

FOREWORD

Dear Handball Friends,

Over the past decade, the notion and understanding of a sporting event has changed significantly and, in some aspects, beyond recognition. We are no longer talking about a simply sporting match of two teams, where one team is declared the winner, but a highly complex event, which is dependent on extremely intricate organisational and operational working processes and set-ups.

The sport of handball in particular has experienced an ongoing evolution and it has become ever increasingly important to ensure and secure an appropriate infrastructure to hold matches or events of this dimension. Strict guidelines are set by all governing sport bodies as they have the duty to guarantee that a top level product is delivered to the satisfaction of the sporting world. The status and development of the sport is at stake.

The architect and engineers are faced with a mammoth task when taking on the project of designing and constructing an event arena. Very few indoor sports have the exclusive luxury of having a state-of-the-art arena all to themselves. As we are all aware, each and every sport has specific requirements and demands in accordance to the playing rules, philosophy and traditions of the sport.

The European Handball Federation is very much aware of this fact and has consulted various specialists in compiling this EHF Arena Construction Manual. It has been divided up into key areas with expert descriptions, requirements and advice for the engineering team and consultants taking on the task of building an arena to the optimum brief.

It was our objective to offer you a tool to work with while in the planning stage and beyond. We hope that we have achieved our goal. This is a manual which will continue to grow with the ever changing time. The EHF sees it as its duty to serve as a partner in such highly technical matters.

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1. INTRODUCTION

The fast-paced development of modern handball at the national and international level means that it is not always possible to implement appropriate space utilisation schemes for individual matches or tournaments played as part of official competitions in existing arenas or multi-purpose halls. This has led to increasing demand for guidelines and standards for international handball competitions and also to the consideration, as early as in the planning stage, of the needs of modern handball when new arenas are built by the National Federations.

Fundamental planning data have to be compiled by the developer on the basis of an analysis of needs. This requires observance of EN standards and the statutory regulations of the country concerned as well as collaboration with representatives of national and international handball organisations.

This EHF basic manual is intended to provide an overview of guidelines and standards to be considered during construction planning in order for the design of arenas to meet the needs of national and international competitions.

References are made to the rules and regulations below to help identify the requirements.







-  Construction standards (EN standards) and fundamentals
-  IHF Rules of the Game and Substitution Regulations
-  IHF publications – Recommendations and Guidelines for the Construction of Handball Playing Halls
-  EHF European Championship and European Cup / CL Regulations
-  Bidding documents for EHF EURO Events
-  EHF Safety and Security Procedures and Advertising Regulations
-  EHF Media Management Guidelines
-  EHF/Infront Minimum Requirements for TV Host Broadcasters
-  EHF/Infront Marketing Operation Manual
-  EHF EURO Set-up Manual

This manual is based primarily on the experiences of EHF officials serving in the EHF Technical Commissions, as EHF delegates, and of EHF Office staff.

2. PLANNING GUIDELINES

2.1. LOCATION

Potential venues have to be tested for suitability by applying the following criteria:

-  Blending into urban or rural landscape
-  Size of catchment area
-  Road network
-  Availability of public transport
-  Reasonable distance from sources of unwanted noise
-  Avoidance of venues in the immediate vicinity of quiet zones (e.g. hospitals)

2.2. REGIONAL DEVELOPMENT PLAN

An arena project always has to be designed to meet the needs of the region in which it is located and has to be integrated into a regional development plan. Apart from clarifying the question of arena location with due consideration of the said criteria, the development of the area surrounding the arena at the location selected is likewise of importance. Existing infrastructure such as roads and public transport services in the surrounding area, eateries and shops as well as the land area required for the premises (about 50,000 m²) including adequate space for parking have to be included in regional development planning as well.

2.3. EVENT HALL

In any case, the design and construction of a large event hall (for 15,000 spectators or more) that is suitable for use for a number of indoor sports as well as for cultural events is very different from the concept of a “pure” or even multi-functional hall for ball games designed to meet the local, national and, to a limited extent, international needs of one or several team sports. When planning a large event hall, it is therefore of particular importance to consider also, from the very beginning, the international requirements of a hall for team sports in terms of infrastructure, media and spectator facilities meeting the needs of events like European and World Championships.






2.4. HALL FOR BALL GAMES

A „pure“ or even multifunctional hall for ball games must be designed to meet the needs of local clubs of several different team sports as well as those of school and club activities. A playing hall that is designed to meet the requirements of handball can be adapted for use by other sports relatively easily. When furnishing the building, special attention may be given to different needs.




2.5. FLOOR AREA

For an event hall the area of the entire building should feature about 120 m x 150 m or about 18,000 m² – 20,000 m².

It shall have a rectangular free floor space measuring at least 50 metres (length) by 28 metres (width) to ensure that the playing court can be covered effectively by TV cameras.

-  Minimum Size: 50 m x 28 m
-  Stands on all four sides of the hall (entrance from the upper floor level, not ground floor level)
-  TV main cameras to be positioned on the side of the substitution area / judges' table. To permit their proper positioning, structural and technical arrangements have to be made in the grandstand sector in which they are installed.
-  TV camera angles of the various camera positions to be taken into account
-  Space needed for perimeter advertising, photographers and flash zone, if applicable, to be taken into account

Compliance with the following aspects must be ensured in all cases (see also III.1 and III.2)

-  Safety zones
-  Perimeter advertising requirements and
-  Rules relating to the substitution area and the judges' desk

(see also 4.1.).

If extendable and/or additional grandstand structures are to be installed, these shall be of such size that their maximum capacity ends outside the floor area of 50 m x 28 m.

2.6. POWER SUPPLY/EMERGENCY POWER SUPPLY

Grounding receptacles (230V – including three-phase current) for energy-saving TV broadcasting shall be provided in the hall near the playing court and the principal TV cameras. If the hall has a connection for cable TV, access to the connection box must be provided. If a “house channel” exists, through which the output to the OB van is to be routed, a connection is also required on the OB van. Loose pipe ducts with connections for cables (electric power, Internet) shall be provided in the TV commentators' area and for connecting to the TV compound.

In any case, the arena shall have an adequate emergency power supply (possibly a generator) that will provide emergency power supply in the case of a power blackout.

2.7. LIGHTING

Natural lighting of the arena shall be in compliance with EN standards. For artificial lighting, the following reference values for light intensity apply for TV broadcasting:

 Top quality:	0000 lux (minimum)
 Standard quality:	0000 lux (minimum)
 Basic reporting quality:	2000 lux (minimum)

Care must be taken to ensure that all hall lighting installed is of the same colour temperature to avoid a mixed lighting situation.

Windows letting sunlight or daylight enter the hall must be covered or shuttered. This prevents “light-intensive” points – caused, for example, by sunlight – interfering with TV images or irritating players or spectators.

2.8. OUTDOOR AREAS/PARKING

As a rule, parking should be as close to the arena as possible, with the nearest parking lots to be reserved for TV crews, team buses, event officials, journalists or persons with

handicaps. In addition, further parking shall be provided for buses (at least 30) and cars (at least 2000 – but depending on the size of the arena). Entrance and exit for vehicles shall be arranged in such a way that players, VIPs and officials as well as the press have access to their respective entrances and that parking is available near the entrance.

In addition, care should be taken to separate pedestrians from vehicles as effectively as possible with as few intersections as possible.

Access to the arena for ambulances, fire-fighters, and police must be ensured at all times.

The space requirements for TV/media vehicles are stated separately under point 6.2.

Total parking space available should be about 15,000 m² to 20,000 m² depending on the size of the arena, with about 2,500 m² to be reserved for parking OB vans (up to 16) of TV broadcasting teams. Another 2,500 m² of parking space should be provided for the press and VIPs, about 10,000 to 15,000 m² for private cars.

2.9. ENTRANCE AREA

The entrance area of an event hall should measure about 5,000 m² in order to take up crowds, enable spectators to access the hall, and offer adequate service to visitors of major events.

Entrance areas, ticket desks and accreditation desks (VIPs, press) shall be clearly marked by signage.

Access areas to hall entrances should be designed to keep waiting times for spectators at access and security check points as short as possible.






In front of the arena's main entrance, flagpoles shall be provided to permit hoisting of representative or event-related banners or flags.

3. STRUCTURAL CRITERIA

3.1. DRESSING ROOMS/TEAM ROOMS

Arenas shall have a minimum of six dressing rooms for the teams as well as two for the referees (male and female) with a minimum of 35 m² each.

All dressing rooms shall be structurally separated from each other (separate access, separate sanitary facilities). Dressing rooms shall be located on the side of the substitution area. In addition, the following rooms shall be provided:

-  2 – 3 referee dressing rooms (each at least 35 m²)
-  4 massage or meeting rooms (each about 30 to 50 m²)
-  2 multi-purpose rooms (each about 50 to 60 m²)
-  A minimum of 4 large storage rooms
-  Storage facility near the judges' table and substitution area

3.2. ANTI-DOPING ROOM

Each arena should have its own room for doping tests, located near the teams' dressing rooms. The anti-doping rooms shall have a minimum size of 30 m² and include a waiting room, a working room, and a separate toilet area, all adjacent to each other.

