



# Archery Facilities: Guidance & Specifications



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### *Disclaimer*

*The following guidelines are based upon Archery GB and World Archery recommended standards. They have been discussed with national judges from the sport and subsequently endorsed by Archery GB. They cannot, however, guarantee complete safety in all circumstances. Archery as with many other sports, in particular those involving projectiles of one form or another, has inherent dangers. It is a sport which requires the application of common sense and discipline as much as it does adherence to guidelines. If approached in this manner and where the following standards are carefully applied participants should enjoy their involvement in a perfectly safe environment. Archery GB, World Archery, KKP and Good & Tillotson do not, however, accept any liability for incidents which may arise for participants, spectators or others whilst participating even when following these guidelines.*

### Introduction

#### A growing sport

Archery is a fast growing sport in the UK. More than 43,000 people are members of clubs which operate under the auspices of Archery GB, the sport's national governing body. Many more shoot informally at activity centres, holiday parks and outdoor shows.

It is popular, flexible, easy to organise, straightforward and low cost to accommodate; both indoors and outdoors.

Sport England research shows that many people would like to 'have a go' at archery. Archery GB and Sport England both contend that there is a large, untapped market for casual/non-club participants.

#### Guidelines and specifications

This succinct guide has been designed to encourage and assist those considering whether or not archery could be an activity they could offer or help to provide. In terms of indoor archery this includes managers of existing sports and leisure centres or owners/operators of multi-sports venues.

Outdoor it covers how to deliver the sport in settings that already cater for other activity such as rugby, football or cricket plus less common settings such as golf driving ranges. It also works for agencies which provide holiday and recreational activity and for architects involved in venue or facility master-planning. It outlines the spatial requirements and key operational considerations to take into account when:



- setting up bespoke facilities for indoor or outdoor archery;
- fitting the sport into existing leisure centre spaces;
- including archery alongside rugby, football, golf, athletics and other sports;
- using former warehouses, industrial units, barns and even old mills to set up a club or as a commercial operator;



The information explains how to make it cost effective for facility/venue operators as well as affordable for clubs and participant groups.

Valuable layouts, across a wide range of settings, illustrate how archery can fit into plans by architects, commercial operators, managers of leisure facilities and people considering alternative uses for buildings or pieces of land.

Plans cover practical issues such as the need for secure storage, changing rooms, toilets, meeting rooms and car parking.

In common with all sports, safety is a factor when providing archery. This guide shows how (as numerous schools, local authorities and other operators have demonstrated) by following a few simple common sense 'ABC' rules, it is possible to remove virtually all such concerns.

### Why archery?

Archery is not just for experts. It is, arguably one of the world's most inclusive sports. People from eight to eighty can take part and it attracts men, women, boys, girls and participants with or without disabilities all of whom can enjoy it recreationally or competitively alongside each other

As a safe, attractive and inclusive sport that is easy to provide. It is also one that, when well-managed, makes good business sense to offer. In archery, as with many leisure activities, demand is as much a function of supply and awareness of opportunity as the reverse.

In any of a wide range of situations the guide illustrates how archery could be the right solution for you. It appeals to all markets and levels, from elite and Olympic performers to recreational participants whose sole focus is on having some fun as part of a day out. It does not require high levels of fitness to simply have a go.



From an operator's perspective it can be viewed in a range of ways from corporate days offered with (say) clay pigeon shooting, high ropes or four wheel drive based options or as a supplement to an existing offer at a golf driving range, athletics track, tennis club or pitch venue.

### Where does archery take place?

Archery can be done almost anywhere. Typically it takes place:

- On outdoor pitches
- In sports halls (of all shapes and sizes).
- On school sites (indoors and outdoors).
- On golf driving ranges.
- In adapted buildings: warehouses, mills and barns

This guide focuses on indoor and outdoor target archery, outlines the market for 'short-form' versions and considerations generic to all forms. An extensive series of drawings is appended; they cover the options referred to and show how it can work in almost any indoor or outdoor environment.

Drawings provided also detail with regard to practical considerations such as changing rooms, toilets, car parking, kitchen, office and meeting rooms and secure storage. Large scale drawings are also available as separate pdf(s). Designs range from the:

- ideal modular build allowing operators or new clubs to expand in line with the growth of their business; to;
- adaptations of existing buildings and fields.

Spatial requirements shown are drawn from existing Archery GB and World Archery guidelines. This guidance has also been reviewed by international standard judges.

The highly inclusive nature of archery makes it particularly important that facilities are, where possible, DDA compliant. Information about this can be obtained from your local authority or you can refer to the [Disability Discrimination Act 1995](#) and the [Equality Act 2010](#)).



### Indoor archery

#### Shooting distances

The general consensus is that, in keeping with the competition distance as stipulated by Archery GB and World Archery, 18m is the appropriate length for a range. Shooting distances are not, however, fixed and the broad view among archers is that 'further is better' – ideally to 25m or more. Despite these ideals many clubs shoot at distances that fall below 18m and will do so if it guarantees indoor shooting time.

In summary, there are three main indoor target archery shooting distances:

- Recreational 15m.
- World Archery/AGB Standard 18m.
- Extended 25m+.

#### Space around the range

In addition to the target distance there should be an allowance for three 3m to 5m spaces, before the 'shooting line', for equipment, waiting and shooters. Many buildings also necessitate a backstop net to the rear of targets, with a space of 3m.

This totals 30-36m for a target distance of 18m and equates well to existing standard 33m x 18m four court sports halls and recent Sport England guidelines (2012) for 34.5m x 20.0m x 7.5m halls.

Although experienced archers prefer to shoot over longer distances (18m and 25m), a recreational version of the sport has a role at introductory level and/or for those who wish (for reasons associated with age, physical ability, to learn/shoot over a shorter distance or convenience) to enjoy archery but may not be suited to the 'full sized' version.

A three court hall (typically 27m x 18m) can enable the 15m shooting distance and meet Archery GB minimum guidelines. This can work well because demand for sports such as 5-a-

side football, netball and basketball is normally for larger halls.

#### Use of alternative buildings

Archery has the potential to bring into use spaces such as old mills, unused warehouses, barns etc. In fact many such premises will be much longer than 18m in one direction (allowing longer range indoor shooting) but could also (obviously at different times) be used on the short axis to create learning and/or commercial option with a higher number of targets.

#### Minimum club standards - Archery GB:

The minimum AGB recommended indoor standards are a:

1. Heated and well lit hall at least 23m long and 20m wide
2. Fully accessible, ideally heated, changing room or clubhouse which has access to toilets.
3. Secure storage where archery equipment can be kept overnight.
4. Notice board or signpost where the archery club can advertise its activities.

### Outdoor archery

Operating standards contribute to the creation of a safe environment. They include minimum spatial standards, site orientation, backstop, overshoot area, grass length, public access, changing facilities and secure storage - all described in Archery GB and World Archery guidelines<sup>1</sup>.

On the presumption that site management of those taking part in archery meet required safety levels (see below) spatial standards are as follows.

The minimum outdoor archery standards recommended by Archery GB are:

- 1. A grass sports field at least 113.75m long and 37.62m wide, where a back stop net is not used. Where a back stop net is used at least 40m and 20m wide.**  
*(Details are show in the diagrams that follow and described on the back cover; see also overshoot areas).*
- 2. Grass that is flat not sloped, short, well kept and well drained**  
The grass should be no longer than 5cm high.
- 3. A field that does not allow access to the general public except at specific and defined points**  
Access must not be allowed other than at specific defined points. Normally, sites with a public right of way should be avoided.
- 4. A fully accessible changing room, or club house which has toilets. This should be heated.**
- 5. A notice board or sign post where the archery club can advertise their activities.**

<sup>1</sup> Site details may affect insurance premiums as their primary concern is to meet safety regulations.

- 6. A secure storage area where archery equipment can be kept overnight.**



#### Additional points to note

##### *Overshoot areas*

The overshoot plus target area must be a minimum of 100.1m (110yds) with a target distance of up to 54.5m (60yds).

For shooting distances of greater than 54.5m (60yds) the overshoot area should be an additional 50m (55.3yds) beyond the target line.

##### *Orientation*

The range should ideally face due North, with a +/- 20° variance. In practical terms the orientation may have to suit the available space but this may preclude shooting at certain times of day depending on lighting conditions.

##### *Extended length shooting*

Mechanical release aids can enable archers to shoot longer distances and require the length of the range to be increased by a further 36.50m

##### *High level competition*

Specific guidance about the facilities and related accommodation need for high level competition is available from Archery GB and/or World Archery etc. (see AGB's Rules of Shooting).

### Ancillary facilities

The ancillary facility needs for archery range from essential to desirable; from toilets and changing areas to car parking, catering or vending and meeting rooms.

#### *Toilet facilities*

Toilet provision should be calculated on likely maximum occupancy of the building in accordance with BS 6465-1: 20062. The norm, by gender, is based on:

Male:	One WC, one washbasin, one urinal per 15-20 users
Female:	One WC per 7-10 users, one washbasin per 15 users.

When hosting a tournament or large numbers at an outdoor venue, it is not uncommon to hire additional portaloos.

#### *Car parking*

It is not possible to stipulate a standard or ratio for all circumstances and locations. Where archery takes place at a multi-use sports centre or adapted older building car parking may already be provided. A bespoke facility may need parking spaces as a condition of planning permission. The needs of others, such as local residents or businesses should also be considered.

#### *Storage*

Bows and arrows must always be securely stored. Facility operators should be aware that modern archery butts are lightweight, do not shed straw and are easy for their own staff or club volunteers to move and assemble. Archery facilities are now easy to set up/demount quickly and efficiently.

#### *Ancillary facilities*

Ideally (whether indoors or outdoors), archers should have access to a changing room(s), seating and a kitchen area.

### Archery equipment

It is difficult to be specific about exactly what is needed as this reflects:

- Whether provision is indoor or outdoor.
- The number of people to be catered for (at any one time).
- Distances being shot.
- Whether recognised competitions are to be hosted or the venue is for informal / recreational participation.

Indoor and outdoor shooting tend to take place at different times. A club/venue may, thus, be able to use its equipment in both environments. The basics for the sport indoors include bows, arrows, targets and backstop netting. It does not need to be expensive and is simple and easy to purchase, set up and store safely.

Tournament shooting is generally based on four archers per target. Providing for up to 25 beginners may require c. 10 targets. The number rises by an average of one for every 3-4 additional archers. A similar approach can be adopted when catering for corporate events/training programmes.

#### *Outdoor archery*

Equipment for outdoor archery includes:

- Target stands, numbers and flags.
- Target faces (initially a roll of 100 x 122cm and 100 x 80cm faces).
- Shooting line tape or ground markings.
- Tape measure to check distances.
- Equipment to secure the targets safely - pegs, guy ropes, hammers etc.
- Ropes for roping off the shooting area.
- Safety notices (appropriate number).
- Metal detector(s) for lost arrows.
- Backstop netting

Competitions/events may also require:

- Scoreboards and scorecards.
- An Archery GB rule book<sup>3</sup>

<sup>2</sup> See Sport England guidelines on sports hall design and layouts (2012) and changing facilities.

<sup>3</sup> Archery GB Rules of Shooting: March 2013 & The World Archery Rule Book.



### Archery: a safe sport

Safety in Archery is straightforward and built around common sense principles. The fundamentals are:

- Never shoot alone
- Ensure that indoor halls conform to health and safety regulations on target positioning (see appended layouts).
- Never allow people to stand ahead of the shooting line (be aware of, for example, the location of sports hall balconies).
- People must shoot in one direction only - at the designated target.
- People can only shoot when permitted.
- Only allow people to collect arrows or scores when specifically permitted.
- Ensure that people always handle bows correctly and responsibly.
- Always store bows and arrows securely (and preferably separately).

#### *Never shoot alone*

Club members are generally precluded from shooting alone and it is suggested that a similar principle is applied to all venues. This is most likely to be deemed a reasonable expectation in order to cover insurance requirements.

#### *The shooting line*

There should be a clearly visible straight line on the ground, called the shooting line. Archers must shoot their arrows only when standing on or astride this line. There must only be one shooting line for all archers, even if they are not shooting the same distances; targets may be placed at different distances for different target lanes. There should be **no** access ahead of the shooting line while shooting is in progress.

#### *Shooting direction*

Archers must shoot at the target directly opposite their shooting position. This must be in one direction only.

#### *When to shoot and when to collect arrows and scores*

There should be a definite time-slot for shooting. Archers must not raise the bow arm to shoot until the signal to start shooting is given.

Then there is a period for archers to go to the targets, assess scores and collect arrows. This pattern is then repeated throughout the session. The way to create time-slots for shooting is to use sound signals, for instance a whistle or an electronic timing system.

There should be one sound signal to go to the shooting line and to start shooting, and two sound signals to stop shooting and to collect arrows.

#### *Handling bows correctly*

Archers should aim continuously toward their target when drawing their bow. The bow must not be drawn in such a way that if the string was accidentally released the arrow would fly out of the safety zone.

These rules must be followed at all times, whether practicing or at a tournament. They are the preconditions for safe archery.

#### *Storage*

Bows and arrows must be securely (and preferably separately) stored.

#### *Backstop netting*

Backstop netting is mainly used indoors but can never guarantee to stop all arrows. Netting will only slow arrows down, never is it guaranteed to stop arrows.

Backstop netting is hung, loosely, behind the targets and in front of walls. The netting will act as a cushion to prevent arrows from impacting on the wall behind. It should not be relied upon as the only safety precaution, and therefore under no circumstances can additional activity take place behind netting.

Outdoors, netting can be erected to aid with collection of arrows when taking part in beginner's or taster sessions. Once again,



activity should not take place in the overshoot area behind the targets.



Archery netting is a tough, close woven mesh and available in green or white. It can be purchased from most archery retailers and sports equipment retailers. It can be ordered in widths suitable to the venue and usually is 3 metres in height to hang from above the targets to the ground. It is never to be hung tight, as this reduces the stopping power of the netting.

### *Recording and dealing with accidents*

Accidents in archery are rare but it is still important to maintain an accident book to record any incidents. Venues should also maintain a fully stocked first aid kit in an easy to find location. Ideally, a trained first aider should be on site at all times.

## **Drawings and descriptions**

### *1. Basic spatial requirements (shooting and safety)*

- a. Before the shooting line.
- b. Between the lines.
- c. Shooting length – indoor and outdoor ranges.
- d. Within the range.
- e. Use of vertical baffles/boards.
- f. Building and window heights.
- g. Space between and around outdoor ranges.
- h. To the back of the range – indoor and outdoor considerations.

