.

There should be a simple procedure for reporting faults with the toilets on match days, and for ensuring speedy repairs.

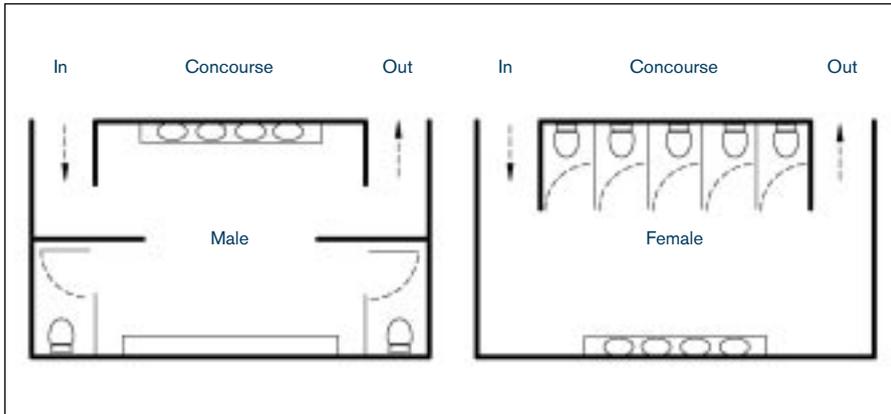


Diagram 2: Toilet layouts

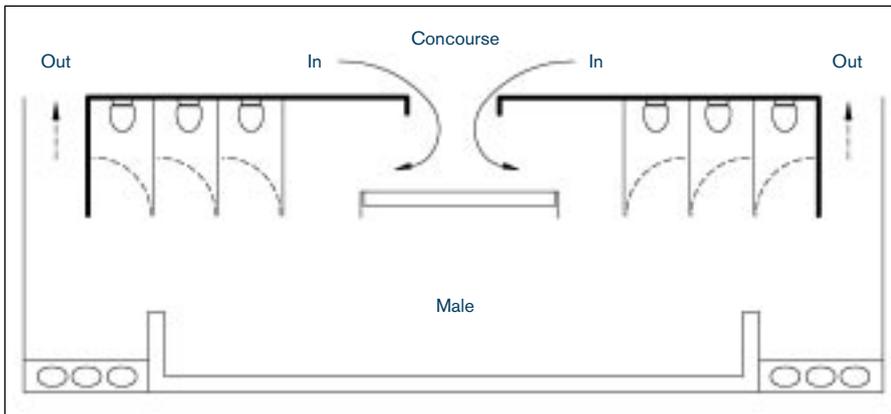


Diagram 3: Detail of toilet on concourse

The Design of Toilets

Because of the pressure of numbers at half time special attention should be paid to the 'traffic flow' of users and numbers of spectators. Wherever possible separate entrances and exits should be provided to minimise congestion. Each entrance or exit should be a minimum of 1.1m wide and preferably 1.2m.

Experience suggests that for sizeable grounds where the ground is secure and where there are large numbers of users the use of doors should be avoided: they will usually be kept open in any case during matches, and the use of door surfaces or door handles conveys infection. If doors are provided they should have secure fixings for the open position.

In the absence of doors, the placement of modesty screens will ensure privacy. Diagram 2 shows typical layouts for male and female toilets with one entrance and one exit point. No doors are fitted and modesty screens may not be needed in the female toilet owing to the location of the WC cubicles, though the mirrors should be carefully positioned to avoid compromising privacy.

Diagram 3 shows a larger (male) toilet layout, which again has no doors, but where a central wall or panel serves the function of a modesty screen. There is one wide entrance and two exits. Hand drying facilities can be provided on each end wall.

Where slab or trough urinals are installed in male toilets (see below), designers should allow a width of 600mm per person.

All surfaces in a toilet area should be able to be cleaned easily: floors should be hardwearing, non-slip, impervious and capable of being washed down easily, e.g. by including floor gullies.

Experience shows that poorly lit toilets are more likely to be damaged or mistreated so lighting should be bright (100 lux or higher) but with no lighting controls accessible to the public.

The use of packs of interleaved toilet paper sheets will avoid the risk of toilet rolls being thrown onto the pitch.