The waiting room is part of the working room or adjacent to it (a partition between the two areas is also permissible). It must have seating for eight people, coat hooks or lockboxes as well as a refrigerator. The working room shall contain the following: a table, four chairs, a washbasin with running water, a lockable cabinet as well as a toilet (next to the room or in the room itself).

The toilet area should be inside the working room, towards the back. It must have a toilet and a washbasin with running water.

For a layout of the anti-doping centre see 7.5.

3.3. FIRST-AID SERVICE FOR PLAYERS

- The hall shall have a specially furnished room for the administration of first aid and other medical treatments to players.
- In international events, the presence of an ambulance vehicle staffed by a physician and nursing staff has to be ensured during the entire playing time as well as during the 30 minutes before the match. Appropriate parking with unobstructed access and exit has to be provided.
- It is important to keep routes leading outside short for quick evacuation;

3.4. FIRST-AID SERVICE FOR SPECTATORS

- In the hall, a separate first-aid room shall be provided for spectators, which must be properly marked.

3.5. OFFICE, ADMINISTRATION AND ACCREDITATION ROOMS

Office and administration rooms plus technical equipment have to be provided in adequate numbers for events of different kinds.

- 4 office and working rooms
- 1 working room for delegates
- 1 meeting room for about 15 people
- 4 storage rooms for the temporary storage of sports equipment or technical equipment (TV host broadcaster, provider of statistical services, marketing partners, etc.)
- Rooms for supporting programme (escort kids, mascots, etc.)
- Accreditation in the hall entrance area – minimum size 50 m² – with direct access from outside

All press/media accreditations should be issued and collected at the press centre.

3.6. VENTILATION SYSTEM, HEATING AND AIR CONDITIONING

The arena shall be equipped with a heating system that is in full compliance with statutory EN standards with regard to heat load, thermal output, heat distribution, and natural or mechanical ventilation.

For ventilation, an air circulation system shall be installed, preferably in combination with the air conditioning system that meets the national statutory standards.

Temperature in the hall shall not be below 18 degrees and not above 24 degrees Celsius.

3.7 PIPES/DUCTS/WIRING

All pipes and wiring shall be of such size that in the areas in which they are employed they meet the requirements of international events even when various systems (lighting, TV production, stage show, media representatives) are used simultaneously. Planning should provide for a lockable cable flap connecting the TV compound with the interior of the hall, with minimum dimensions of 40 cm x 40 cm.

As a general rule, all pipe, duct and wiring systems shall be in compliance with EN standards and shall not pose any security hazard to spectators or athletes.

3.8. SIGNPOSTING

Signs and signposts as well as marking of access areas shall be provided in adequate numbers, clearly visible, and use international symbols or lettering in English.

3.9. FACILITIES FOR PERSONS WITH HANDICAPS

At least part of the driveways and entrances shall be designed to meet the needs of people with handicaps (wheelchair width, level access, ramp).

Places for parking wheelchairs and seats for accompanying persons shall be reserved at playing court level on the short side.

A toilet for disabled persons shall be provided that can be reached by wheelchair users at playing court level and level routing to beverage stalls shall be ensured as well.

4. FACILITIES AND SERVICES

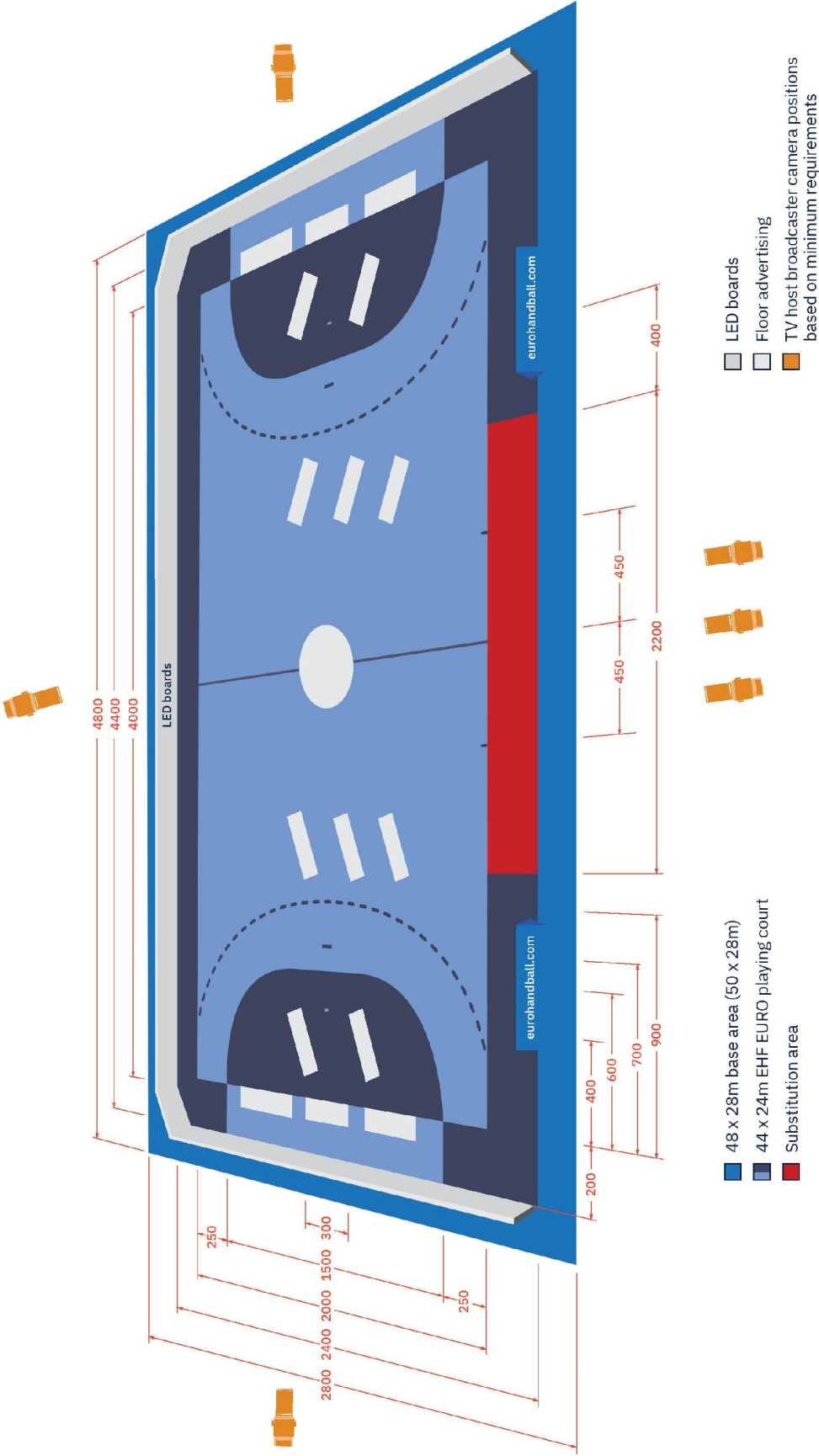
4.1. SPACE AVAILABLE IN THE HALL/PLAYING COURT

The arena must have a rectangular free floor space measuring 50 m (length) by 28 m (width). An area of 40 m (length) by 20 m (width) is required for the playing court in accordance with the Rules of the Game issued by the International Handball Federation (IHF). The remaining space is needed for structures around the playing court (advertising, studios, cameras, space for photographers, substitution area, etc.).

In addition, free space in the playing hall is needed on all four sides outside the base area for spectator grandstands (depending on the utilisation plan and any partially flexible grandstands that may be used).

Grandstands extending down to playing court level shall be accessible from above. As a general rule, no spectator movements are to be allowed at playing court level.

EHF EURO PLAYING COURT AREA



4.2. FLOOR

Irrespective of the hall utilisation plan, the substructure (e.g. screed, concrete) shall be level. The floor system used (permanent hall floors or mobile sport floors) shall be adapted to the substructure in terms of its protective, sporting and technical properties and meet EN and/or DIN standards.

Mobile PVC or parquet flooring shall have the following technical properties and be certified accordingly:

DESCRIPTION			
Surface treatment			
Surface complex			
Foam backing			
Thickness	EN 428		mm
Weight	EN 430		kg/m ²
Length	EN 426		ml
Width	EN 426		ml
SPORT PROPERTIES			
Shock absorption	EN 14808	> 25%	%
Shock absorption	DIN 18032		%
Vertical deformation CEN	NF P 90 203	< 8	mm
	EN 14809	< 3	mm
Energy return	NF P 90 203	> 0.31	m/s
Sliding coefficient	EN 13036-4	80 à 110	
Sliding coefficient	DIN 18032	0.4 to 0.7	
Ball rebound	EN 12235	≥ 90%	%
CLASSIFICATION			
Fire	EN 13501-1		
Fire	ASTM E 648		
Anti-Bacterial and fungicidal treatment			
TECHNICAL CHARATERISTICS			
Dimensional stability	EN 434	≤ 0.4	%
Chemical resistance	EN 423		
Abrasion resistance	EN ISO 5470-1	≤ 2000	mg
Impact resistance	EN 1517	≥ 8	N/m
Rolling load resistance	EN 1569	≥ 1500	N
Indentation resistance	EN 1516	≤ 0.5	mm
Resistance to repeated impacts	EN WI 217007	≥ 25000	

If the basic floor in a multi-purpose hall consists only of screed or concrete, a flexible wooden floor system (wooden interlocking underlayment) must be available which can be used as substructure below sports flooring (direct placement of such flooring on screed or concrete is not possible as this would pose a hazard to athletes' health and would also be incompatible with use for sports).