### *2. Indoor – bespoke facilities*

- a. A purpose built hall that meets Archery GB's standards:
  - at a competition distance of 18m.
  - with a 25m shooting distance.
- b. Extension options as your club / business grows.

### *3. Multi-use sports halls*

The above options in a range of settings; for example, shown against a/an:

- a. Four court hall.
- b. Eight court hall.
- c. Three court hall.

### *4. Sport specific halls*

- a. Indoor cricket facility.
- b. Indoor bowls (pitch) centre.

### *5. Older, disused and underused buildings*

- a. Victorian mill.
- b. Disused warehouse or retail unit

### *6. Outdoor - bespoke facility*

- a. A standard range.

### *7. Outdoor - adaptations*

A standard outdoor range relative to a:

- a. Football pitch
- b. Rugby pitch.
- c. Golf driving range.

### *8. The complete club layout*

- a. To comprise a/an:
  - outdoor range,
  - indoor hall,
  - changing rooms,
  - clubhouse,
  - storage and
  - car parking.

### 1. Basic spatial requirements (shooting and safety)

*a. Before the shooting line*

Archery GB guidelines stipulate three zones before the shooting line; they allow for equipment, waiting and shooting. Ideally each of the areas should be 5m in depth although for many clubs this is impractical given other space considerations and throughout the drawings that follow a space of 3m has generally been adopted (figure 1).

*b. Between the lines*

Archery GB's minimum standards refer to a space per archer of 80cm. However, in the following drawings 1.2m per person has been adopted. This may be reduced to the minimum if required to accommodate more archers but 1.2m is felt to be preferable.

*c. Shooting length of the range*

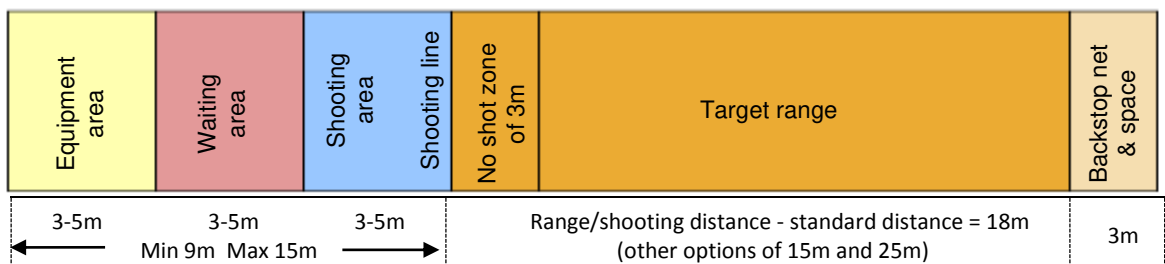
Competition standards stipulate a shooting distance of 18m at an indoor range. This complies with AGB and World Archery requirements for standard indoor archery at a competition level; however, it is a commonly cited wish of archers to be able to shoot over longer distances and a 25m firing distance is an ideal that is shared by many.

*d. Within the range*

Forward of the shooting line there is a 3m line which indicates a 'no shot' zone. Should an archer's arrow drop within this area it is deemed not to have been fired.

In the event that more than one distance is being shot at the same time within a range they must all use the same shooting line – no one should ever be stood in front / forward of someone else with a bow. The same venue may, for example, be in use for recreational archery at a distance of 15m, standard competition at 18m and over an extended distance of 25m – irrespective of the distances involved, archers should be stood alongside and never in front / forward of one another.

Figure 1: Key zones / spaces



*e. Use of vertical baffles/boards*

In certain indoor settings there may be a need to utilise boards/baffles to the side of the range or, dependent on the building, between lanes if there are protruding columns/ pillars that could be hit by /deflect an arrow (see figure 2). This will, however, inevitably reduce the shooting width of the range.

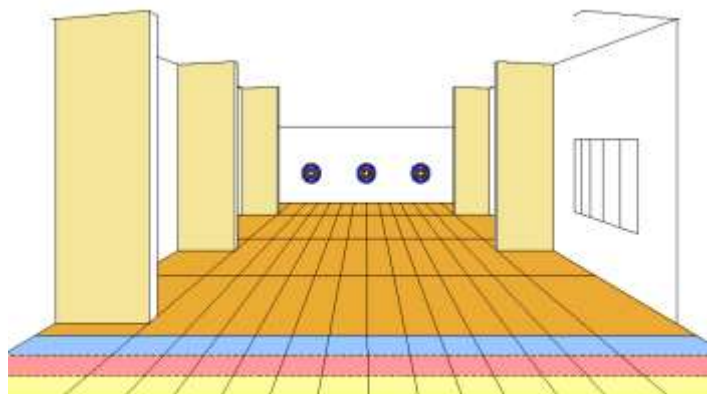


Figure 2: Vertical/lateral barriers

*f. Building, window heights and lighting conditions*

As a general rule an indoor range should have an internal clearance of 3m or higher.

Window heights will inevitably vary, especially where older properties are to be adapted. Consequently, side windows below a height of 2m should be protected by a cover/shield.

Indoor lighting is not as significant an issue as might at first be thought. Outdoor lighting on a good clear day is around 10,000 lux, however, indoor levels are often much lower. For example, the lux level for badminton, 500, is significantly higher than that required for archery, which is as low as 50 in the shooting zone and 100 at the target<sup>4</sup>.

*g. Spaces between and around outdoor ranges*

Similar to the above, irrespective of shooting distances, there should only be one shooting line and archers must never stand forward of it.

It is good practice to have space between 'ranges' for different distances when shooting outdoors (see figure 10) – ideally this will be a separation of 10m. The diagram also shows appropriately sized side exclusion zones/ buffers towards the outside of the range.



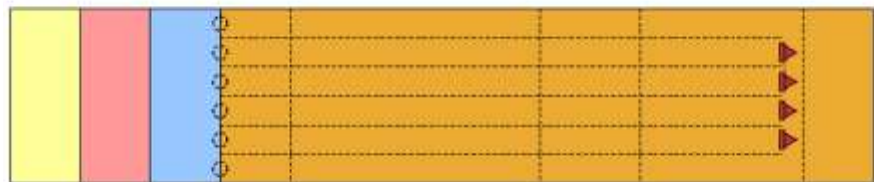
*h. To the back of the range*

Indoor archery

– a backstop net is often used to 'catch' arrows and thus to protect both arrow and wall from collision damage. This is obviously important in convincing venue managers/owners to make their premises available. Irrespective of the presence of a backstop net no-one must ever enter this zone while shooting is in progress.



5 X 37 M PROJECTILE HALL (1250mm WIDE LANES)  
MIN HEAD HEIGHT 3000mm



7.5 X 37 M PROJECTILE HALL (1250mm WIDE LANES)  
MIN HEAD HEIGHT 3000mm

*Figure 3: Spatial layout for a projectile hall*

*Note: See appendices for fully annotated versions of all drawings.*

Outdoor archery

– dependent on the lie of the land the 'overshoot area' can vary from 50m to as little as 5m, if for example, you are firing towards an embankment. Natural backstops and buffers are able to play an important role in site safety and thus size.

<sup>4</sup> Source: Lighting Consultancy and Design Services and (badminton only) Sport England 'Artificial lighting' appendix to guidance on 'Affordable sports halls'.

### 2. Indoor – bespoke facilities

#### a. Purpose built halls

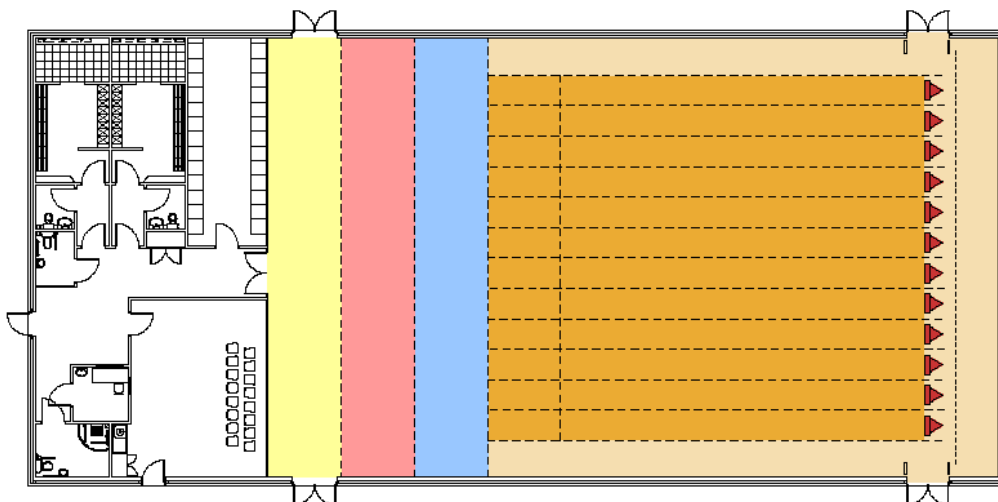
The following drawings outline the indicative spatial requirements for an archery hall built to Archery GB standards as outlined in section 1. It should be stressed that, in common with the other diagrams within this guide, layouts are illustrative and intended to act as a guide rather than rigid instructions. The designs combine a:

- 18m or 25m shooting distance.
- backstop net.
- waiting, equipment and shooter area of 9m.
- lockable storage area.
- viewing, kitchen, meeting area.
- changing rooms, showers and toilets.
- changing area, shower and toilet for disabled members.
- general office area.

Many sports halls will offer (or have the potential to offer) this level of provision. However, if ancillary facilities are provided in the form of a clubhouse. It should be designed to [Sport England: Pavilion & clubhouse design guidelines](#) and be DDA compliant (see earlier). The extension of shooting distance is accommodated by a standard 6m modular / panel extension which will take the shooting distance up to 24m (or 25 if 1m is sacrificed in the area before the shooting line).

With lanes shown at 1.25m the space accommodates 12 lanes; if reduced to the minimum space of 80cm this would increase to 18 lanes.

Figure 4: Layout for a bespoke hall and associated changing etc. facilities – shooting distances of 18 or 25m.



#### b. Extension options as the club / business grows.

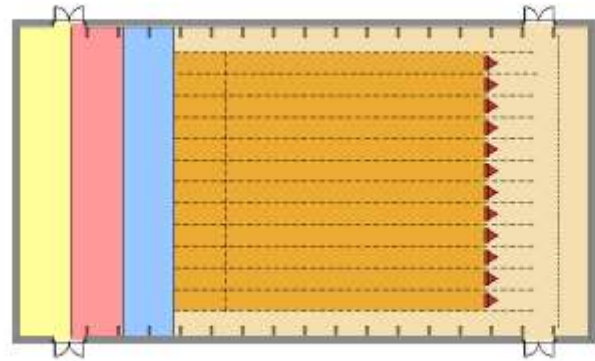
Alternative layouts depicting the same hall as that shown above with extension(s) to accommodate more members as your club/business increases in size are shown in the accompanying appendices.

### 3. Existing multi-use sports halls

The layouts described in section 1 can also be accommodated in a range of existing buildings, a number of which are shown below. These typically include multi use sports halls, indoor cricket and bowls facilities and old mills and warehouses.

*a. A four court hall (18 x 33m)*

As with all halls shooting must be orientated away from doors and open balconies and doors not required for health and safety during the archery session should be locked (for large scale drawings see appendices).



*Figure 5: Archery in an existing four court hall*

*b. An eight court hall (37 x 33m)*

At its simplest this will double the number of archers but a larger hall may also be used to accommodate archers of differing standards or with different needs.

However, if two 'ranges' are to be operated at the same time they must be carefully managed. This is one of the skillsets and training areas that may be covered by Archery GB and for which appropriate qualifications can be obtained (see appendices for layout drawings).

*c. A three court hall (18 x 27m)*

The use of a three court hall will limit the available shooting distance to around 15m; this is below Archery GB's and World Archery's standard recommended competition distance of 18m.

However, many archers already shoot at shorter distances such as this and it is also suitable for younger and older participants who may lack strength, beginners who are learning and recreational archery for those who simply want to 'have a go' and would be more 'successful' over a shorter distance. In this respect a 15m range has many of the same characteristics as short forms of many other sports.

From the perspective of a local authority leisure services manager, for example, three court halls tend to be in less demand for activities such as five a side, basketball and netball. Consequently, archery may present an opportunity to both cater for a potential local market demand and make best use of available building stock (see appendices for drawings).



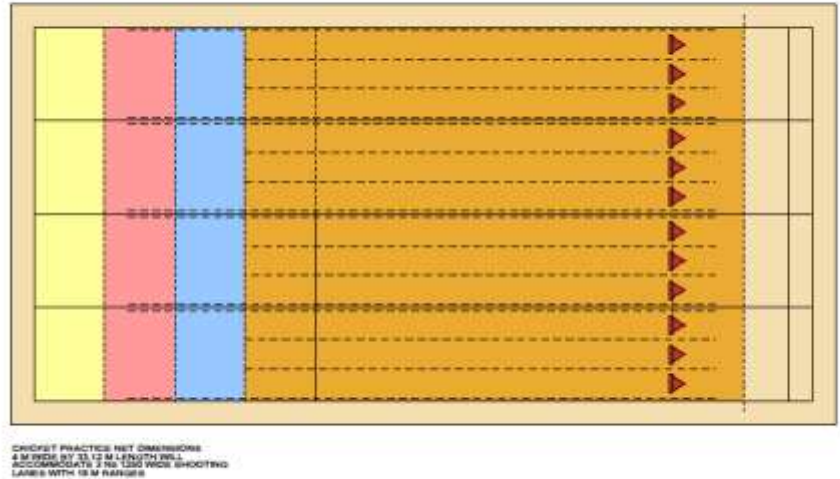
### 4. Existing sport specific halls

Archery has the potential to be compatible with a number of sport specific indoor facilities such as cricket (nets), indoor bowls halls, projectile halls and even indoor athletics straights. While floor surface protection can be guaranteed by the use of roll out matting this is an added complication for operators. Discussion with centre managers suggests that in most instances arrows are unlikely to damage floors as they normally 'skid' on landing rather than 'planting'.

#### a. Indoor cricket nets

Figure 6 shows an archery range overlaid on a four lane indoor cricket space (33.62m x 20.04m and 7.7m high - based on SE guidelines).