Care should be taken in positioning the hand drying equipment (roller towels, hot air or paper towels) so that they are part of the 'flow' of movement and do not cause congestion.

Sanitary equipment should obviously be robust and vandal-resistant in public areas, though it is often better to upgrade the lighting and the stewarding regime rather than to install the most bleak and unattractive vandal-proof equipment.

Of the three most widely used materials for sanitary appliances, stainless steel is commonly used for trough urinals and wash hand basins owing to its strength and shiny finish. Despite its name however it gradually becomes streaked and still has to be cleaned.

Enamelled fireclay is often used for slab urinals and WC pans. It is heavy, and is more expensive, but it is tough and easy to clean.

Vitreous china is used for individual WC pans and wash hand basins but it is more suitable for female toilets or for club bars and director's rooms where the risk of damage is lower.

WC pans are generally of the 'back to wall' style, for reasons of both strength and ease of cleaning. Male WC cubicles should be 800mm wide (door openings at least 750mm wide), and female cubicles should be 900mm minimum with space for disposal bins. Cubicle depth can vary between 1.5m and 1.7m but there should be a clearance of at least 250mm between the inwardly opening door and the rim of the WC pan.

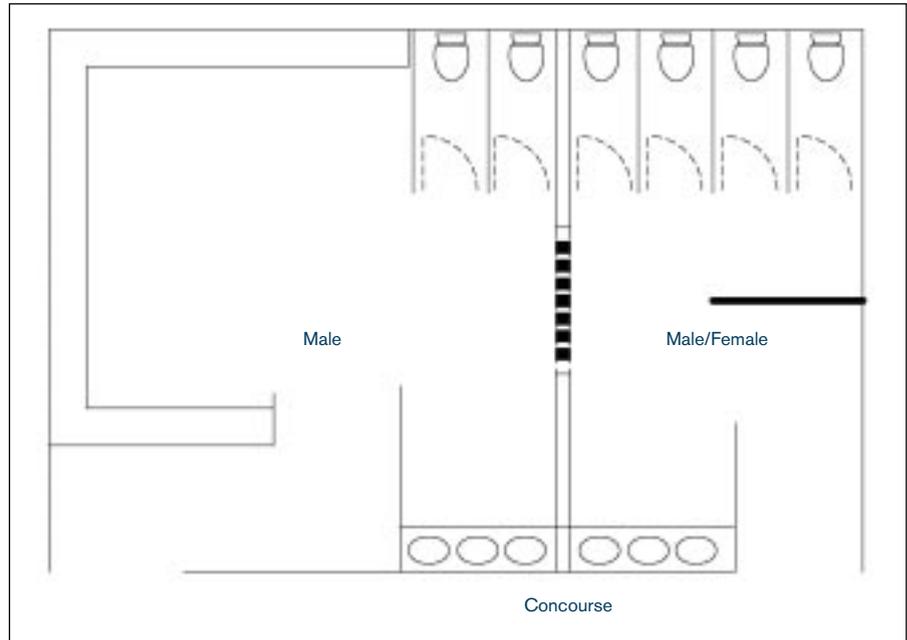


Diagram 4: Temporary divisions to male/female toilet areas

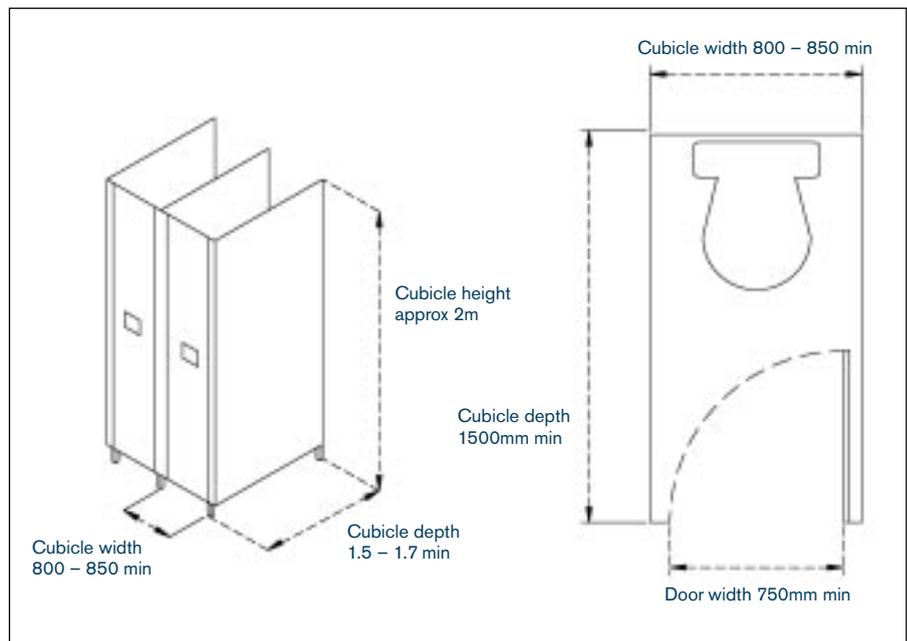


Diagram 5: Shows the design of WC cubicles

Catering

Whilst there are no specific design requirements for catering outlets at football grounds, there are some general principles which should be followed as far as possible. It must be remembered that kitchens are probably the principal fire hazard at a football ground.

- If a concourse is part of the design and layout of a stadium it does provide opportunities and advantages that includes weather protection, meeting place, licensed bars (subject to safety and licensing restrictions).
- Tea bars etc, should always be as wide as possible so that, if demand justifies it (especially at big matches) several catering assistants can serve customers simultaneously; this will help to avoid queuing, particularly at half time, and will also help to sell more food and drink.
- As with toilets, there should be separate catering outlets serving home and away supporters where the ground plan involves segregation.
- Catering outlets should be positioned where any queues of customers do not impede the circulation of people along any main pathways, concourses or corridors.

- Catering outlets should not create any unacceptable risk or be placed immediately next to the foot of exit stairways leading from spectator areas where the safe exit of spectators could be impeded by queues.