4.3. GOALS AND SPARE GOALS

The goals are positioned at the centre of the outer goal line. They are firmly attached to the floor, 3 metres wide, 2 metres high and 1.40 metres deep. The bands of colour on the goal posts and the crossbar are each 20 cm wide and of two different colours, usually white and blue.

Each goal must have a net, the so-called goal net, consisting of an inner and an outer net. It must be attached in such a way that a ball that is thrown into the goal normally stays in the goal and cannot fly through the goal. The goalposts and the crossbar are made of the same material, each being 8 cm high and 8 cm wide, with flattened edges.

When flexible floor systems are used, they are attached, as part of the floor, by means of metal plates sized 125 cm x 80 cm. In addition, a minimum of one spare goal must be available in every playing hall that can be quickly set-up, if needed.

4.4. CATCH NETS

Behind each goal area, black catch nets, mesh size 10cm x 10cm, shall be loosely suspended along the entire length of the playing field and beyond – at least 26 m x 8 m high. The bottom end shall be attached to the advertising boards about 3 m to the right and left of the goals.

The catch nets have to adequately reach the floor. As cameras are often positioned in the upper part of the grandstand behind the goals, care must be taken to ensure that these cameras have unrestricted view and are not obstructed by the net holders.

4.5. LINES

All lines on a permanent arena floor shall be exclusively handball lines conforming to the IHF Rules of the Game or, as the preferred alternative, the CI floor system without lines (see illustration under 4.1) shall be used. If mobile handball flooring is installed, such flooring may likewise show only handball lines or an EHF-approved complementary segment scheme (EHF EURO Event floor scheme).

4.6. ADVERTISING AREAS

Arena surfaces within the range of the TV camera that can be used for advertising are perimeter and floor surfaces.

Floor advertising depends on the advertising regulations applicable to the specific event and consists of adhesive material that can be firmly attached to the floor and removed again. The guidelines for proper floor set-up shall be adhered to and the best possible visual appearance ensured.

Perimeter advertising is either on stationary perimeter boards or on electronic rotary panels or LCD panels. Perimeter boards are usually about 1 m high and about 1 metre deep. Plans should generally provide for a full advertising set-up (one full long side with a minimum of 43 metres and 2 full short sides with a minimum of 23 metres each).

Permanent advertising on structural hall elements is often visually unattractive and interferes with the general appearance. It must be removed or covered when events are staged in accordance with the Regulations. Care must be taken to ensure an attractive optical appearance.

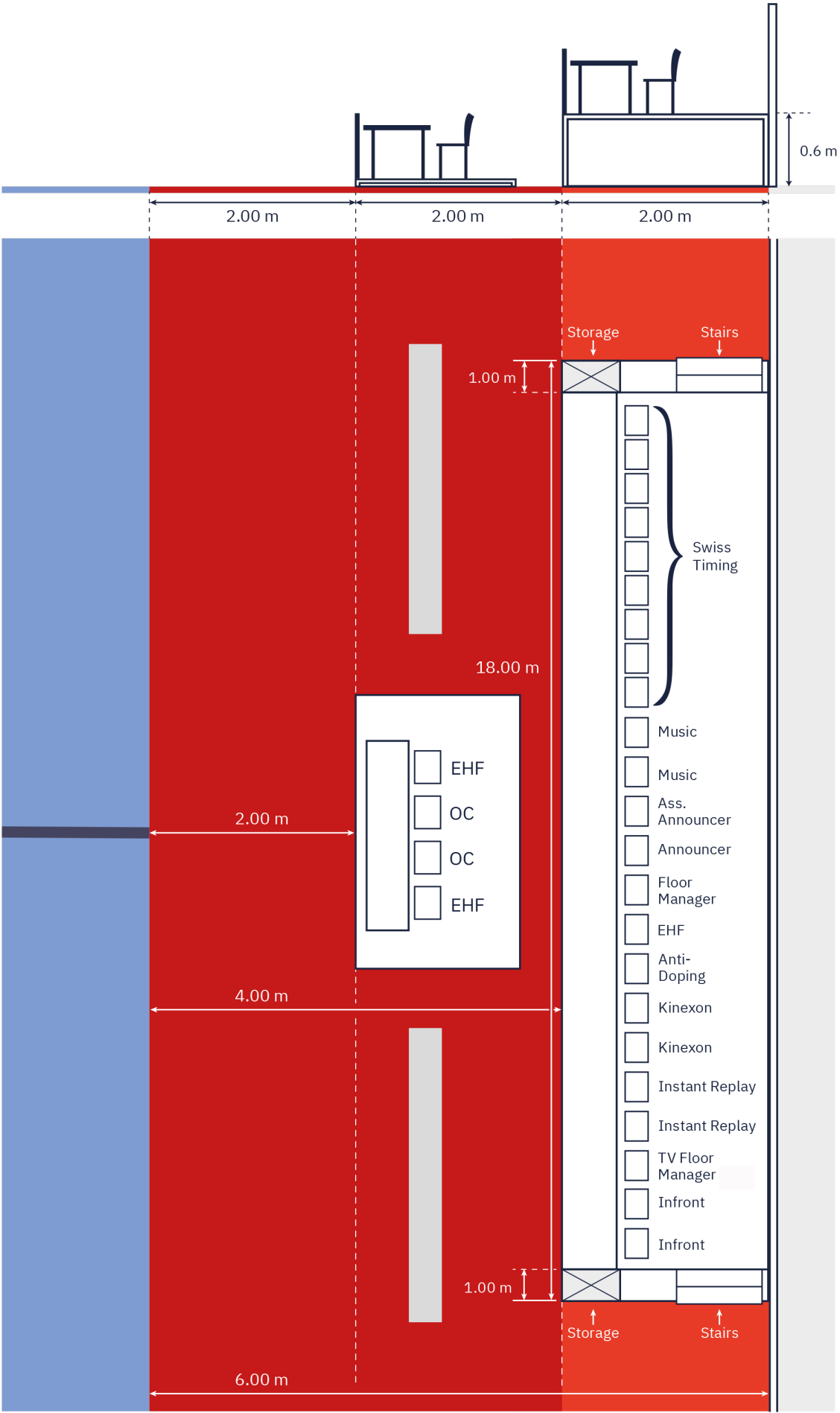
4.7. JUDGES' TABLE / TIME-KEEPING / WORKING AREAS FOR OFFICIALS

Compliance with the IHF Rules of the Game and the rules of the Substitution Regulations is essential. A system comprising a judges' table and a support desk shall be set up as follows:

- Judges' table: 75 cm high, 3 m long, 70 cm wide with 4 workplaces, technical equipment and a venue board
- Support desk: 75 cm high, 16 m long, 70 cm wide with 24 workplaces and technical equipment for speaker, musical equipment operator, etc.

A combination of judges' table and support desk would be arranged as follows:

- The judges' table is placed on floor level,
- The support desk on a platform that is 40cm high.



4.8. DISPLAY SCREEN/SCOREBOARD

One 4-sided screen cube (Jumbo tron) shall be fixed in the centre of the arena onto the ceiling (with a minimum size of 6m x 4m) and two screens (in addition to multimedia screens). It must be possible to display the time played (0-30' to be displayed per half-time), a minimum of 3 suspension times per team, the match pairing, the match score, the 32 players on the court as well as statistic data material.

4.9. ADVERTISING BOARD CONTROL/MATCH SCOUTING

If needed, space shall be provided for advertising board control (rotary or LCD panels) and the Statistics Scouting Crew in the central area of the grandstand of the side on which the main TV camera is positioned, with, as far as possible, unobstructed view of the playing court and quick access to the playing court (judges' table).

4.10. FLAGS

In the hall, hangers for the presentation of national flags are to be provided either on the front end centrally in the ceiling area or on the long side of the grandstands located opposite the principal TV camera.

Care must be taken to ensure that cameras positioned in the upper part of the grandstand behind the goals and the principal/lead cameras have a full view of the entire playing court up to a height of 10 to 12 metres above the playing court.

The arena shall also have a flag hoisting system for use in award ceremonies of international competitions.

4.11. CATERING

At events, infrastructure for selling beverages and food shall be provided temporarily outside the central part of the arena (outside the range of the TV cameras), i.e., in the foyer or in the areas leading to the grandstands.

5. SPECTATORS

5.1. GRANDSTANDS AND FACILITIES FOR SPECTATORS

Generally, hall capacity shall depend on the purpose or use of the playing hall. In any case, the playing hall must have enough grandstands on all four sides for spectators. The headroom for handball halls is 10m. In event halls featuring Jumbotron systems up to 12 m headroom is required, depending on the seating capacity for spectators in the hall.

Grandstands that are permanent structures must be accessible for spectators from the top via staircase corridors that must meet the national statutory safety standards. Arrangements for accessing grandstand zones for specific users such as the press gallery may also be set up, but must in any case be secured and comply with the prescribed

routing. Access shall always be from above; there shall be no movements of spectators on the level of the playing court.