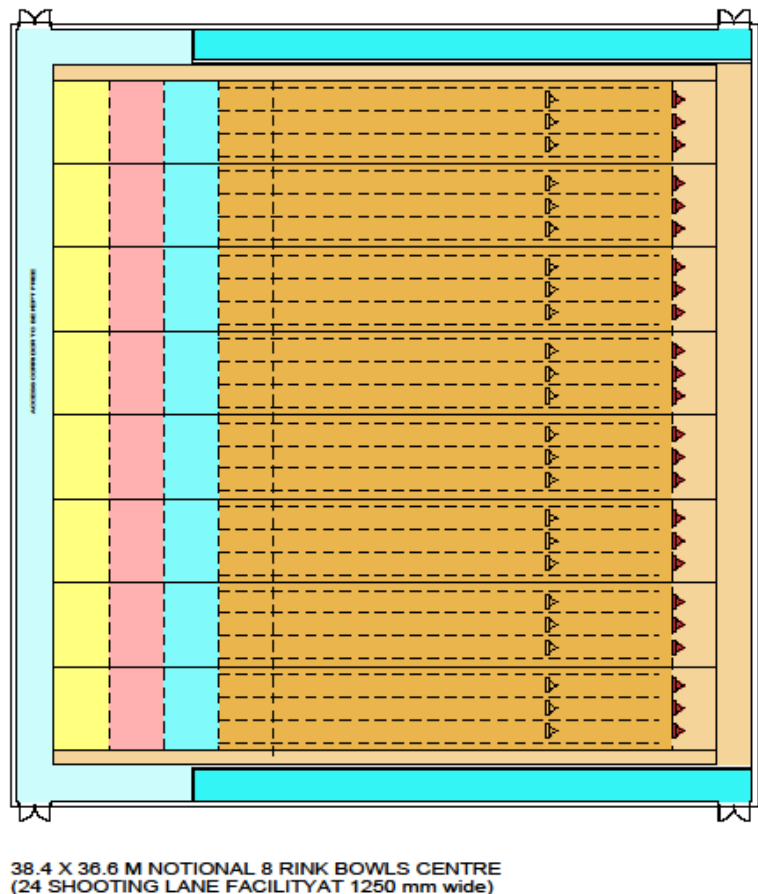
*Figure 6: Archery within an indoor cricket net facility.*



#### b. Indoor bowls centre

Figure 7 is based on an eight rink hall with a playing area of 38.4m x 36.6m. This is clearly sufficient for an 18m shooting distance for archery. Bowls centres are also likely to already have the desired level of changing rooms, access for members with a disability and a range of other attributes which, in many respects, mean that they have the potential to be an ideal facility.

*Figure 7: Archery over an indoor bowls 'green' with eight rinks.*



### 5. Older, disused and underused buildings

Archery need not be confined to new premises and/or sport specific facilities. Similar to paintball and other uses of older urban buildings its spatial requirements are a good fit to premises such as disused warehouses, former commercial premises, ten pin bowling alleys and even Victorian mills. The following drawings illustrate archery in two such settings and are based on actual building floor-plans.

#### *a. Adaptation of a Victorian mill*

Figure 8 shows how a 19<sup>th</sup> Century mill could be used alongside a range of existing activities. The alternative layouts accommodate varying shooting lengths, while the design also incorporates vertical baffles (see figure 2) to prevent arrows from striking pillars. The scale of the premises is significant and even at 1.25m per lane it could accommodate up to 28 archers - at 0.8m per person this would rise to more than 40 people (see also alternative layout in appendices to accommodate shooting of distances up to 45m).

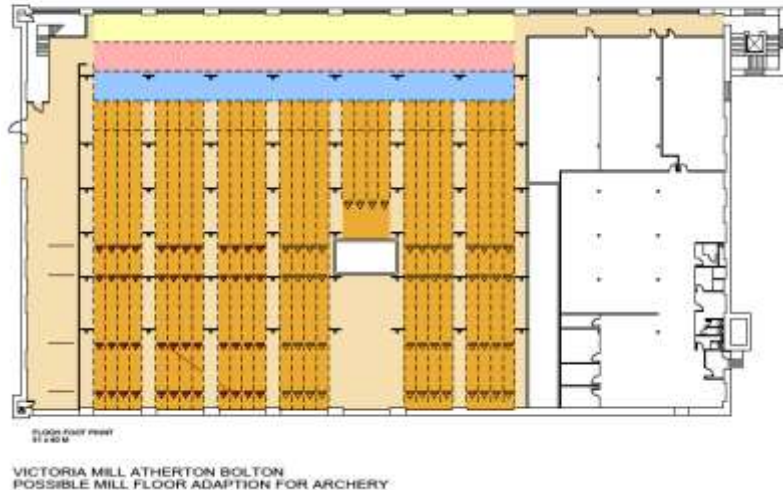


Figure 8: Converted mill with layouts from 15m to 30m (max)

#### *b. Adaptation of a disused warehouse or retail unit*

Figure 9 shows how a disused warehouse, former retail outlet or other commercial premises can be converted for use as an archery centre. Based on an actual retail warehouse the drawing also shows the layout of the existing office spaces etc. and allows for the shooting of a variety of lengths up to 35m. The design incorporates vertical baffles (see figure 2) to prevent arrows from striking wall projections.

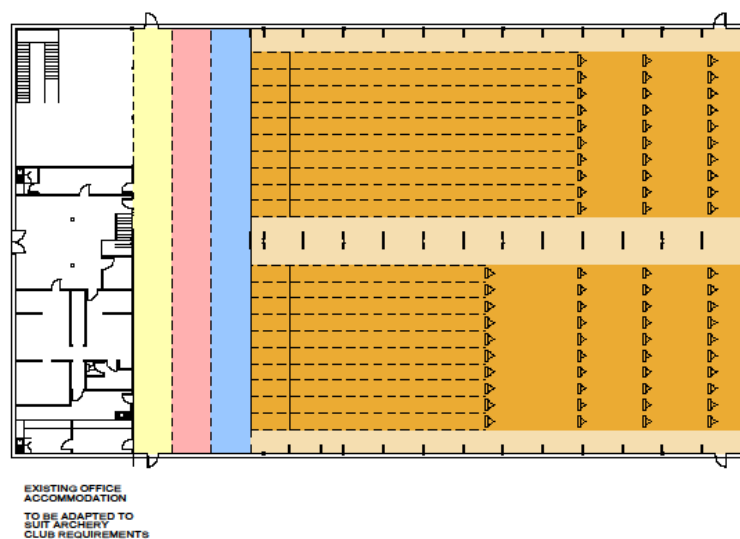


Figure 9: A former retail warehouse (50 x 20m) - this property allows for shooting ranges of up to 35m



### 6. Outdoor - bespoke facility

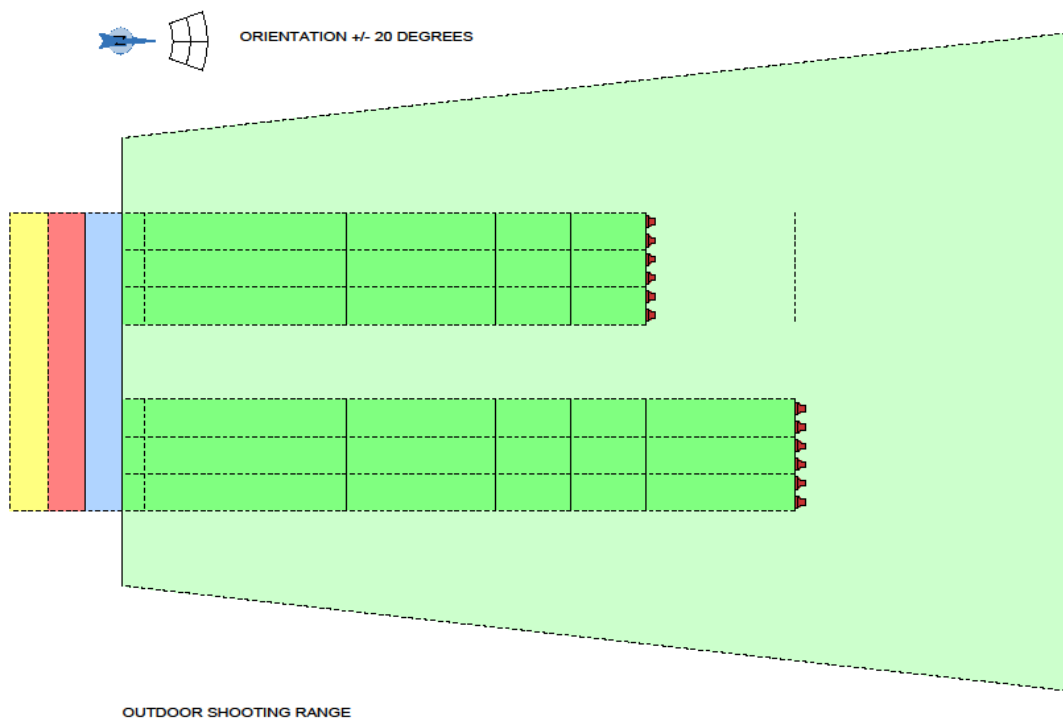
The ideal for many archers is to shoot outside; the following drawings range from a bespoke facility catering just for archery to the inclusion of archery alongside a range of other sports and in multi-sport settings. This is followed by the ideal for many archers of a combined indoor and outdoor facility.

Figure 10 depicts an outdoor range with three 5m zones before the shooting line. It shows two parallel 'ranges' with shooting distances of up to 90m. However, both ranges operate from the same shooting line to ensure that no archers stand ahead of one another whilst shooting. There is also an overshoot area of 50m and appropriate side exclusion zones. The range is orientated in a northerly direction +/- 20 degrees, this being an appropriate response to the passage of natural light for a facility in the northern hemisphere.



As outlined earlier, many of these distances can vary (usually being shorter) dependent on the lie of the land and the existence of natural barriers such as embankments.

*Figure 10: Layout of bespoke outdoor shooting field for target archery.*



### 7. Outdoor – adaptations

Archery is compatible with many field sports such as football, rugby, cricket, lacrosse and athletics at both training and playing venues. A further bonus of including archery in such settings is that it has the potential to extend the hours of usage and many of the additional requirements such as changing rooms, showers, car parking etc. are already present. The main issues are usually those of:

- ◀ Timing – in separating the use of the field(s) for competing activities to different times of day.
- ◀ Orientation – ensuring that the archery does not create a conflict with surrounding uses. These will extend beyond adjoining sports at a multi-pitch venue, to public access, walkers and surrounding business and residential uses etc.

The following diagrams show how an archery range such as that outlined in figure 10 can be overlaid on a variety of pitches. They are, however, only examples and the best orientation will depend on your own circumstances. Consequently, the football example is overlaid on the longest axis of the pitch while the rugby example is set on the shorter axis – neither is a fixed situation.

Golf driving ranges are, in many respects, ideal settings for archery due to the separate ‘covered’ bays that make it possible to shoot with a degree of shelter, available car parking and familiarity of renting equipment, giving lessons etc. Of particular importance is the scale of the land associated with driving ranges; it is in fact quite surprising given the natural fit of golf driving ranges with archery that, as yet, a relatively small number appear to have taken up this opportunity.

*Figure 11: Outdoor archery overlaid on a football pitch*

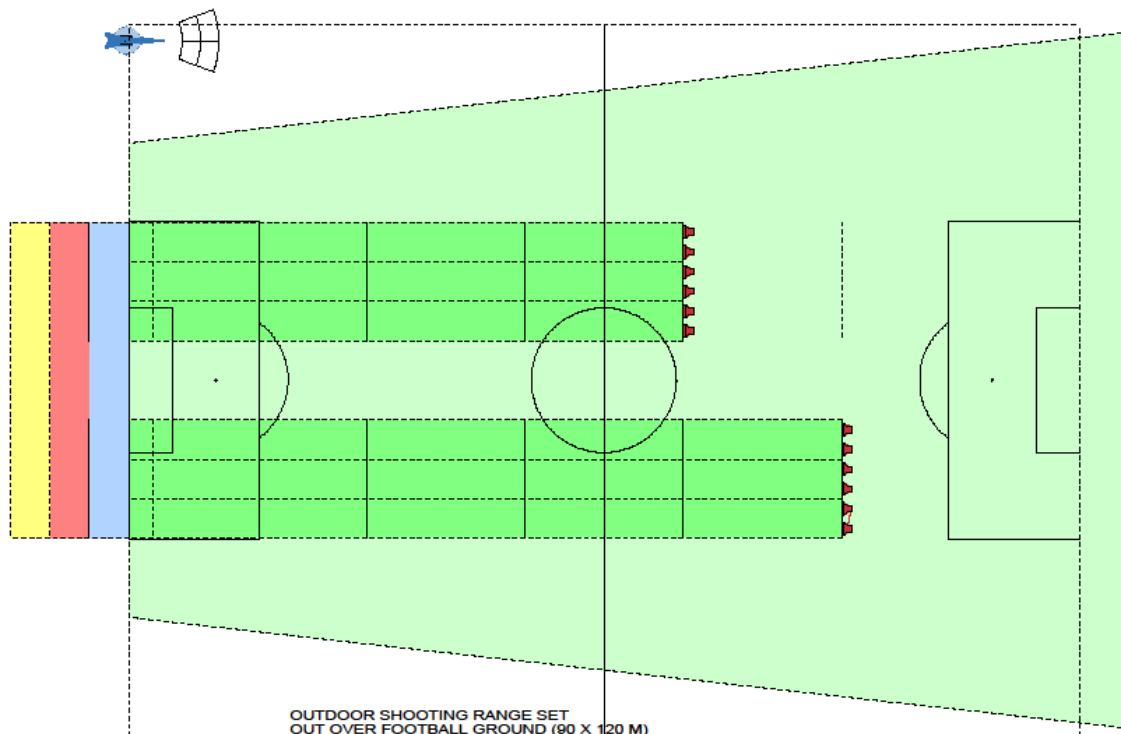
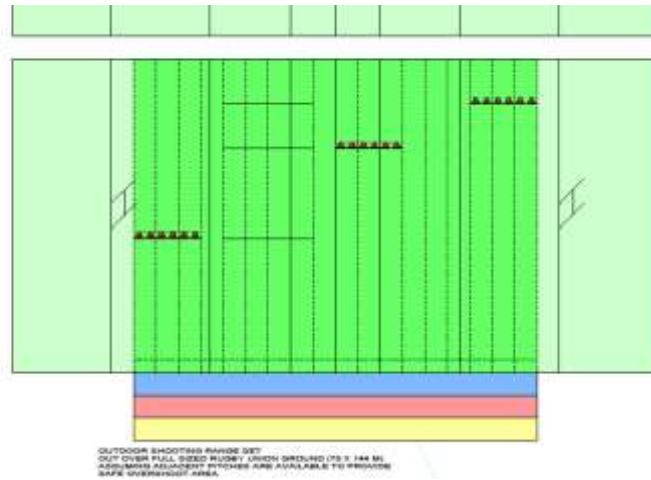


Figure 12: Outdoor archery overlaid on a rugby pitch in 'short' direction.