- Public Health and Health and Safety legal requirements must be followed, and the positioning of the catering outlet should allow for safe and convenient disposal of waste.
- Design and layout requirements for people with disabilities are covered in Data Sheet 3

First Aid

For ground management to discharge fully its safety responsibilities it should ensure that proper first aid provision is available for spectators as well as for players. The Green Guide recommends that first aid provision and a crowd doctor should be present when there are over 2000 spectators and that when the crowd is less than 2000, arrangements should be in place to summon a suitably experienced crowd doctor to deal with emergencies. League requirements (e.g. Conference) may stipulate that clubs must ensure that a doctor is present at their home games.

A first aid room should be provided in consultation with the local ambulance service trust, the local authority, the crowd doctor (if appropriate) and the voluntary first aid society. It should be a minimum size of 15 square metres and should contain a couch and storage space for medical supplies, blankets, pillows, stretchers, buckets, bowls and screens.

A defibrillator should be provided for matches with over 5000 spectators.

The first aid room should contain the following fixtures and fittings:

- heating, lighting, ventilation
- provision for clinical and 'sharp' waste
- stainless steel sink
- hot and cold water plus drinking water
- toilet
- worktop
- telephone line (direct) to emergency services.

Doorways and passageways must be wide enough to allow access for a stretcher or a wheelchair.

The first aid room should be easily accessible both to spectators and to the emergency services and ambulances. It should be clearly signposted, and known to all stewards.

Signs and Information

Signage is a vital part of any safety and communication system. Signs should direct people to the ground and as they arrive it should be made clear where (if necessary) home and away supporters should enter as well as where provision has been made for disabled spectators (see *Data Sheet 3*).

The main types of signs are as follows.

Safety signs. These are designed in 5 categories with their own shape and colour requirements:

- prohibition signs (e.g. No Smoking): these are circular with a pictogram on a white background and a red diagonal across the picture
- warning signs (e.g. Uneven Steps): a black pictogram on a yellow background, within a triangle
- mandatory signs (e.g. Spectators Must Not Cross This Line) using a white pictogram on a blue background, within a circle
- emergency escape or first aid signs: a rectangle or square, with a white pictogram on a green background
- fire-fighting equipment signs: square or rectangular with a white pictogram on a red background.