In the case of partially flexible grandstand elements (extendable grandstands), the safety distances to the playing court must be observed and the routing for spectator movements must be defined in line with safety rules.

The standing areas for cameras and the areas for commentators and other media representatives should be taken into account here and, if necessary, levelled with platforms to attain an even height.

For all spaces that must remain free, see 6. Media.

5.2. ARENA CAPACITY

Hall capacity shall generally be defined with due regard to the events planned to be staged and typical local spectator turnouts.

An arena that is planned to be used as the venue for the home team in the main round of a European Championship must have seating for at least 12,000 spectators Men's events and 8,000 spectators for Women's events. For the other venues, the minimum arena capacity is 6,000 for Men's events respectively 5,000 for Women's events. If semi-finals and final games are played in an arena, the arena must have at least 18,000 seats in Men's events and 12,000 seats for Women's events.

5.3. SEPARATION OF SECTORS

The grandstands shall be subdivided into different sectors which shall be fully separated for safety reasons. Different fan groups shall be allocated to effectively separated sectors.

5.4. ENTRANCES AND EXITS

Entrance gates and/or turnstiles must be installed that prevent jams and ensure an even flow of spectators. All public passages and exits to the spectator areas, all gates leading from the spectator sectors to the playing area and all exit doors and gates out of the arena must be marked in clearly visible colours.

All exit doors and gates as well as all entrances from the spectator areas to the playing area must feature:

- A closing mechanism that can be handled easily and fast from inside if it is an exit door or gate, and from both sides if the gates lead into the playing area;
- A design that keeps them unlocked as long as there are spectators in the arena.

All accesses to the arena must be marked appropriately with signs leading the spectators to their sectors. All turnstiles, entrance and exit doors and gates must be in operation and likewise clearly marked by universally understandable signs.

5.5. ESCAPE ROUTES/EMERGENCY EXITS

Each level of a grandstand must have an adequate number (depending on the number of spectators and regulatory requirements) of clearly signposted emergency exits that are accessible without any hindrances and marked with the international illuminated sign “Exit”.

The standard number and width of emergency exits depends on the number of spectators in each escape area and is defined by law.

5.6. EMERGENCY LIGHTING

The arena must have emergency lighting for the event of failure of the main lighting system that has been approved by the competent local authority in all publicly accessible parts of the arena, including all emergency exits and escape routes in order to ensure safety and provide an orientation for spectators.

5.7. FIRE PROTECTION

When constructing arenas, the EN standards for fire protection must be complied with for the construction materials of the arena and for the interior furnishings. Compliance with specifications for fire resistant doors as well as adequate signs with instructions for what to do in the event of fire must be ensured. When using sports apparatus such as mobile sports flooring, the certification within the scope of fire protection rules must be observed.

5.8. PUBLIC ADDRESS SYSTEM

The arena must have two separate public address systems. The public address systems must remain functioning even in the case of failure of the main power supply. The required sound system must comply with EN standards.

The system must be designed to make automatic emergency calls in case of an emergency.

It must be possible to individually control the sound system in the areas where media representatives, commentators and the studios are located.

In an emergency, announcements directed at spectators must be using this system.

5.9. SANITARY FACILITIES FOR SPECTATORS

Every arena must have sit-down toilets for spectators of the two sexes as well as urinals, with the ratio being at least one sit-down toilet per 100 spectators and at least one urinal per 150 spectators.

5.10. CONTROL ROOM




Control rooms for operating hall technology (energy and power supply) and controlling screens and music must be provided, and especially during events the presence of a competent technician must be ensured.

5.11. VIDEO SURVEILLANCE SYSTEM

For security reasons, installation of a video surveillance system shall be provided for “sensitive” hall and access areas.

5.12. VIPs AND HOSPITALITY AREAS

When planning hall infrastructure, type and design of VIP services has to be considered:

-  Size and furnishing of VIP room
-  VIP boxes
-  VIP seats on the grandstand (always on the side of the TV camera)

As the provision of VIP and hospitality services depends strongly on the type and size of an event, it is recommended to provide for several generously sized rooms when designing an arena – as these can be used for other purposes as well. When installing temporary VIP boxes, special attention should be given to connecting passages.

The organiser of final weekend games for European Championships for adults must provide two separate VIP areas, one of which should be a "VIP Lounge" for 250 persons, the other one for around 600 persons. The organisers of the preliminary and main rounds must provide a VIP Lounge with a total capacity for around 150 to 250 persons (depending on the group constellation and games per round).

5.13. FAN SHOPS AND STALLS

Outside the central part of the arena (outside the range of the TV cameras), i.e., in the foyer or in the areas leading to the grandstands, space shall be provided for setting up temporary fan shops, promotion stands, and stalls.





At events, infrastructure for the sale of beverages, food and fan items may also be set up temporarily outside the hall in the entrance area.

6. MEDIA

6.1. WORKING ROOM FOR TV AND MEDIA

If televising is desired, then the planning must be coordinated with competent expert staff. The following rooms should be made available:

Media rooms (each about 20 m²):


-  1 room per TV station that works on site:
-  1 room for perimeter advertising (as storage room)
-  1 room for TV graphics and scouting (as storage room)
-  1 meeting room for the host broadcaster (double size)

Each room must be lockable and each room must be equipped with sufficient electricity sockets (220V) as well as telephone / ISDN / Internet connections and should have a minimum size of 6 m x 4 m - Office furnishings (tables, chairs, fax, etc) upon request.

Internet access at EHF Competitions/games shall be provided free of charge.

6.2. AREAS FOR PARKING AND MOVING TECHNICAL VEHICLES

Generally, the following areas should be made available for transmission equipment (vehicles plus movement radius) per TV station broadcasting from the venue site with its own technology (as an average):

 Broadcasting van, standing space:	
1 broadcasting van:	18 m x 4 m
1 equipment vehicle:	14 m x 3 m
1 slow-motion vehicle:	8 m x 3 m
1 uplink/ATM or point-to-point radio:	8 m x 3 m
1 editing vehicle: (e.g. ONAIR)	8 m x 3 m

In the case of uplink use, the vehicle must have a free view facing southeast (elevation 15-35 degrees).

All of the vehicles listed are connected to each other by cable and should therefore stand on the same place.

For the finals weekend of a EURO tournament, a freely available area of 50 m x 50 m (2500 m²) is required that can be reduced at short notice before an event depending on the requirements for a tournament (= TV compound).

The TV compound must be fenced in (2 m minimum height of fence) and secured 24/7 by security personnel.

6.3. TV CAMERA PLATFORMS/POSITIONS

The positions of the principal TV cameras are always on the side of the judges' table and substitution side of the playing field (see also III. 1.)

TV camera platforms need a standing space of 2 m x 2 m per camera in use.

Any windows opposite the principal camera should be darkened to eliminate the risk of blinding.

6.4. POWER SUPPLY/WIRING

Power supply:

Irrespective of the actual operating equipment used, the following power supply facilities must be provided for the TV compound as a minimum:

- 1 connection with 125 A CEE
- 1 connection with 63 A CEE
- 1 connection with 32 A CEE
- 3 connections with 16 A CEE
- Grounding receptacle 230V

All CEE receptacles must have 3-phase electricity.

Grounding receptacles (230 V) shall be provided in the hall at the commentator positions and at the edge of the playing court.

Each of the TV power receptacles must be secured separately by its own circuit breaker.

If the hall has a connection for cable TV, access to the connection box must be provided. If a “house channel” exists, through which the output to the OB van is to be routed, a connection is also required near the OB van (max. 80 metres distance).

Wiring:

In order to minimize installation time, the wiring should be laid out as short and as straight as possible. Passing through fire barrier sections should be avoided. The wiring should be installed within fire resistant enclosures,

In particular, the routes to the commentators where scouts are frequently seated nearby should be as short as possible, and if possible, the entire length of a cable should not exceed 150 m.

TV signal feed for the press room and the VIP room must be set up by the TV host broadcaster together with the organiser.

6.5. PRESS GALLERY

The media areas must be separated from the spectator areas. It must be ensured that spectators cannot visit the media areas. However, players, coaches, functionaries and other accredited persons should have access to the media areas. Access to the press conference and to the mixed zone from all media work areas should be quick and easy.

The press gallery for the representatives of the printed media is usually on the side of the principal TV camera behind the substitution area. For EURO events the following amount of media seats is required:

Men 's event:

Preliminary Round: minimum of 80-100

Main Round: minimum of 130-150 (this can include 30 additional seats without table)
Final Weekend: minimum of 280 (280 includes 30 additional seats without table)

Women 's event:

Preliminary Round: minimum of 50-70

Main Round: minimum of 100-120 (this can include 30 additional seats without table)

Final Weekend: minimum of 220 (220 includes 30 additional seats without table)

Media work places in the hall must be equipped as follows:

- Seat with desk pad for representatives of the print media
- Possibility to access the Internet, ISDN for print media (for a fee) (in line with technology standards for major sport events applicable at the time of the tournament)
- Power supply (in line with technology standards for major sport events applicable at the time of the tournament)
- Connections to printer
- Seat with a desk pad for representatives of electronic media who have not acquired any rights to the event, but without technical equipment

Internet access plus socketing shall be made available in all arenas for photographers.