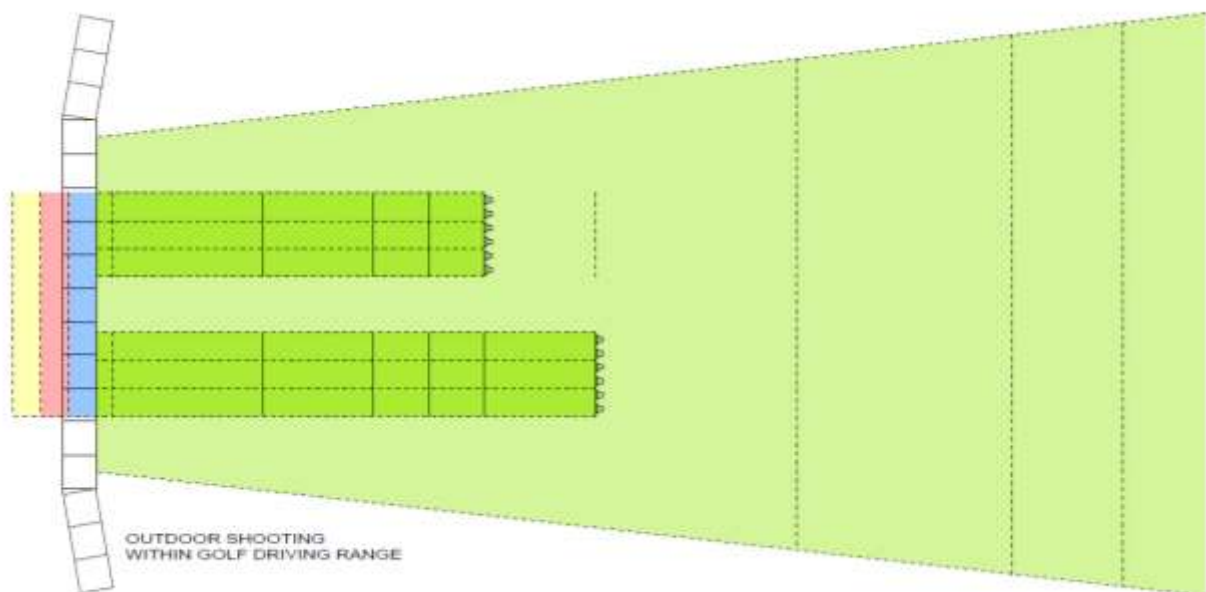
Note: Orientation as in the diagram shown opposite requires an adjacent pitch to be unoccupied to allow for overshoot area but as a result accommodates more archers over a shorter distance (see appendices for larger scale drawing).



There are only a few examples currently of pay and play archery on or alongside floodlit golf driving ranges. Operators tend to offer 'have a go' sessions for one or both activities, typically selling 100 or 200 balls for the driving range and 50 or 100 arrows for archery practice (see appendices for layout drawing).



Figure 13: Outdoor archery at a golf driving range



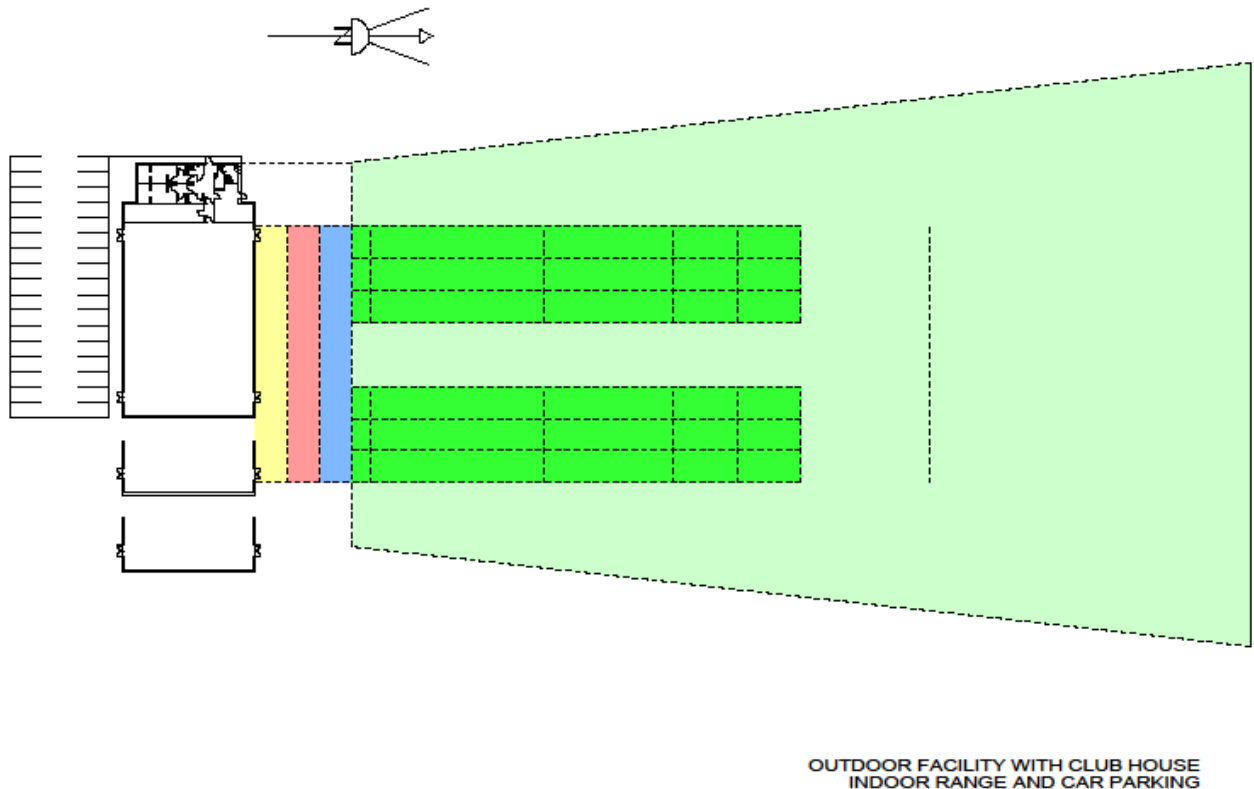
## 8. The complete club layout

The following diagram draws all of the above elements together for an archery specific facility principally from figures 4 and 10, thereby providing:

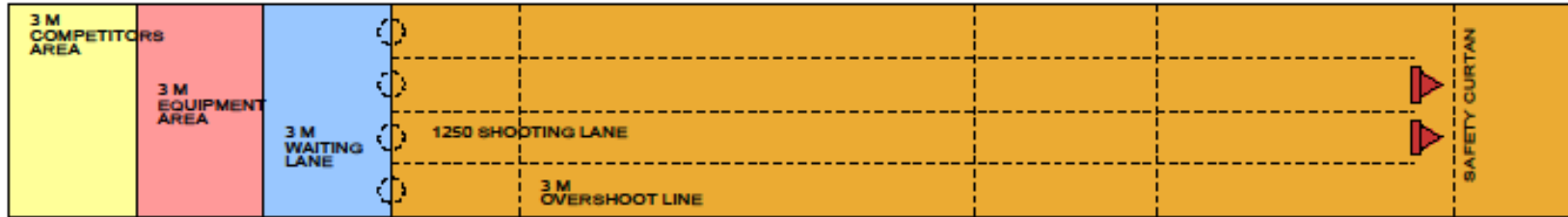
- outdoor range,
- indoor hall,
- changing rooms,
- clubhouse,
- storage and
- car parking



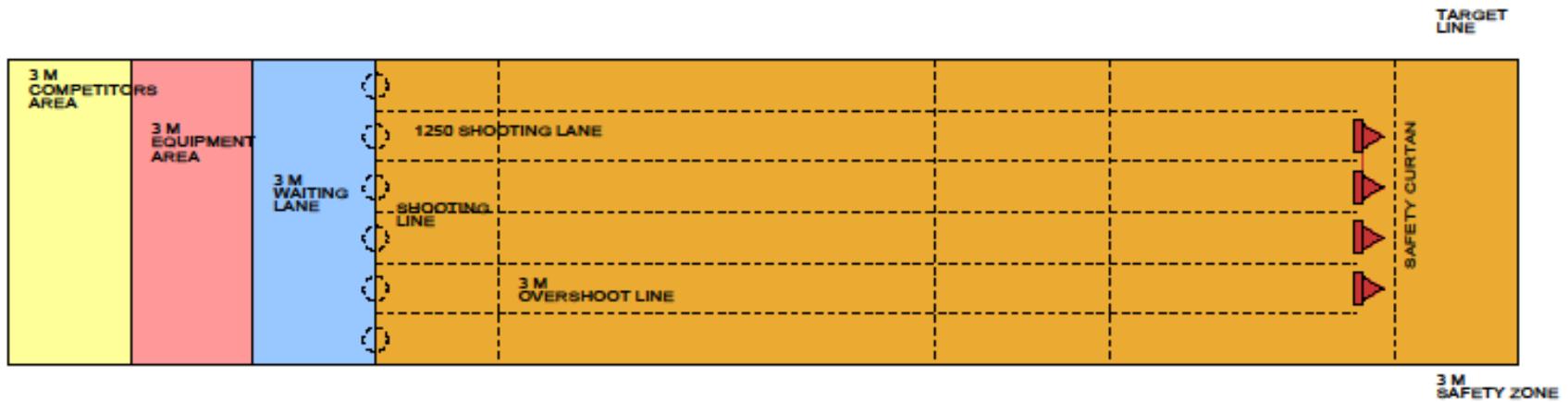
*Figure 13: Layout for a complete bespoke target archery facility – indoors and outdoors with all associated facilities.*