Information signs. In addition to these standard safety signs, clubs will need to provide information signs (including, where appropriate, ground plans) giving directions to areas of the ground. Signs in this category should not use predominant colouring which could lead to confusion with safety signs, nor should they obstruct or obscure any safety signs.

Signs should be firmly fixed, kept clean, and should not be hand-written.

Commercial signs. Commercial signs and hoardings are important to clubs but they must be positioned where they do not obscure or detract from safety or information signs, for example by using the same colours as safety or information signs or by blocking the line of sight.

Control Rooms

Control rooms are not among the items funded by the FSIF at this level and may not be installed in smaller grounds, but the need for a control room should be taken into account by clubs in the Conference aspiring to League status, especially where grounds are being re-configured e.g. by the construction of a new stand.

There is extensive technical literature on the design of control rooms (previously misleadingly called 'police boxes' or 'central control points') and on the wider issue of communication systems within a football ground and between the ground and outside agencies. Obviously the importance and the scale of the control room will depend upon the size of the ground and the number of spectators. The main issues are set out below.

- Positioning, so that blind spots and noise contamination are avoided and where the control room is secure but can be reached easily by authorised staff.
- Space: a small control room with a minimum of 2 workstations but with space for 4 if needed will require about 15 square metres including desks/workbenches.
- The design and location of the control room should be agreed with the local authority and the emergency services.
- The control room should if possible be separated from the general public address announcer although the latter can occupy a separate booth within the control room.
- Glazing should take account of the need to avoid glare from the sun, from floodlighting and from internal reflections.
- Ideally the control room should have or should adjoin its own toilet facilities.
- Staff in the control room should be able to receive information about the number of spectators who have entered the ground.
- The fire alarm master panel should be in a location that is accessible and visible to the fire service. If this is not the control room, a repeater panel should be in the control room.

Although local authority safety officers, police and fire officers may be involved in the design of a control room and may be in attendance at big matches, it must be stressed that responsibility for the safety of spectators lies at all times with the ground management.

Press and Media

Local press coverage is a lifeblood of many football clubs and provision for local sports journalists is an important feature of the ground. Leagues will specify the number of press seats to be provided, – typically with the Conference requiring 6 and Level 2 leagues specifying 2 to 4 – depending on the grade. Small clubs may draw high profile opposition in the FA cup.

Press seating should be located along one side of the ground (a side not facing the sun during daytime matches) with clear views over the pitch area. The seating should be under cover, and should be separated from public seating.

The press seats should have either a folding or a fixed desk top, with lighting for evening matches and ideally with a telephone link.

A popular feature at some clubs is a radio commentary for local hospitals. Where this is planned, the commentator's cabin should be centrally located to the side of the pitch (not facing the sun), with acoustically absorbent walls and with 'quiet' flooring such as carpet or rubber.

Dugouts

Dugouts for managers and trainers must be separated and marked to indicate which is for the home club and which is for visitors. Leagues will normally specify the number of places and size to be provided in each dugout.

Location should be near the half way line. Sight windows (glazed or unglazed) should be provided at the end of each box unless the seating positions provide a clear view of the whole pitch. Seating in the dugouts should be fixed.

Directors' Boxes and Boardrooms

Standards and requirements will be laid down by your league, or a higher level that you are seeking to achieve.

Publications

Guide to Safety at Sports Grounds (The 'Green Guide')

The Stationery Office
PO Box 29
Norwich NR3 1GN
Tel. 0870 600 5522

The Building Regulations

The Stationery Office
PO Box 29
Norwich NR3 1GN
Tel. 0870 600 5522

Addresses

Football Licensing Authority
27 Harcourt House
19 Cavendish Square
London W1G 0PL
Tel. 020 7491 7191

British Standards Institution
389 Chiswick High Road
London W4 4AL
Tel (Information Centre) 0208 996 7111

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Acknowledgement

The assistance of Acoustic and Electro Acoustic Consultants is gratefully acknowledged.

Disclaimer

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The FSIF reserves the right to amend, add to or discontinue the advice contained in this Data Sheet.

Should you have any queries on this Data Sheet, or anything on the wider work of the FSIF, please do not hesitate to contact us.

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Ref: FSIF Data Sheet 5. Publication Date: Jan 2004.