Distances for media representatives on the press gallery to the mixed zone and to the press centre should be short.

6.6. TV AND RADIO COMMENTATORS' BOOTHS

Fixed booths should be provided or space for booths must be available (standing space 3 m x 3 m each). It must be possible to open the front window of the booths. The prime consideration must be to supply enough spaces with good, unobstructed and central views of the playing court free of charge on which commentator places can be set up. Usually, some adaptation work is needed (platforms): Basic requirement for the preliminary round: 14-16 spaces with two seats each, main round: 20-22 spaces, finals weekend: 25-28 spaces).

Furthermore, sufficient grounding receptacles (230V) should be provided for the commentator positions, with a maximum of 3 commentator spaces connected to one fuse (10 Ampere/220V).

General TV media work areas in the hall must be equipped as follows:

Seat with a desk pad, possibility to connect to the Internet and ISDN (for a fee), Observer seats for media representatives, who are currently not working and work area for TV presenters (each 2 m x 2 m) shall be available.

Classical commentator places for TV and radio should be reserved for two persons each.

6.7. TV STUDIOS

At TV events, TV studios with a size of 6 m x 6 m are to be set up either on low platforms (max. 1 m) above playing court level outside of the court at the edge of the hall's area or as a temporary set-up in the form of a level platform in the grandstand area (installation for a fee). A railing is mandatory.

6.8. PRESS CENTRE AND ROOM FOR PRESS CONFERENCES

The press work areas shall be equipped as follows:

- Work rooms should be situated in the arena complex,
- Info Desk and Noticeboard
- Sufficient workplaces (approx. 50, for EHF EURO tournaments 150, and for finals weekends 250), all with power supply
- Trays for information (approx. 30, on finals weekends 45)
- Separate work area for electronic media and for photographers
- Lockers (should be big enough to fit a medium-sized backpack/professional camera lenses) (min. 25)
- 4G/LTE (5G if applicable) network reception must be guaranteed within the media centre
- 4 television (min. 50")

The press conference room shall be equipped as follows:

- Raised seating area with a table for press conference participants
- Sponsor backdrops (6 m x 2.40 m) behind the table
- Microphone in front of each participant of the press conference and a sound system
- Sufficient places for media representatives (60, for EHF EURO tournaments 100, and for finals weekends 150)
- Sufficient lighting for photographers and television cameras
- Equipment enabling direct injection for electronic media (audio distributor for direct injection via max.) 10 XLR connections)
- Raised position for cameras at the back of the room
- Three free microphones on the table
- Portable (radio) microphone for questions of media representatives

6.9. INTERVIEW ZONES (= MIXED/FLASH ZONES)

The mixed zone shall be equipped as follows:

- Security for mixed zone with access control
- Separation/division into three areas:
 - 1) TV
 - 2) Radio
 - 3) Print media
- Possibility to install sponsor backdrops (2.20 m x 2.40 m): in preliminary round, min. 5 units, in finals 10 units per hall
- Separation of players and media representatives (optional)

The flash zone shall be equipped as follows:

- Possibility to install portable sponsor backdrop for TV interviews (1.50 m x 2.40 m): at least two units per hall
- Access area to the flash zone for approved rights owners and host broadcaster

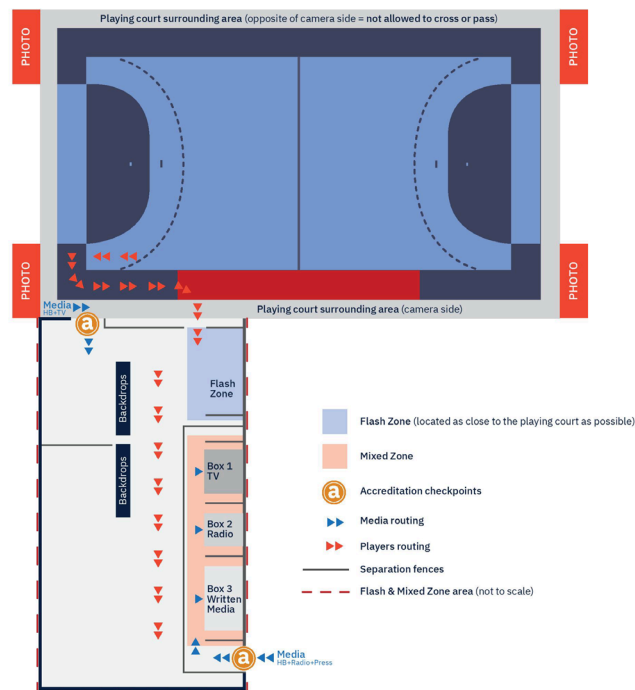
The size of the mixed zone should be as follows:

- Preliminary Round: 8m x 3m
- Main Round: 12m x 3m
- Final Weekend: 16m x 3m

The size of the flash zone shall be as follows:

- Preliminary Round: 6m x 2m
- Main Round: 9m x 2m
- Final Weekend: 12m x 2m

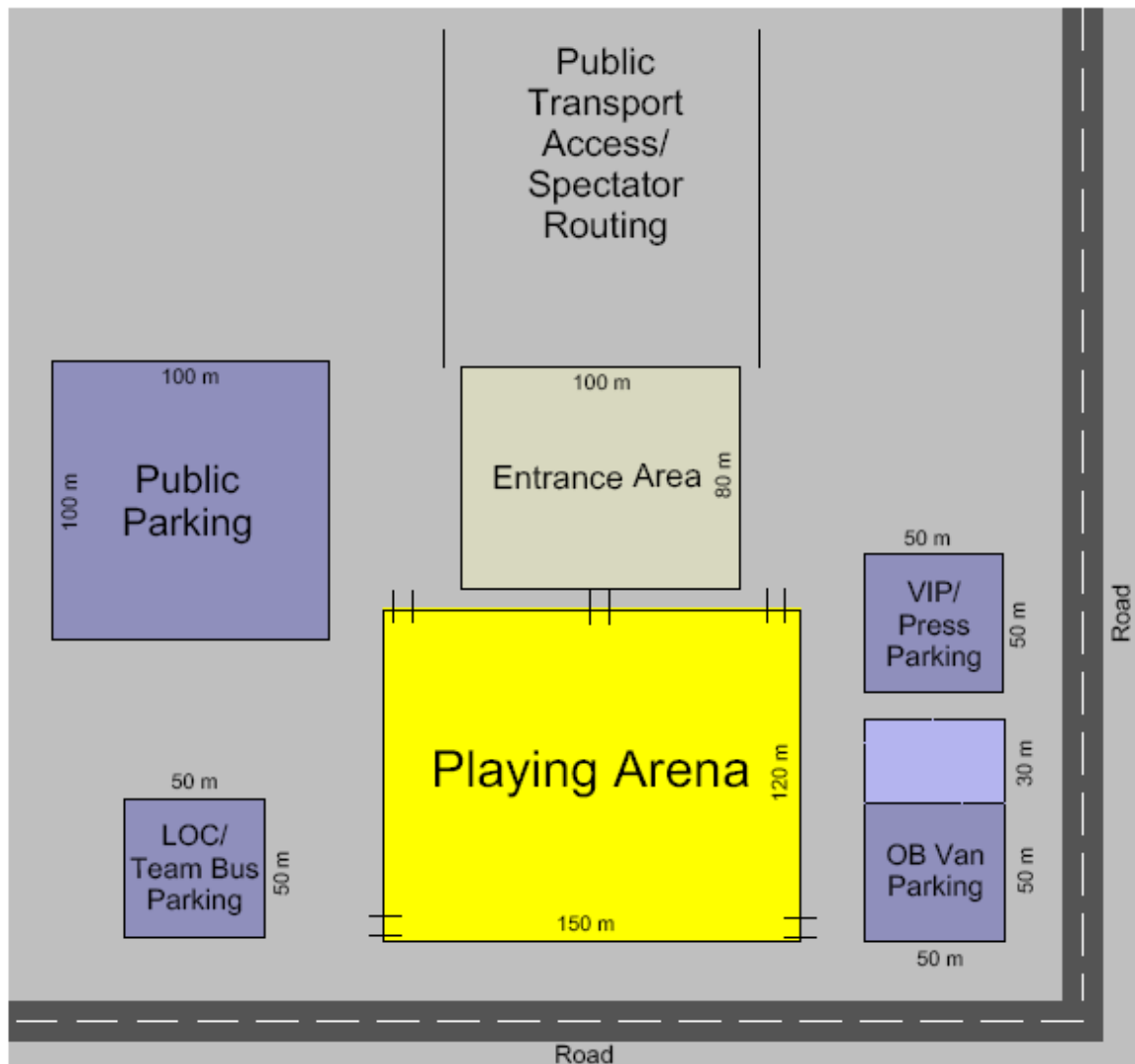
EHF EURO EVENTS — FLASH/MIXED ZONE CONCEPT