## Appendix 1: Annotated drawings



5 X 37 M PROJECTILE HALL (1250mm WIDE LANES)  
MIN HEAD HEIGHT 3000mm



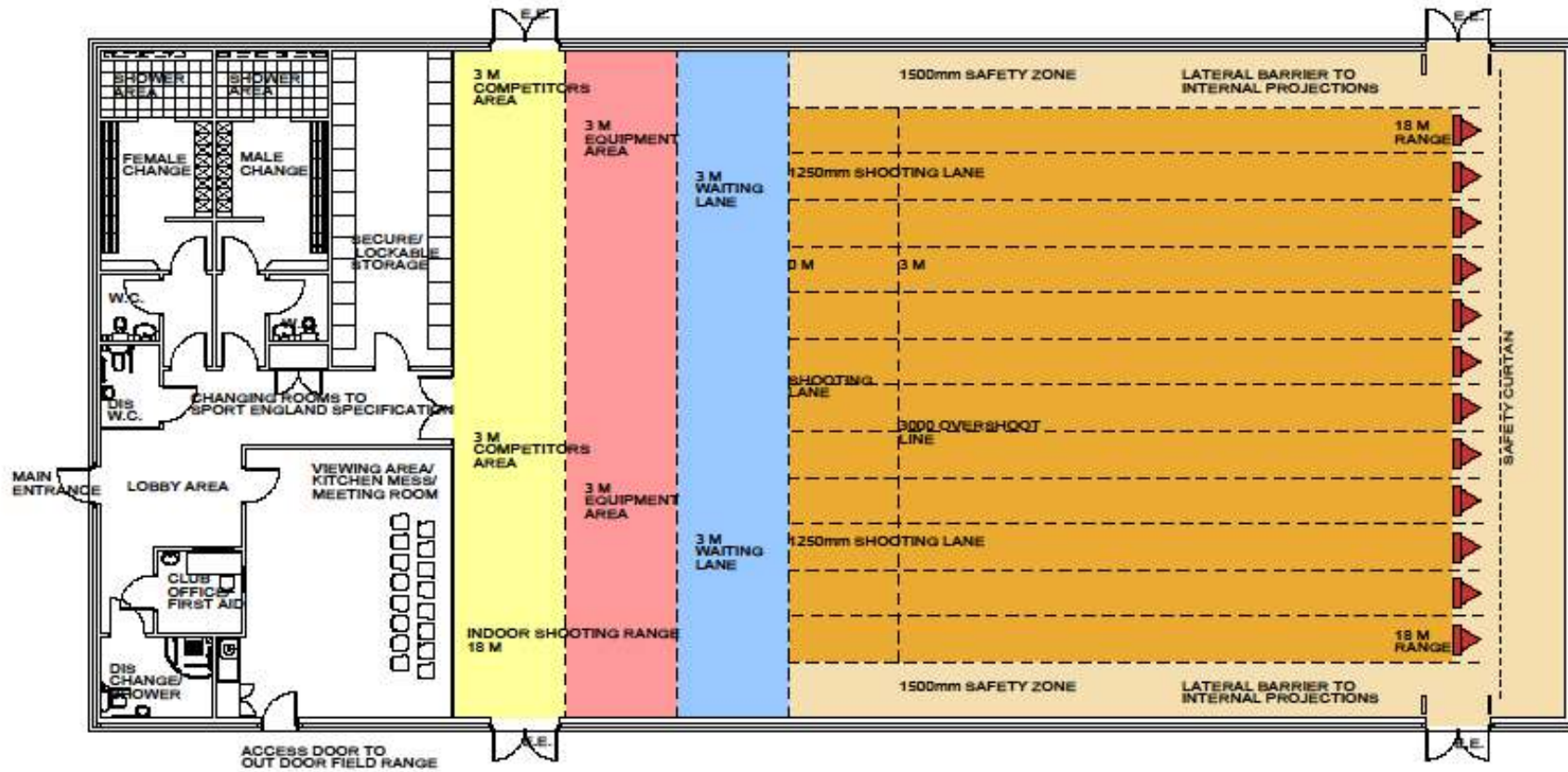
9 M      6 M      3 M      0 M

13.716 (15 YARDS) RECREATIONAL SHOOTS      18 M RANGE

25 M RANGE

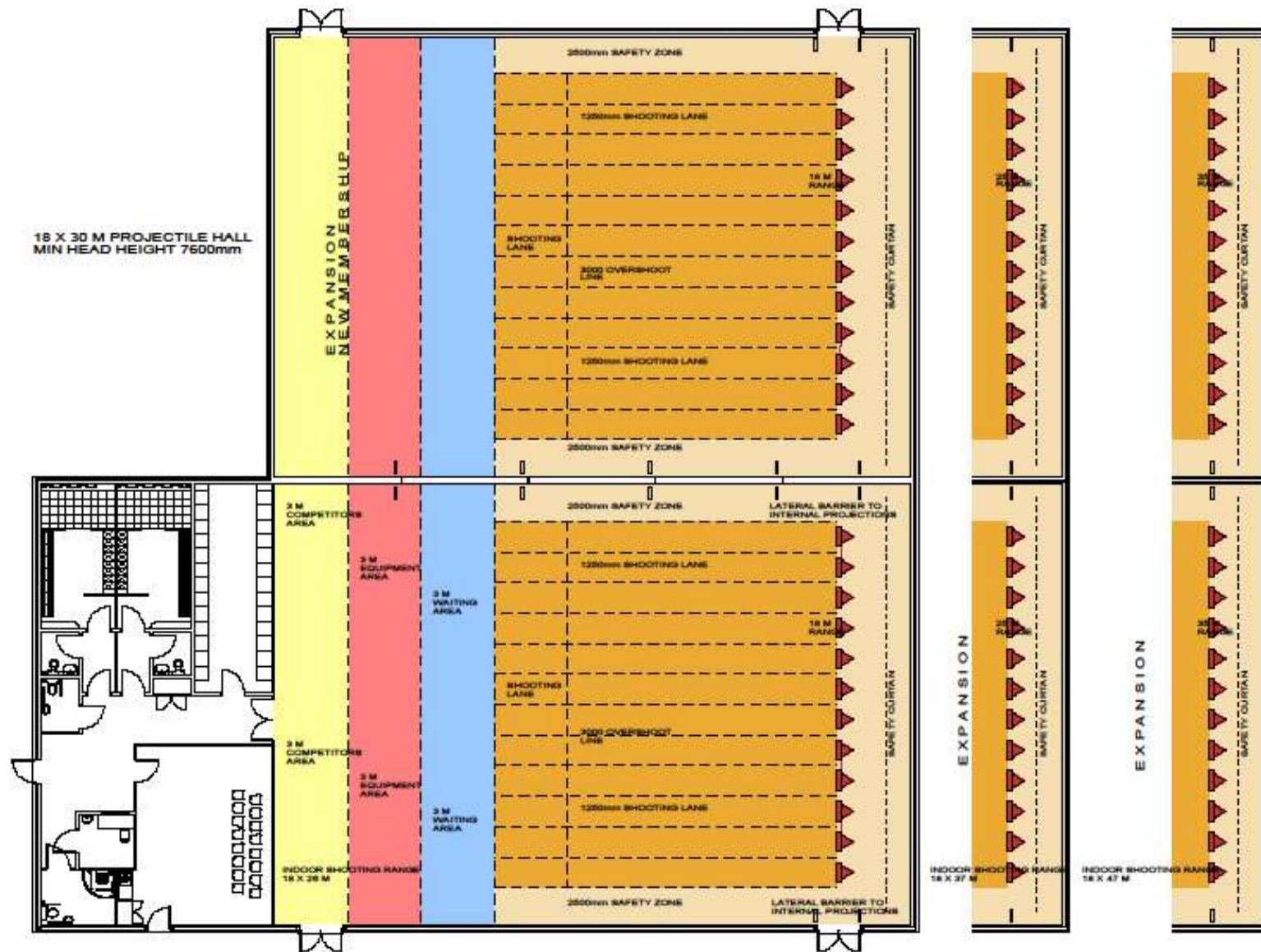
7.5 X 37 M PROJECTILE HALL (1250mm WIDE LANES)  
MIN HEAD HEIGHT 3000mm

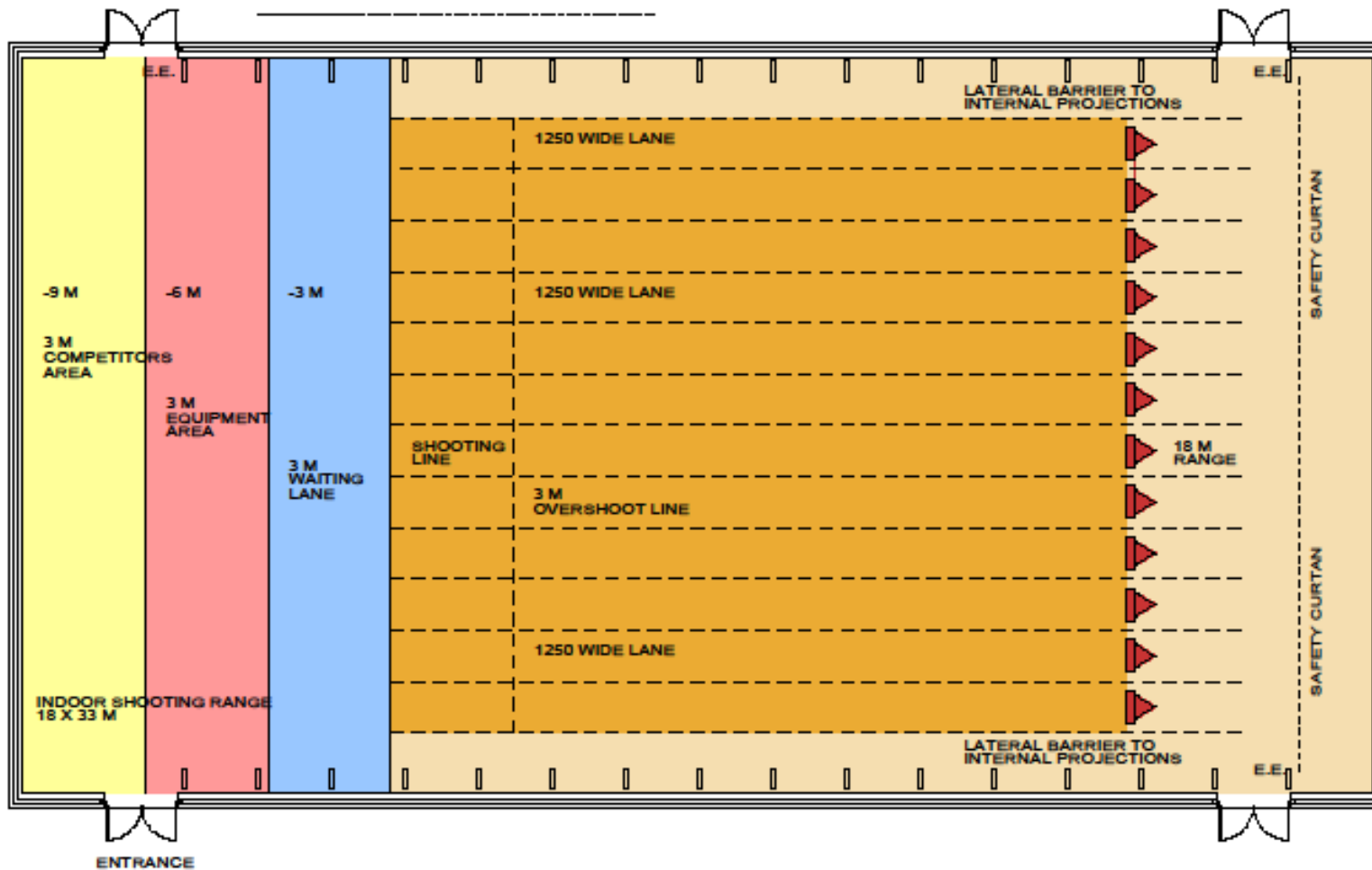
FUTURE EXPANSION  
IN 6000mm BAYS



18 X 30 M PROJECTILE HALL TO FITA STANDARDS (1250mm WIDE LANES)  
MIN HEAD HEIGHT 7800mm WITH ARCHERY CLUB

## Archery Facilities: Guidance & Specifications

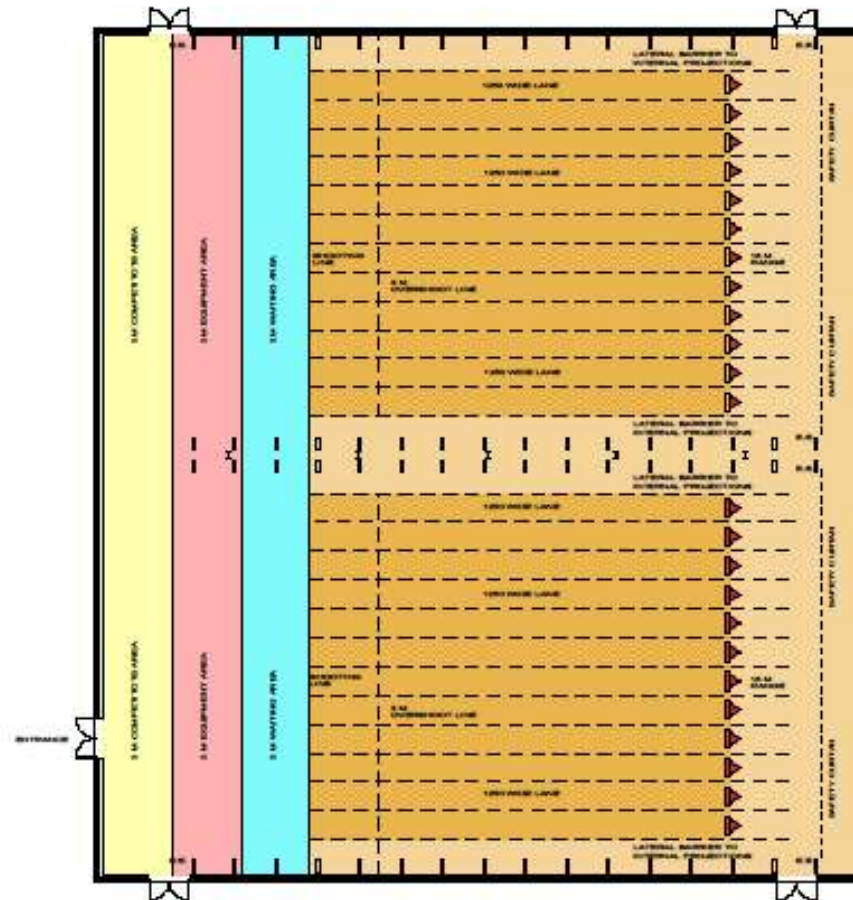




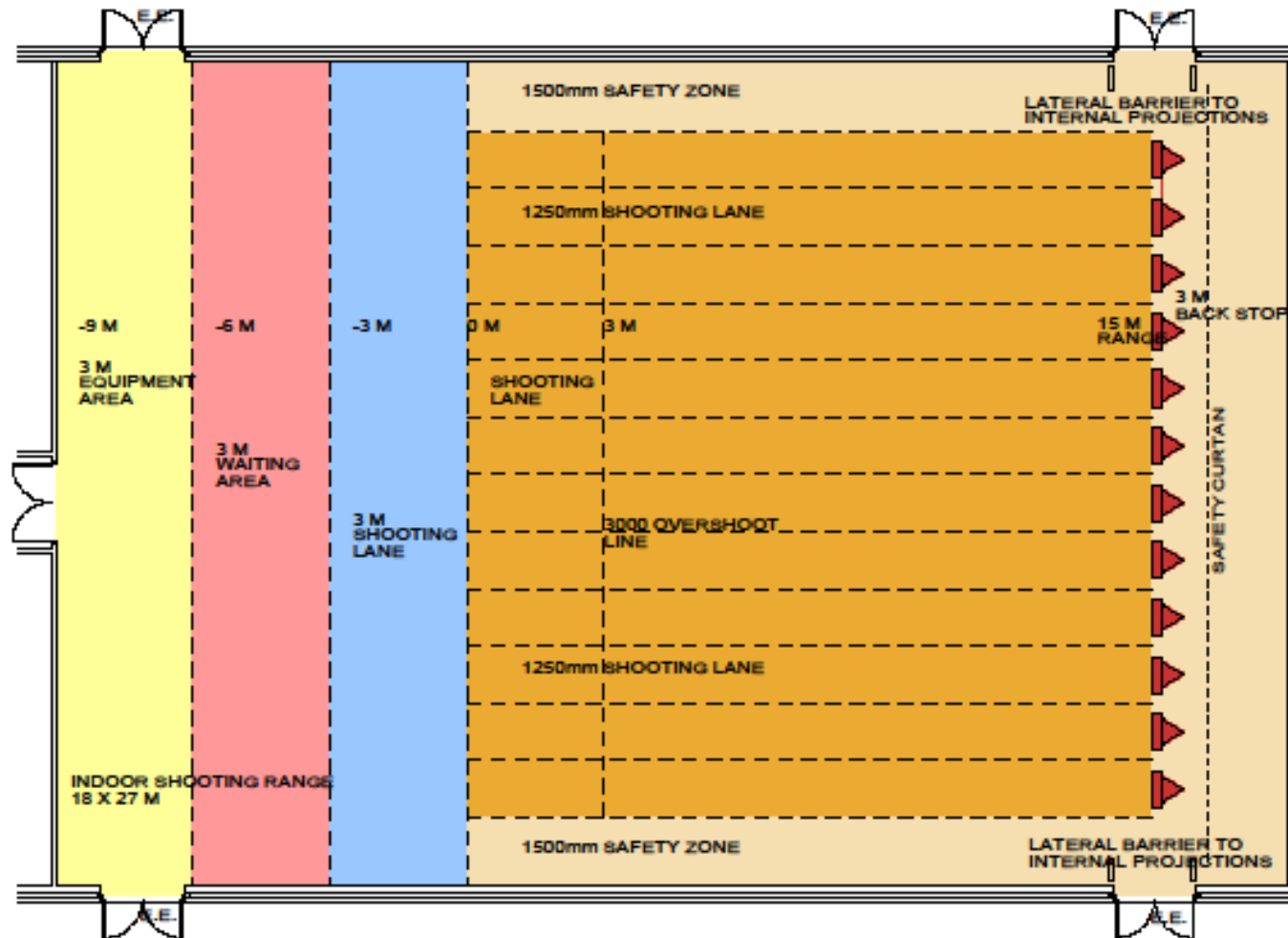
18 X 33 M SPORTS HALL (1250mm WIDE LANES)



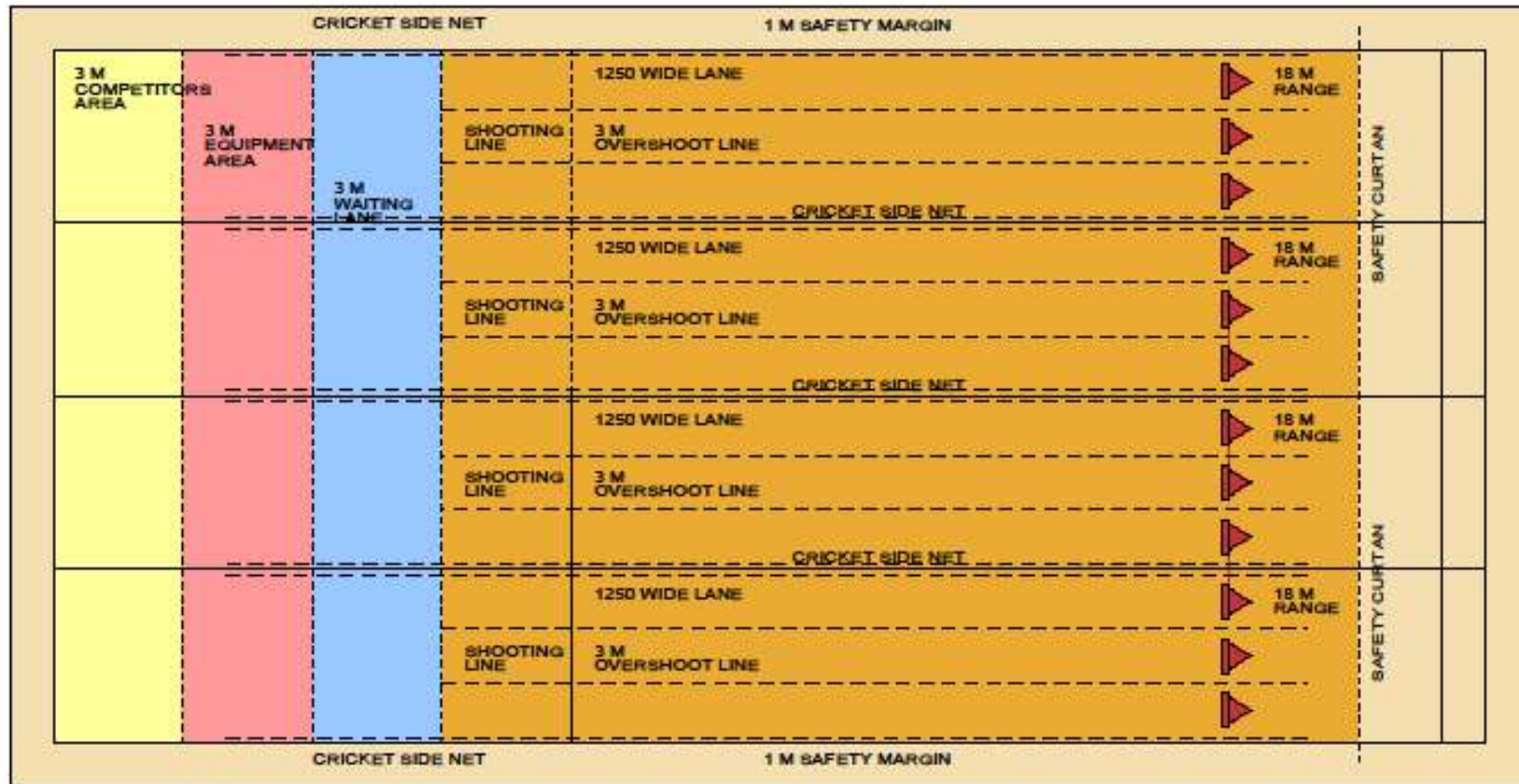
## Archery Facilities: Guidance & Specifications



37 X 33 M SPORTS HALL (1250mm WIDE LANES)  
EIGHT-COURT HALL (24 SHOOTING LANE FACILITY)



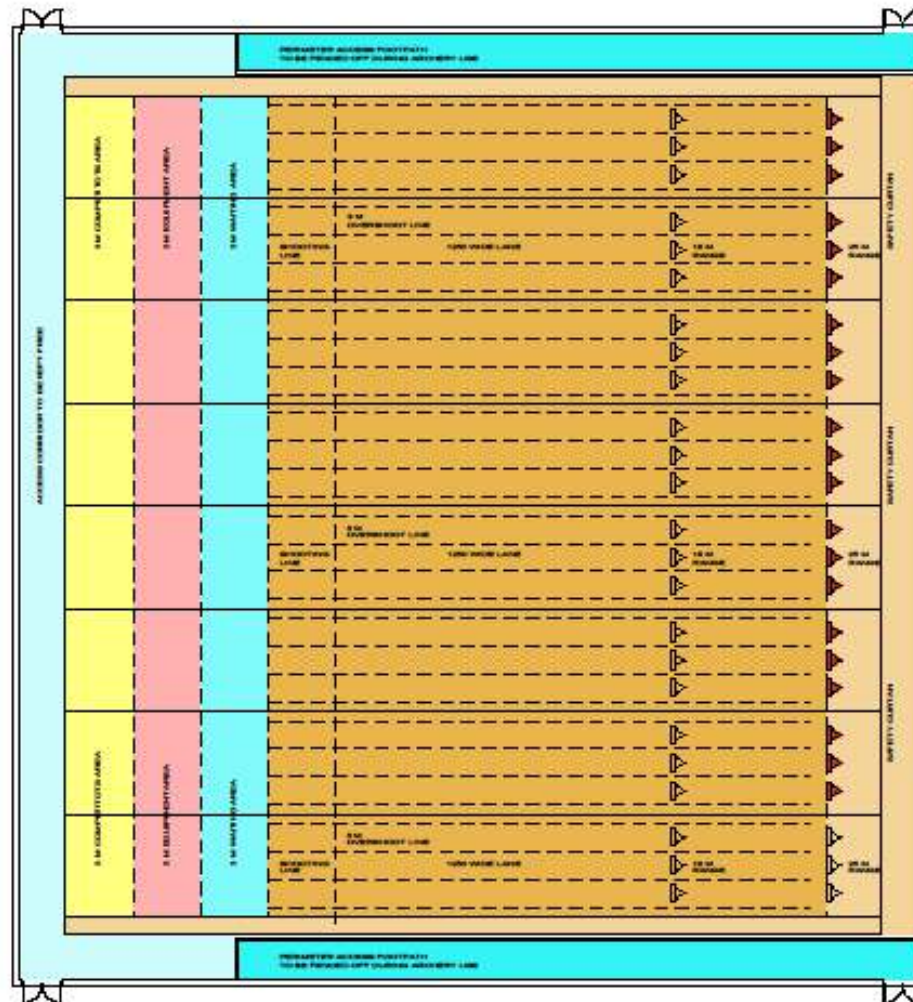
18 X 27 M FORMER 3 COURT BADMINTON HALL  
ADAPTED TO PROVIDE 15 M SHOOTING RANGE



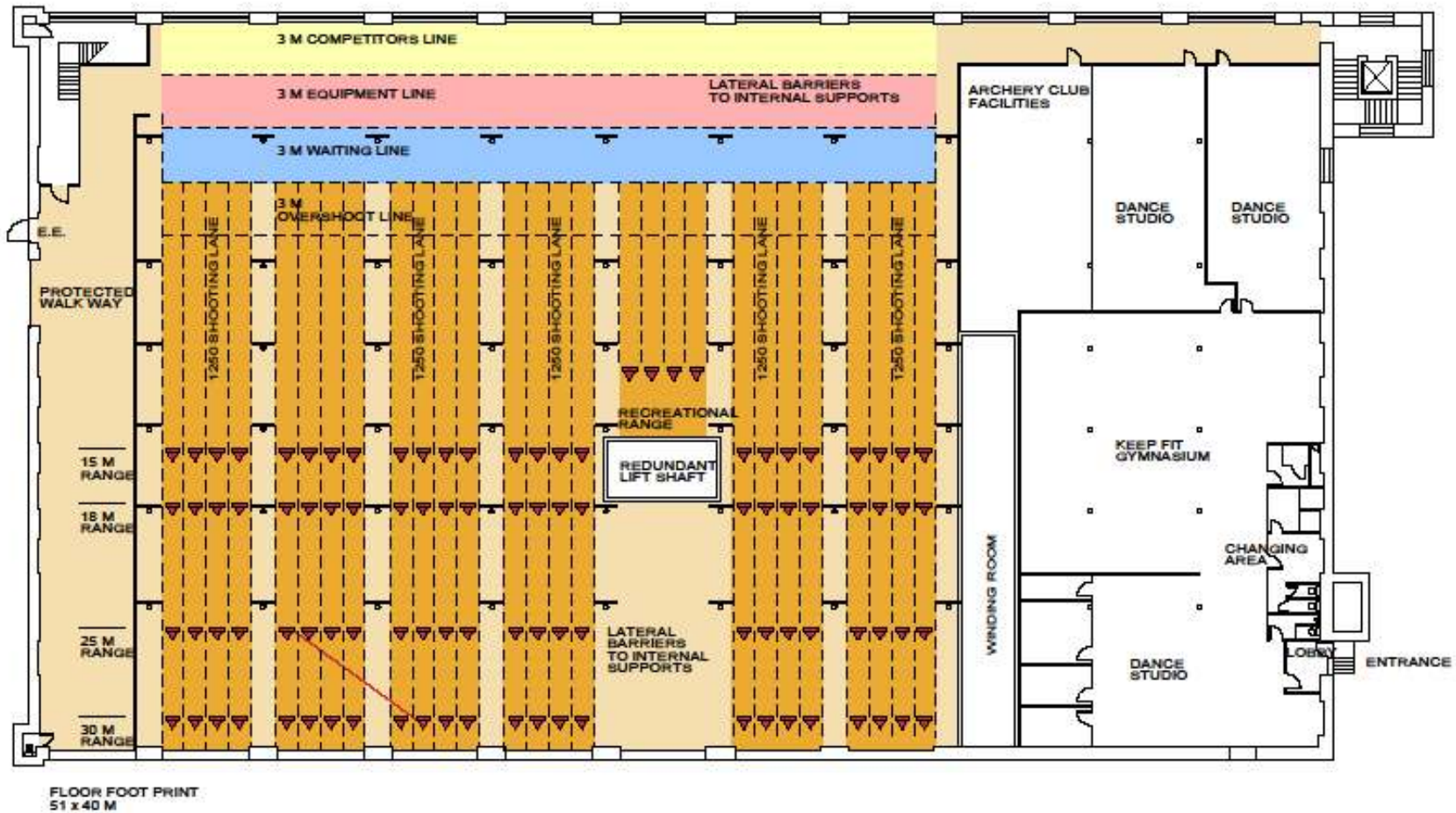
CRICKET PRACTICE NET DIMENSIONS  
 4 M WIDE BY 33.12 M LENGTH WILL  
 ACCOMMODATE 3 No 1250 WIDE SHOOTING  
 LANES WITH 18 M RANGES

4 No PRACTICE CRICKET WICKETS 18 X 31.12 M

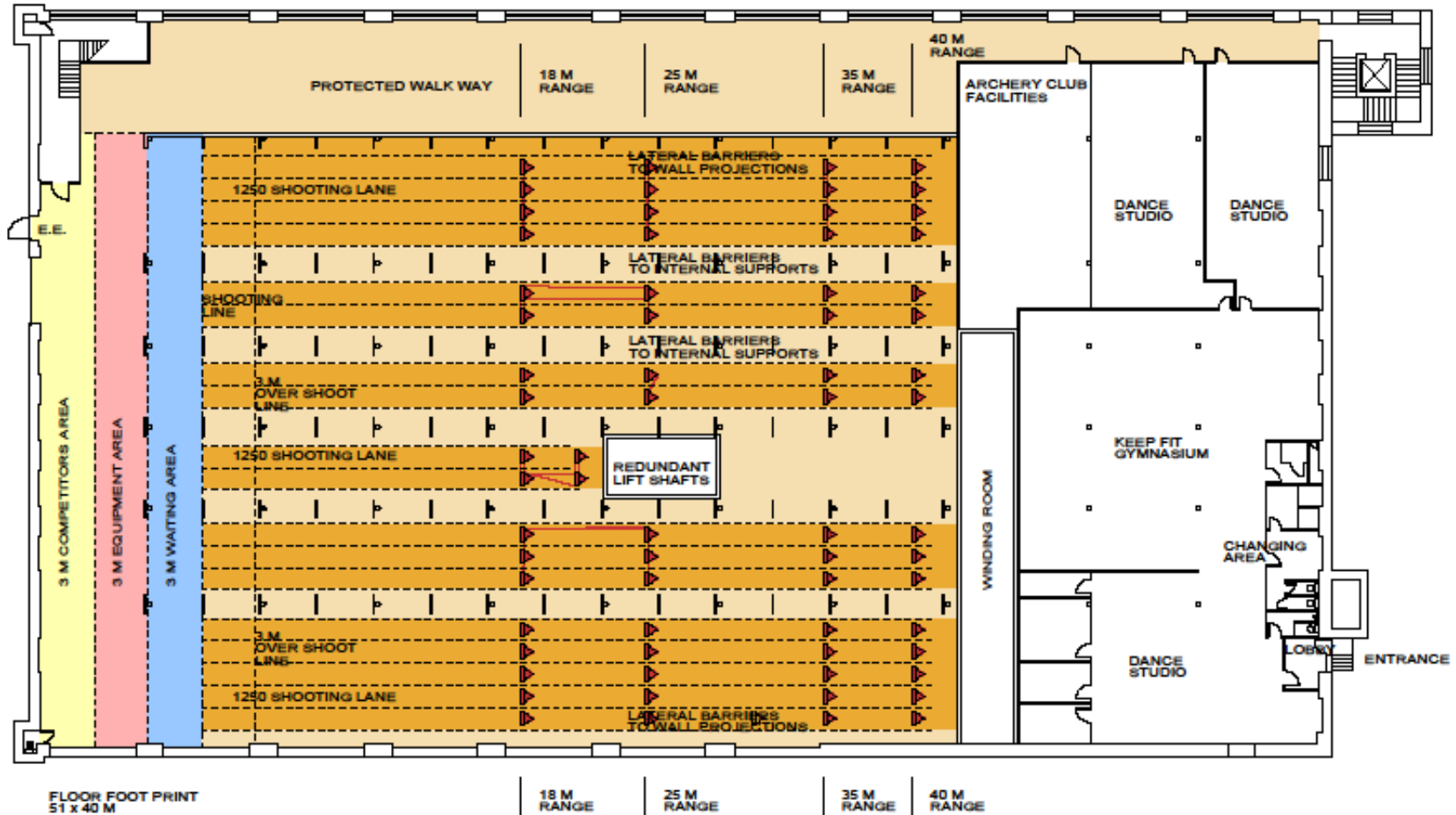
## Archery Facilities: Guidance & Specifications