7. UTILIZATION AND FLOOR LAYOUT PLANS

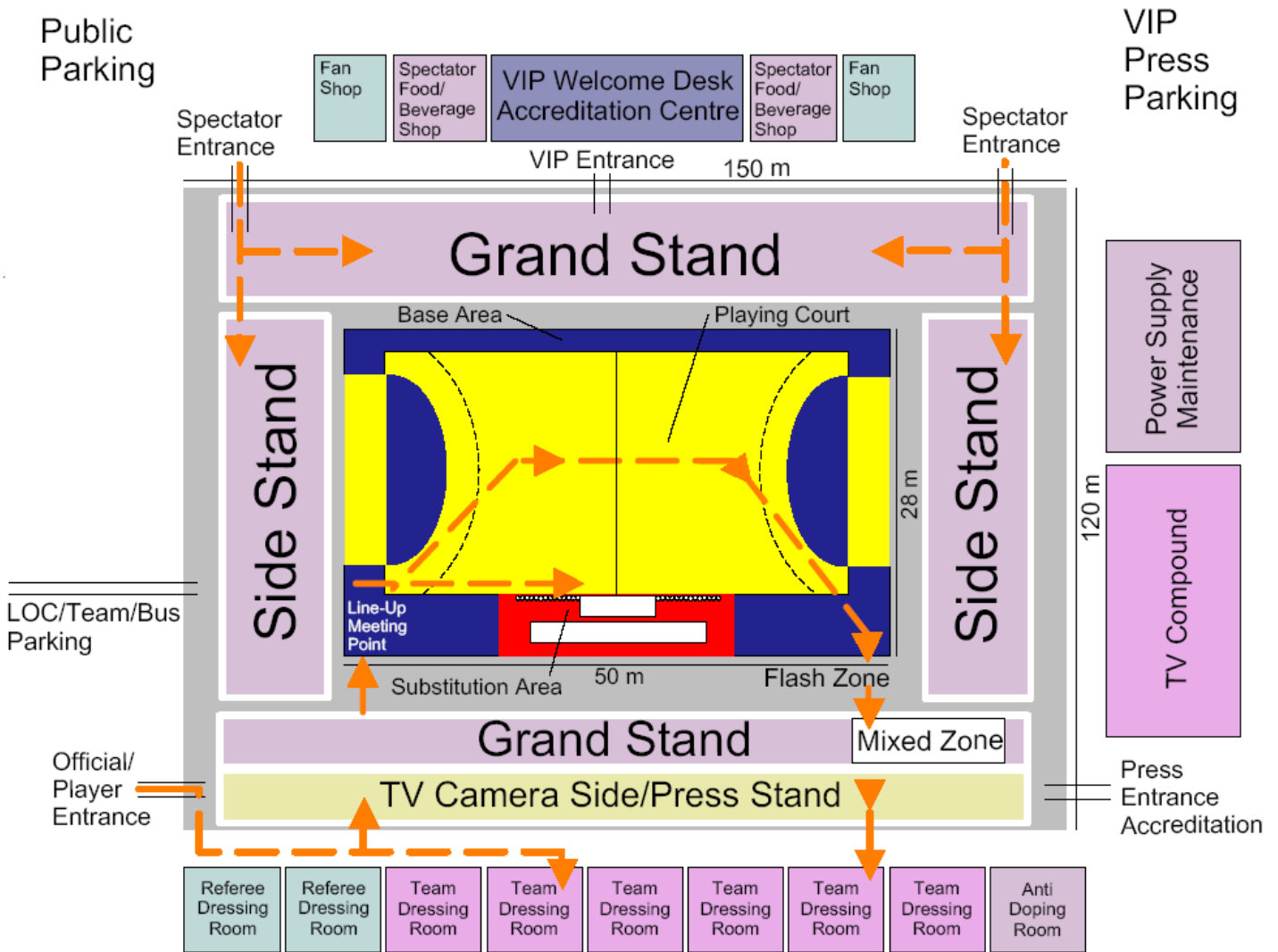
7.1. HALL UTILIZATION PLAN – PARKING/ACCESS AREAS/ENTRANCES

**Basic Handball Hall Utilization
Entrance Area/Hall Access/Parking**



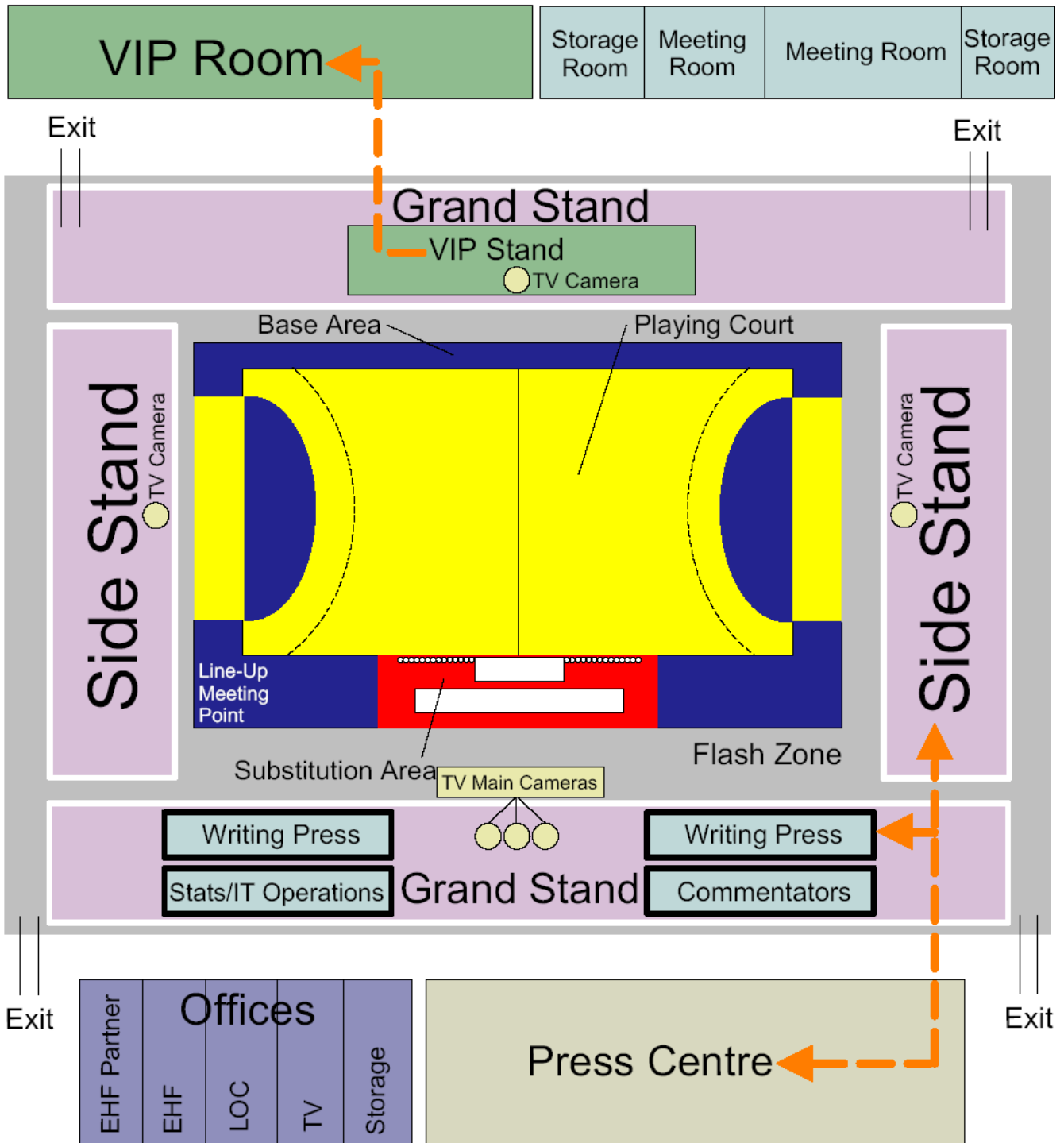
7.2. HALL UTILIZATION PLAN — INDOOR COURT/OUTDOOR GROUND LEVEL

Basic Handball Hall Utilization Indoor Court/Outdoor Ground Level Press/VIP/Spectators'/Players'/Officials' Routing