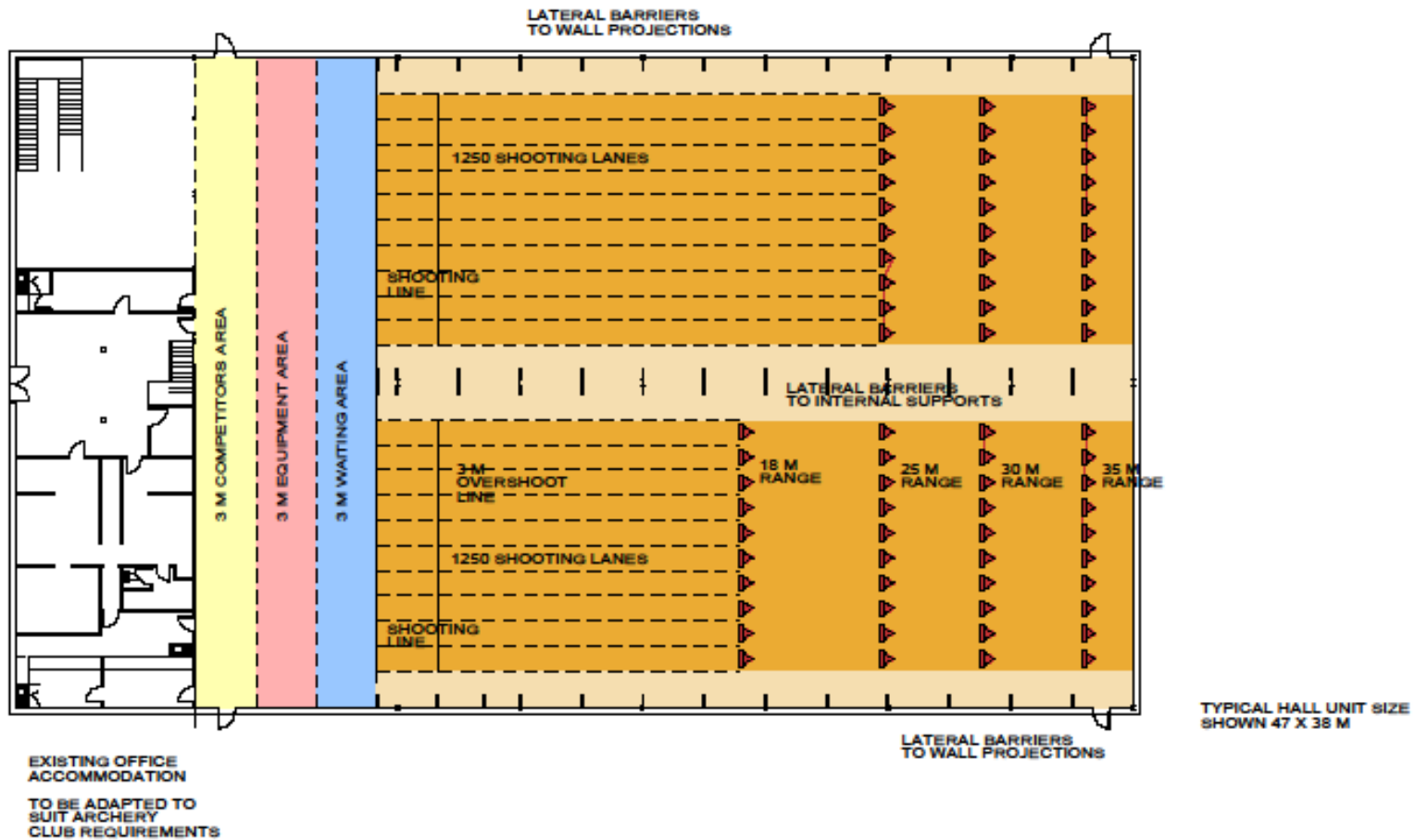
38.4 X 36.6 M NOTIONAL 8 RINK BOWLS CENTRE  
(24 SHOOTING LANE FACILITY AT 1250 mm wide)



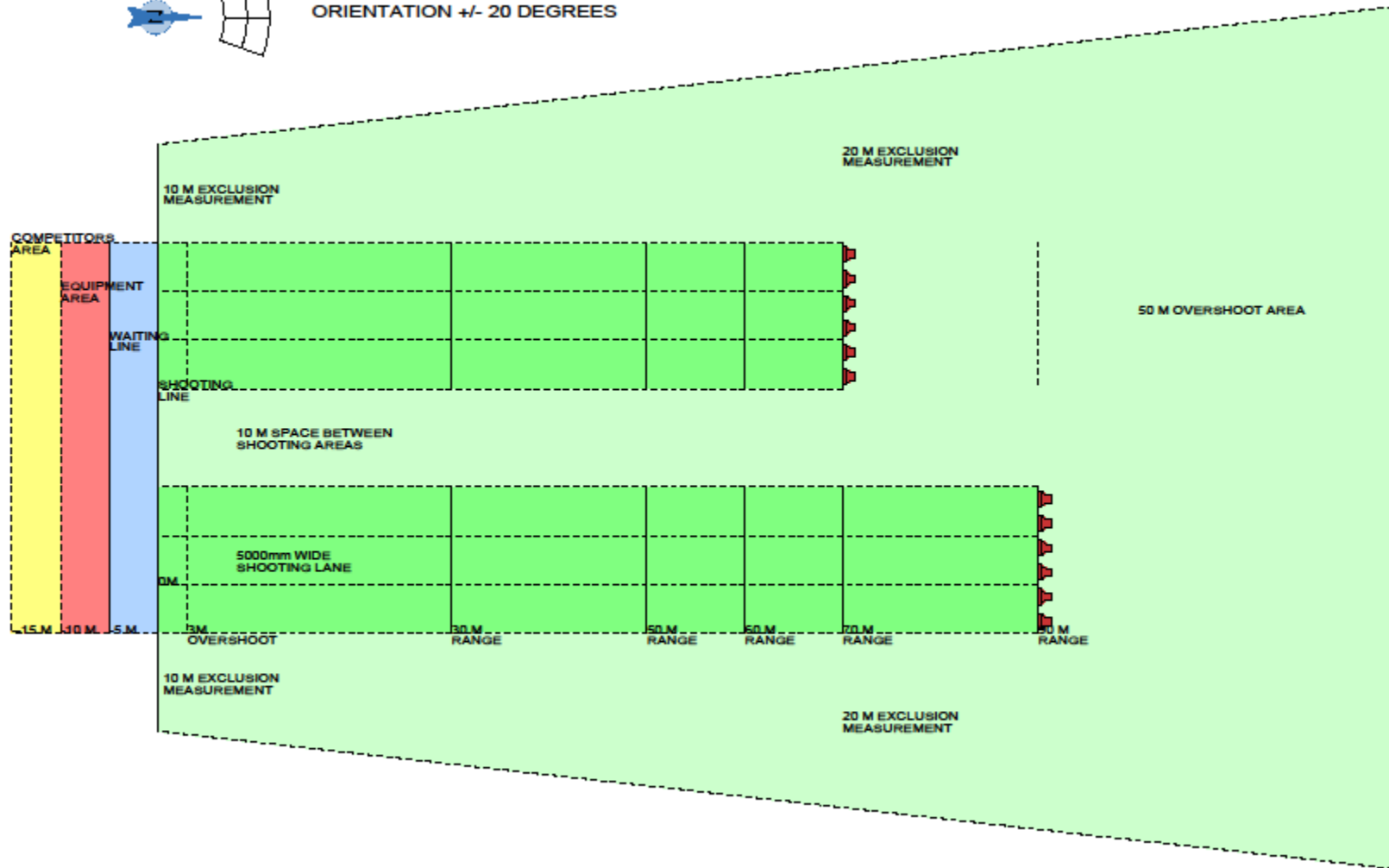
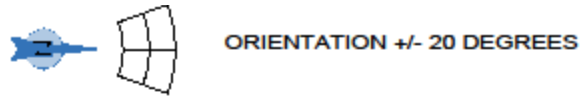
VICTORIA MILL ATHERTON BOLTON  
POSSIBLE MILL FLOOR ADAPTION FOR ARCHERY



VICTORIA MILL ATHERTON BOLTON  
POSSIBLE MILL FLOOR ADAPTION FOR ARCHERY

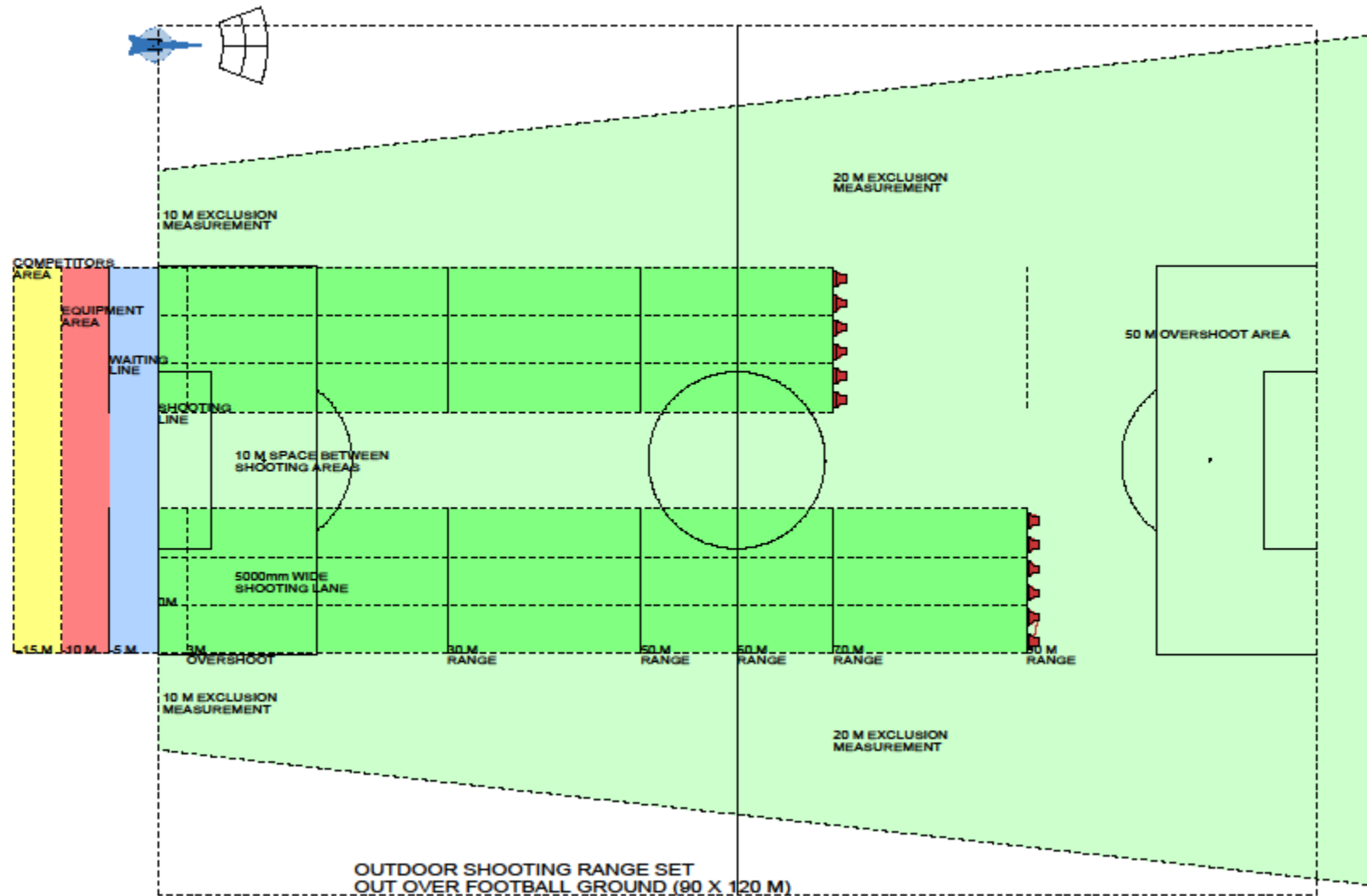


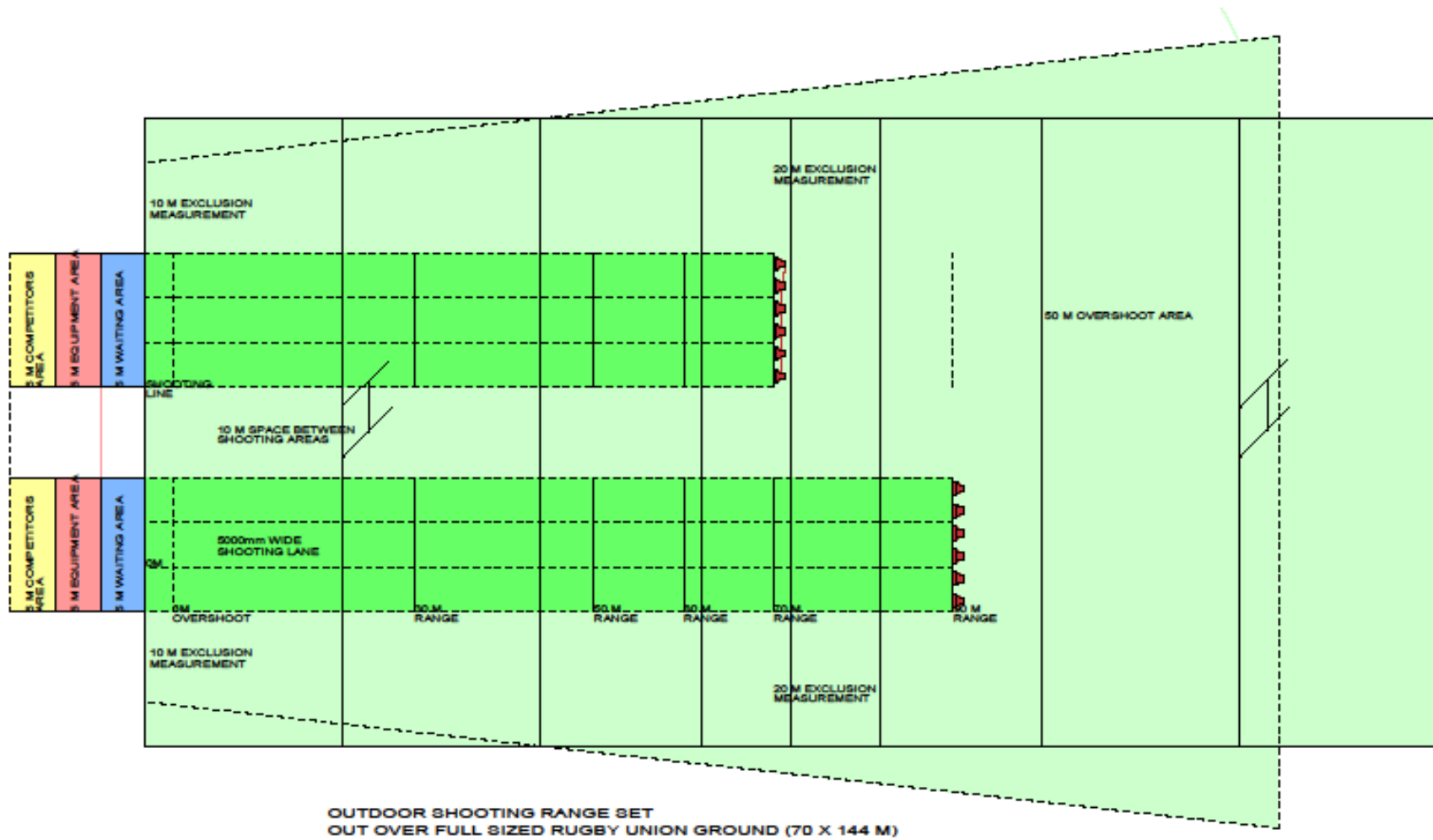
**POSSIBLE TYPICAL WAREHOUSE/ STORAGE FLOOR FOOTPRINT TO BE ADAPTED FOR ARCHERY INTERNAL USE**



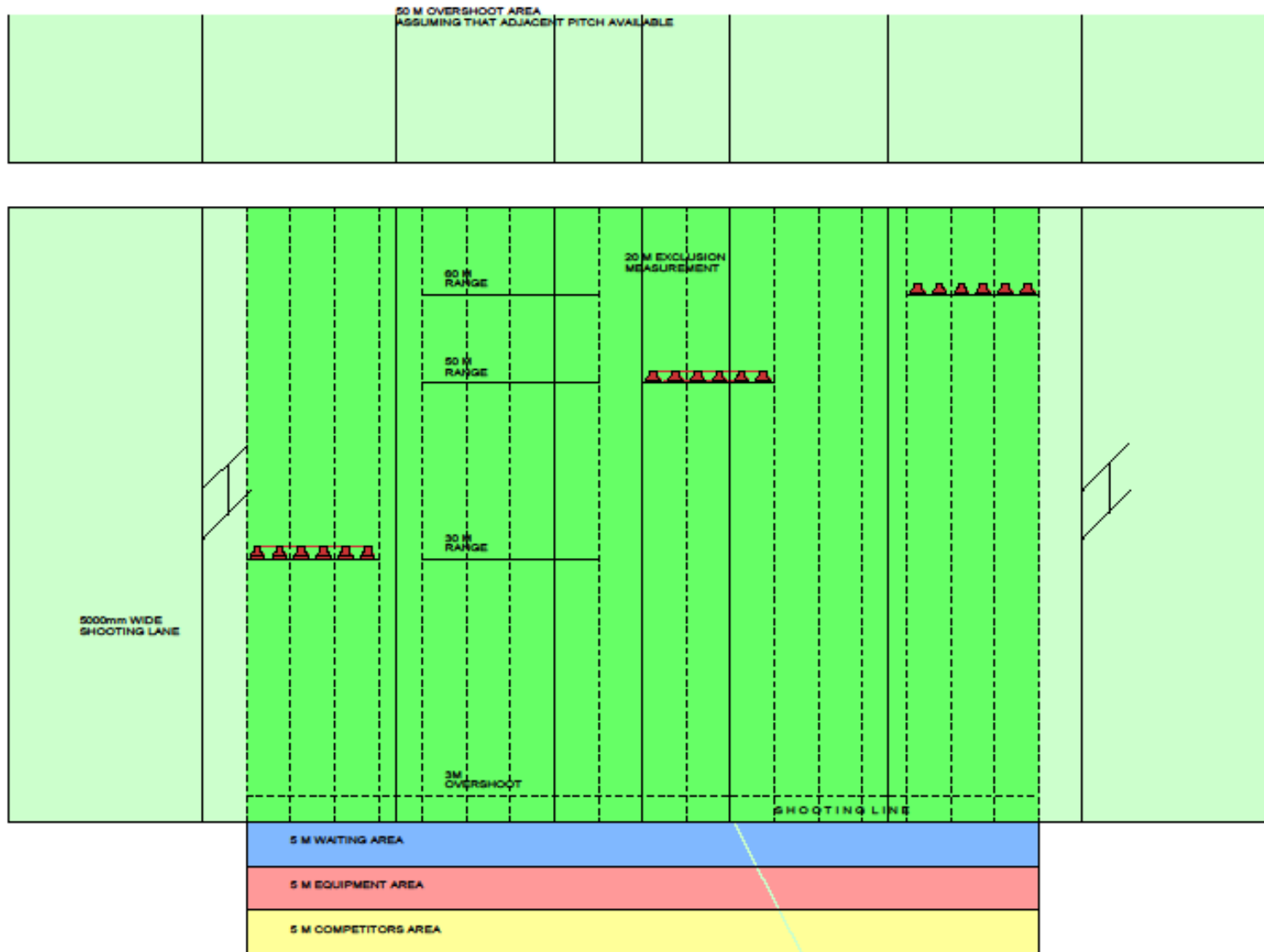
OUTDOOR SHOOTING RANGE



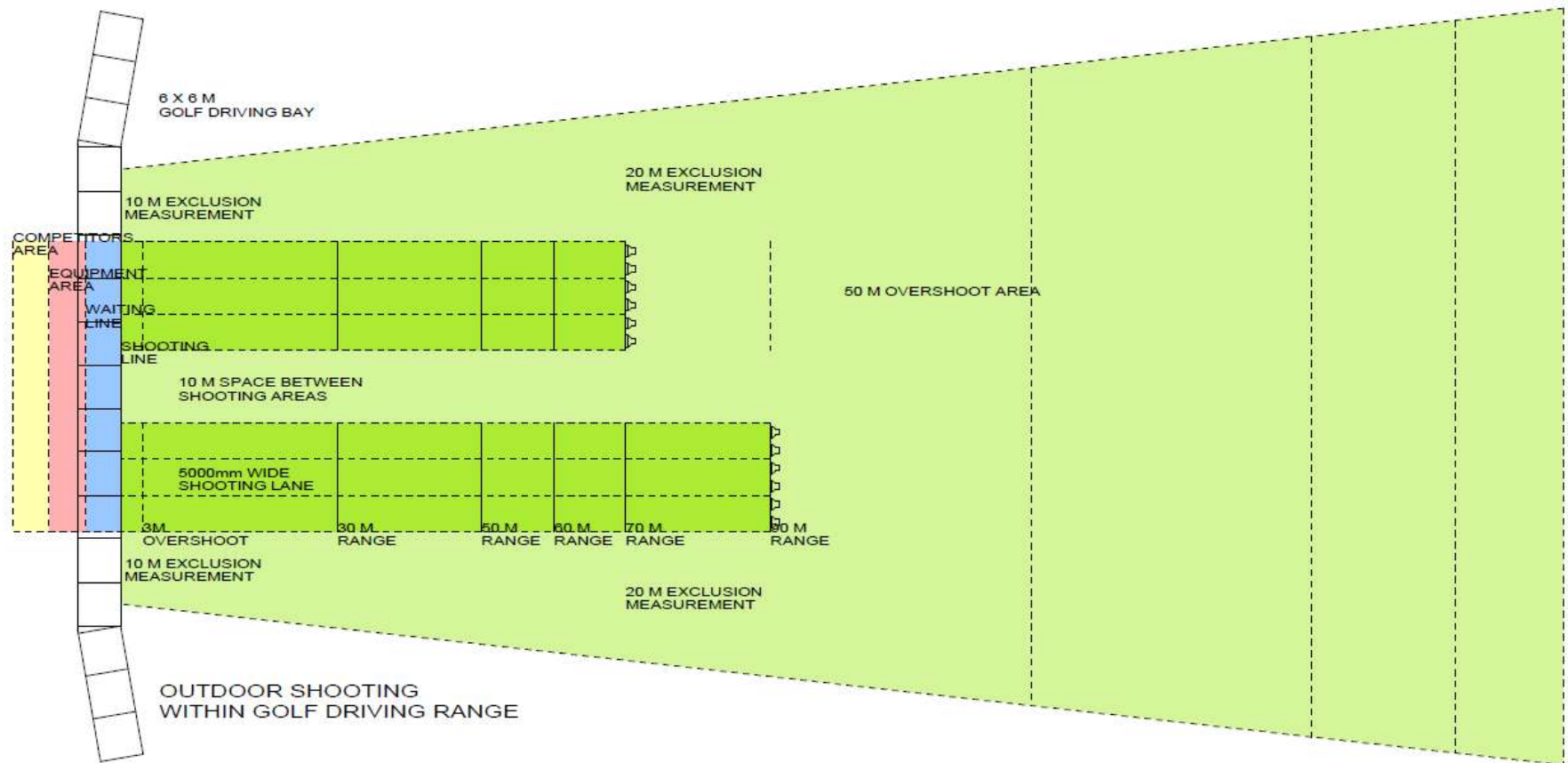


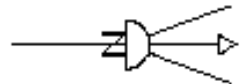


# Archery Facilities: Guidance & Specifications

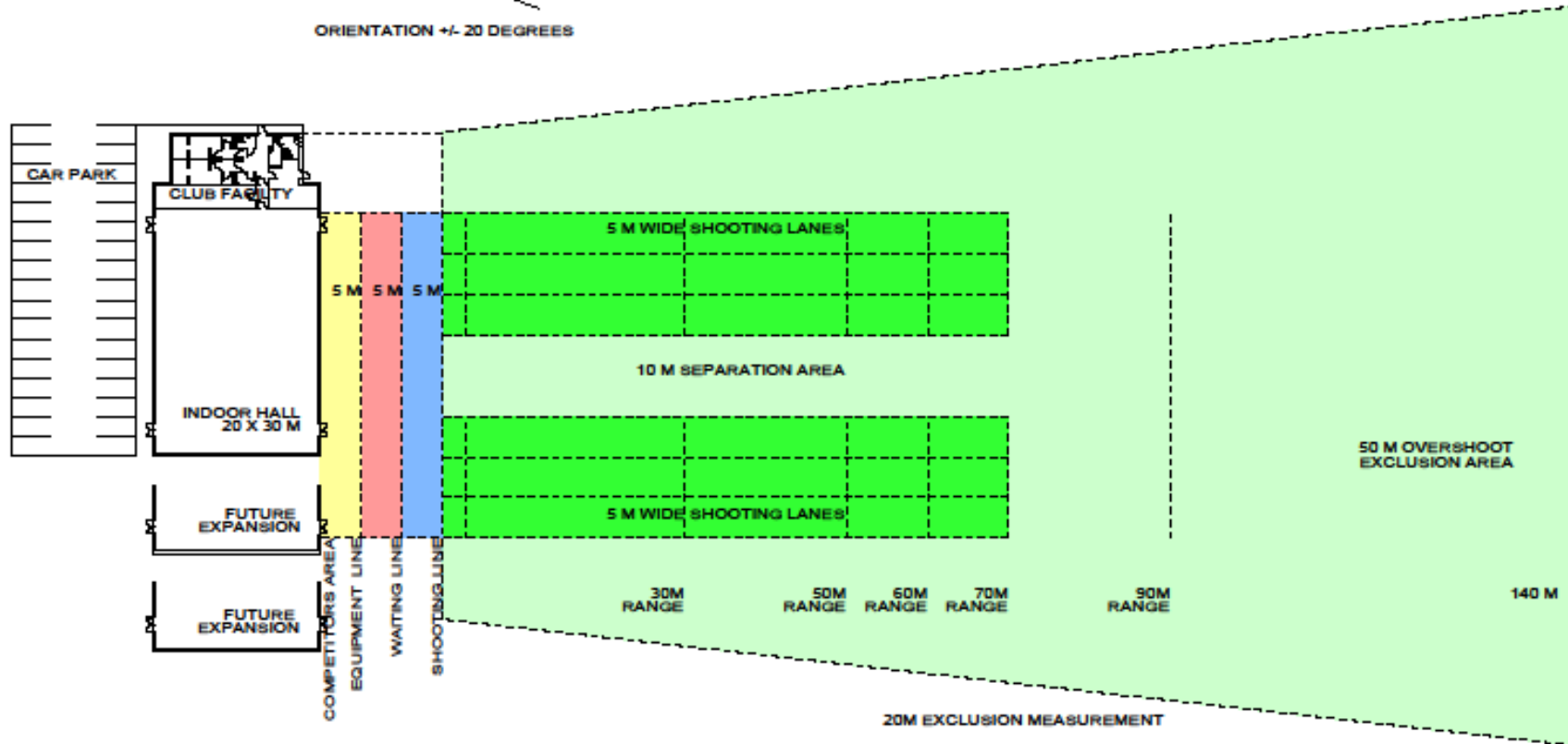


OUTDOOR SHOOTING RANGE SET  
OUT OVER FULL SIZED RUGBY UNION GROUND (70 X 144 M)  
ASSUMING ADJACENT PITCHES ARE AVAILABLE TO PROVIDE  
SAFE OVERSHOOT AREA





ORIENTATION +/- 20 DEGREES



OUTDOOR FACILITY WITH CLUB HOUSE  
INDOOR RANGE AND CAR PARKING

## Appendix 2: Details of Minimum outdoor archery standards

### Minimum overall length and width

113.75m -x- 37.62m

#### Length:

- 13.65m [15yds] before the shooting line for competitors, equipment and waiting
- a shooting distance up to 54.8m (60yds) with an overshoot area which together combine to a total of 100.1m (110 yards)
- if the shooting distance exceeds 54.8m (60yds) then an overshoot area of 45.7m (50yds) should be allowed for behind the target line

#### Width

Side safety area	18.20m	(20.13yds)
One boss/target	1.22m	(1.34yds)
Side safety area	18.20m	(20.13yds)
Total	37.62m	(41.60yds)

#### Additional targets

A further allowance of 3.66m for each additional boss/target leads, for example, to a requirement to support five targets of:

Side areas (1 & 2)	36.40m	(40.26yds)
First target	1.22m	(1.34yds)
Additional targets (4 x 3.66m)	14.64m	(16.19yds)
Total	52.26m	(57.80yds)

#### Minimum size:

Alternately, an immediate backstop (4m high) may be used which an arrow cannot pass through.

This enables the overall site to be reduced to:

Length (13.65m + 25m target distance + backstop)	= 40.00m (44.24yds)
Width (safety areas are reduced due to shorter shooting distance)	= 20.00m (22.12yds)



## Archery Facilities: Guidance & Specifications

### NOTES



## Archery Facilities: Guidance & Specifications

### **Content approved by...**

Archery GB and Sport England

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