7.3. HALL UTILIZATION PLAN – STAND/UPPER FLOOR LEVEL

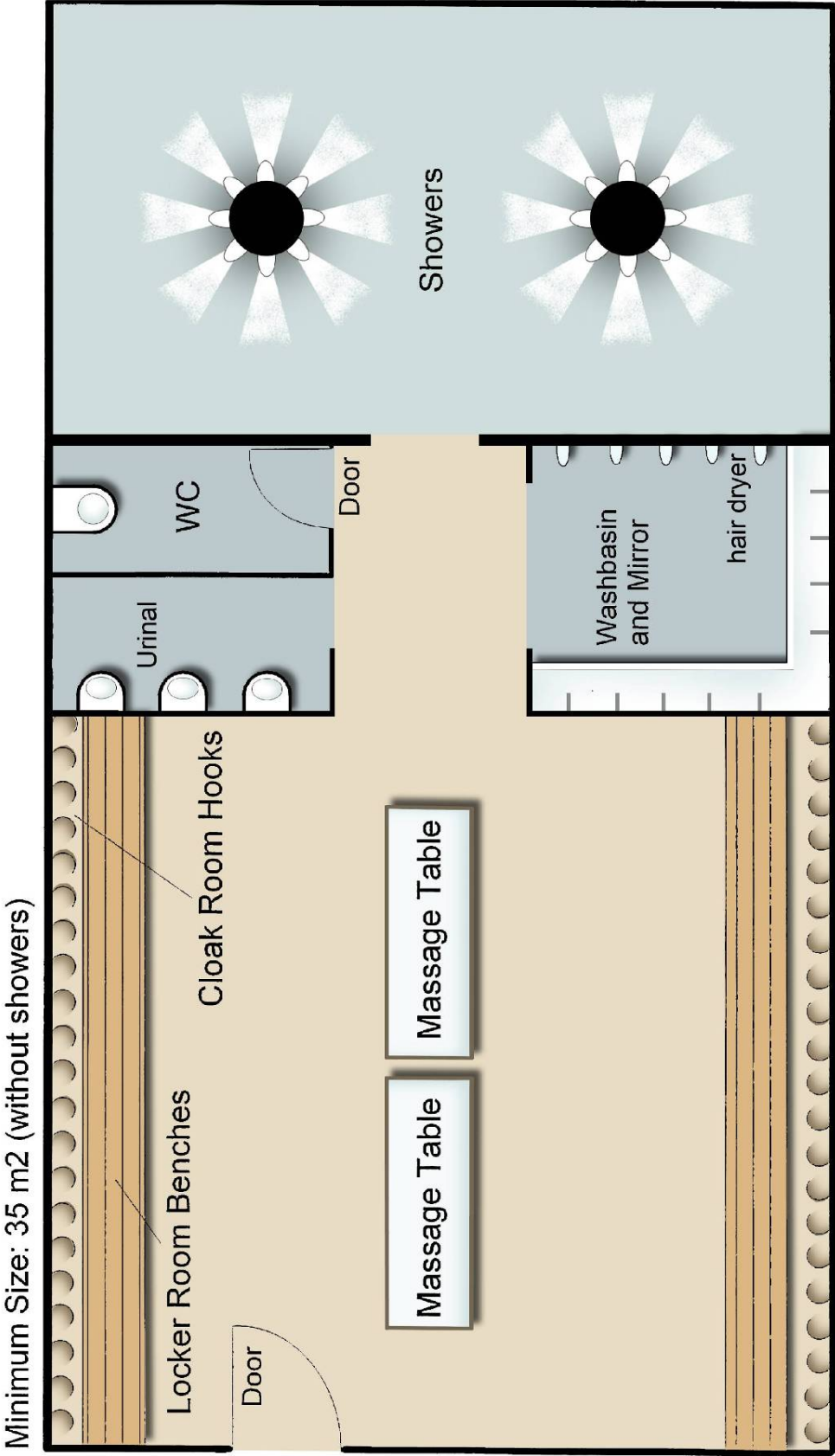
Basic Handball Hall Utilization Stand/Upper Floor Level Press/VIP Routing



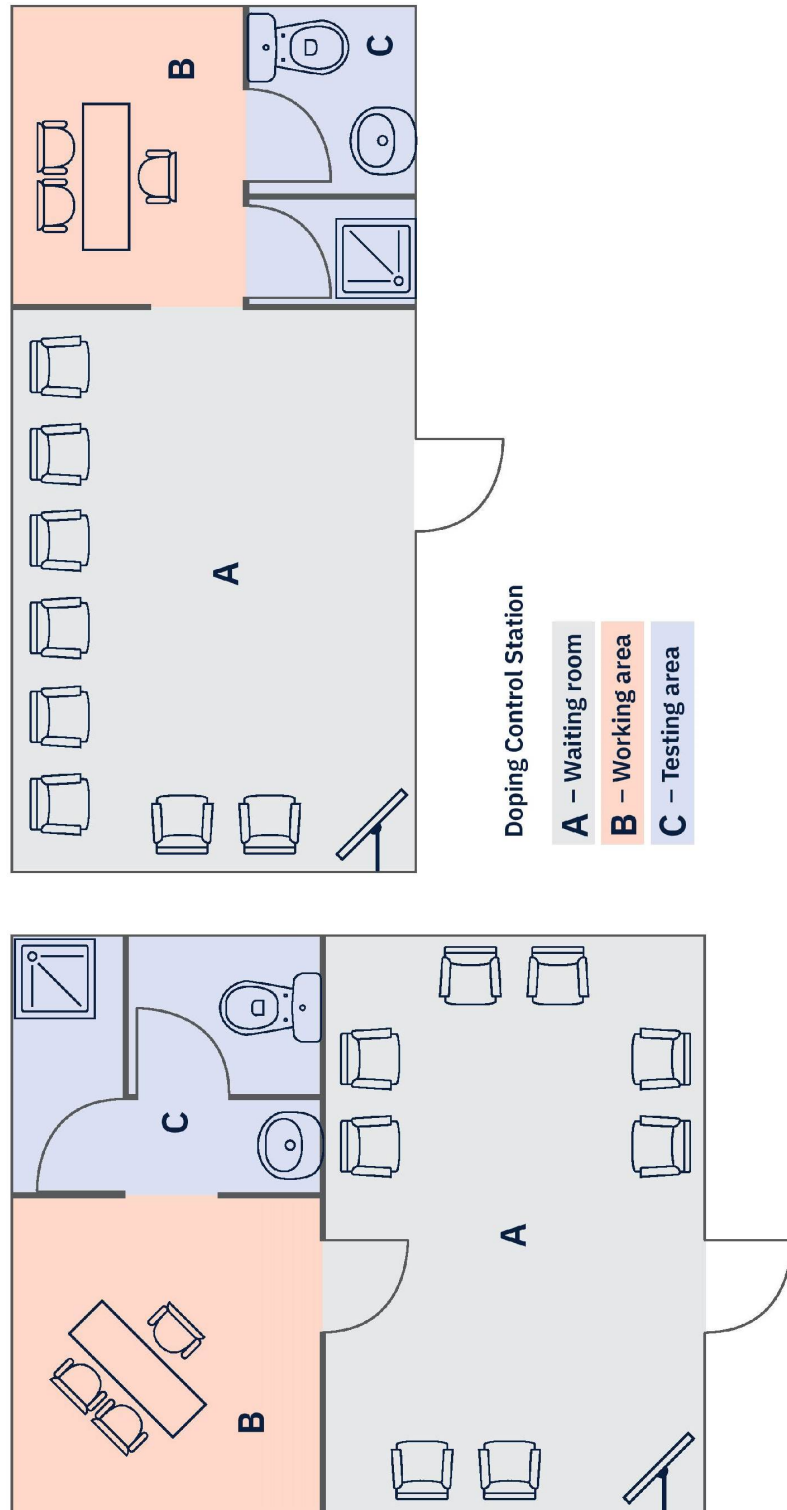
7.4. SPACE UTILIZATION PLAN—DRESSING ROOM

Basic Handball Hall Room Utilization

Dressing Room

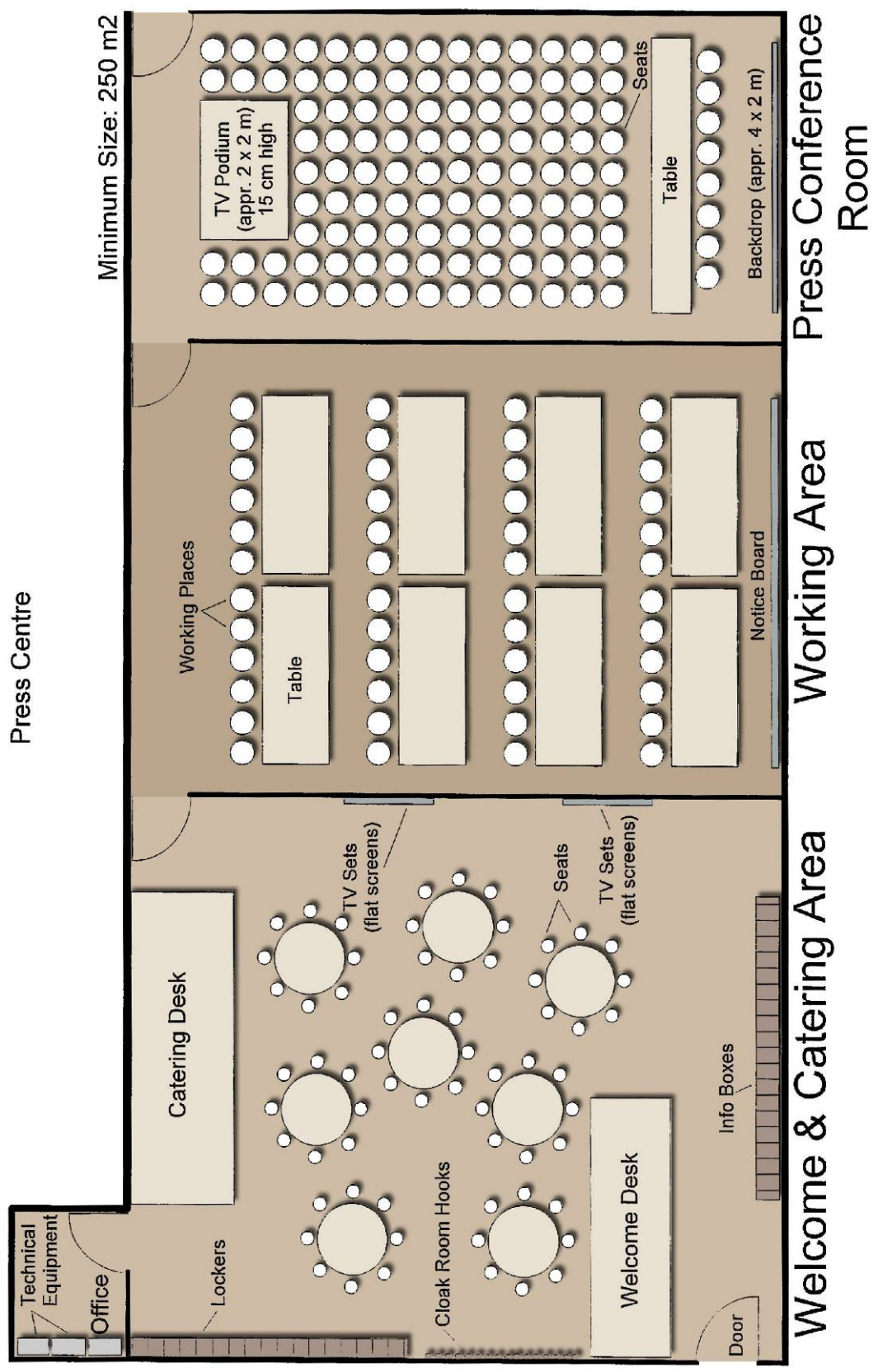


7.5. SPACE UTILIZATION PLAN – ANTI-DOPING ROOM



7.6. SPACE UTILIZATION PLAN — PRESS CENTRE

Basic Handball Hall Room Utilization



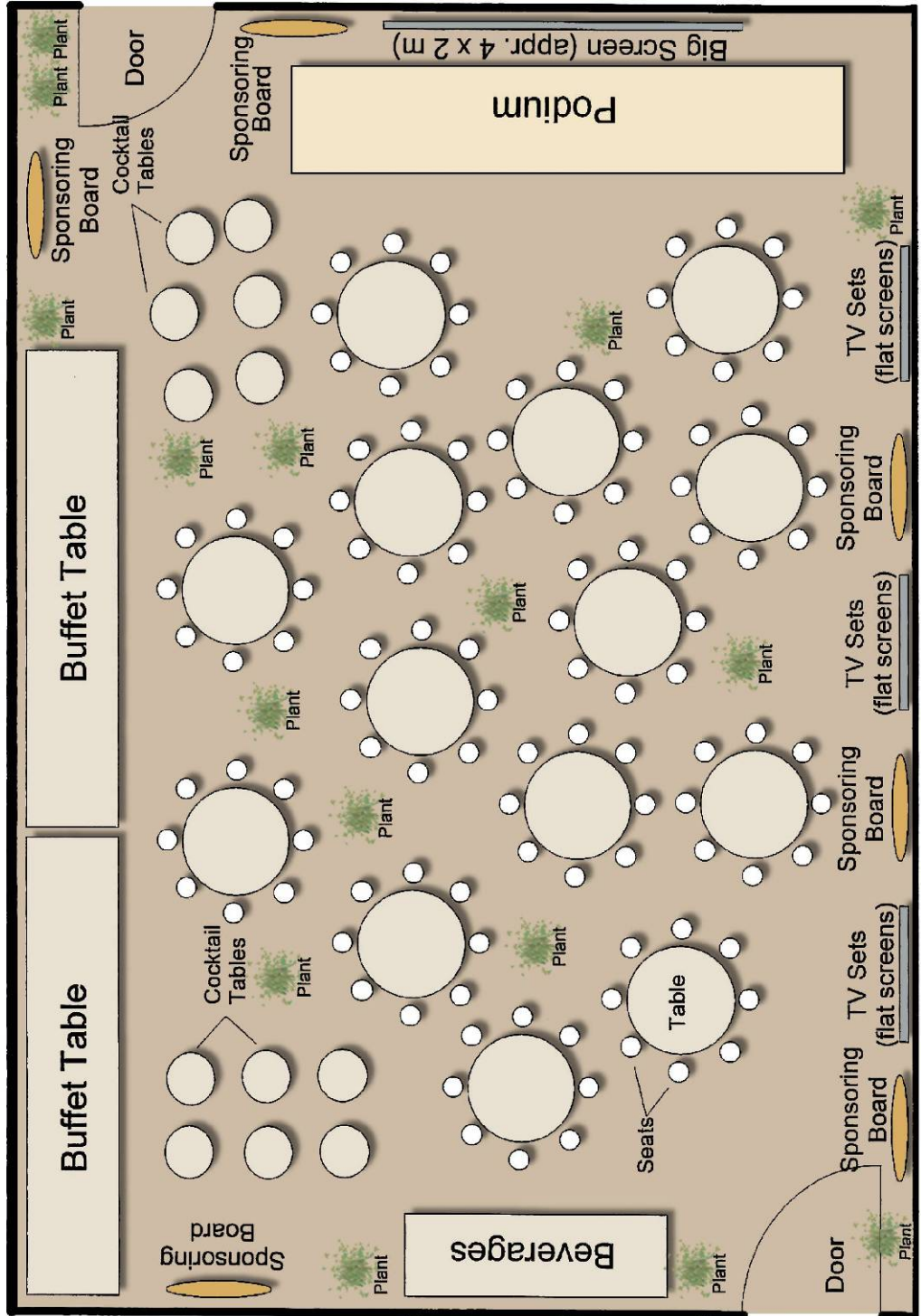
7.7. SPACE UTILIZATION PLAN – VIP ROOM

Basic Handball Hall Room Utilization

VIP Room

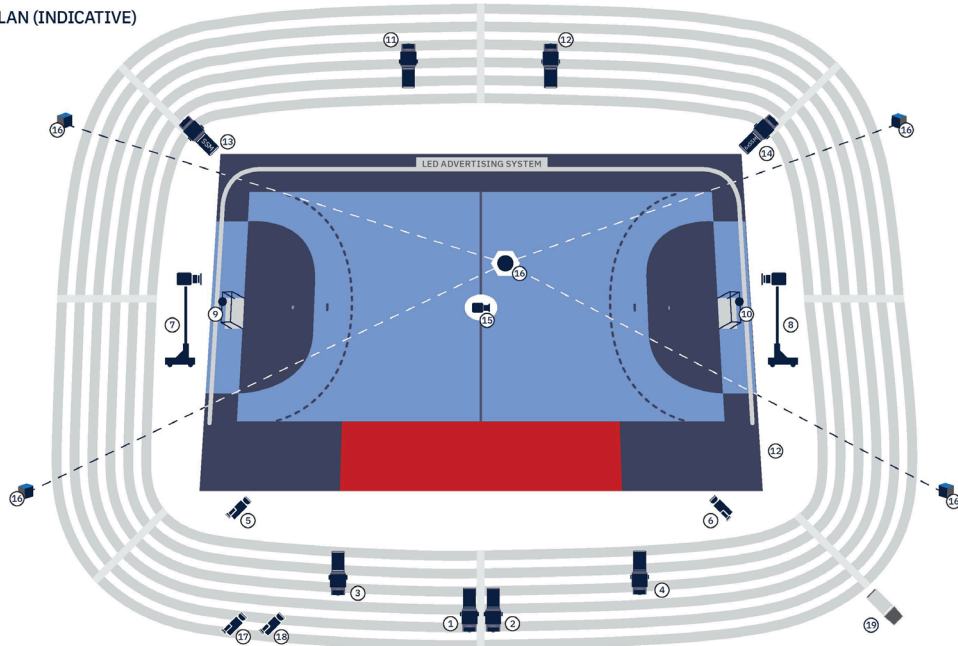
Minimum Size 150 m²

[ECh Final Weekend Additional Facilities (minimum Size 700 m²) - separable Area & movable Fences]



7.8. TV CAMERA POSITIONS

CAMERA PLAN (INDICATIVE)



#	Position	Description	#	Position	Description
1	Main Camera	Upper level, aligned with centre line, main camera	13	SSM far left	Court level
2	Main Close-up	Next to main camera, main close-up	14	6x SSM far right	Court level
3/4	9m SSM left/right	Approx. aligned with 9m, lower level (below MCP)	15	Hot Head	Above centre circle, mounted to cube or truss system
5/6	Handheld 1/2 left/right	Court level, close to near corner, moving cameras	16	Cable Cam	Point-to-point system or 3D system, winches to be considered
7/8	High Pan left/right	High behind goal with lens through catch net	17/18	Handheld 3/4 (LTE)	Operating from the stands, moving cameras
9/10	In-goal left/right	Attached to the goal/net structure	19	Beauty Cam	Remote camera, high level, diagonal view of playing court and stands
11/12	Reverse left/right	Opposite of team benches in the lower stands			

8. ARENA CATEGORIES AND CERTIFICATION

Based on the manual at hand, the EHF will develop a system for classifying arenas in categories upon request by a National Federation and after a technical evaluation of the building.

Details will be published in separate guidelines regarding arena categories.