



# RFU DESIGN GUIDE TO CHANGING ROOMS & CLUBHOUSES



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TEAMWORK RESPECT ENJOYMENT DISCIPLINE SPORTSMANSHIP

## INTRODUCTION & CONTENTS

This document provides guidance for the design and construction of changing rooms and clubhouses for rugby union, including new facilities, extensions and refurbishments. It also outlines minimum design criteria for any rugby club wishing to pursue funding support from the Rugby Football Union or Rugby Football Foundation. It is designed to be easy to follow and is broken down into the following key project stages

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Example documents and templates are a very important part of this Guide and a useful resource for clubs. They are included separately, as part of the appendices, as follows.

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## STAGE 1: PROJECT STEERING GROUP & PROJECT BRIEF

The starting point of the project development phase is to identify a Project Steering Group, made up of members of the club. For anything other than the smallest of projects, it is not advisable for a single person to take on the burden of working through every stage of a construction project alone.

When creating the Project Steering Group, it is useful to identify and invite any club members that may have experience or expertise of Project Management especially around construction projects.

Prior to appointing a professional team and commencing the proposed design stage, it is recommended that your Project Steering Group pull together the following information to form a project brief:

- a site plan including the extent of land ownership, legal agreements, covenants, way-leaves and rights of way, etc.
- existing buildings' mains services and pitch layouts
- existing and future programme of use, including age and gender of players,
- any local knowledge of ground conditions and site factors
- grounds maintenance arrangements
- car parking requirements
- other sports users and events on the site.
- details of any initial consultations with the Local Planning Authority, other agencies and organisations
- initial outline and schedule of proposed accommodation for changing rooms and support accommodation
- budget and funding sources

Carefully consider whether to build new facilities or refurbish/extend existing buildings. When related to the cost of carrying out a refurbishment project, Sport England advises that, where refurbishment project costs are in excess of 70% of a replacement building, they should be not considered of sufficient value for money in the long term.

An example Project Brief is included as [APPENDIX 1](#)



Don't forget, if you are considering a facility development project, make contact with your RFU Area Facilities Manager and/or Constituent Body Facilities Coordinator at the earliest opportunity.

## STAGE 2: APPOINTMENT OF PROFESSIONAL SERVICES

After creating a project brief, the selection and appointment of a professional team is an important next step in the facility development process.

### What is a professional team and how do you build one?

With the majority of projects (unless the work is very minor) it is useful to appoint at least one key suitably qualified person to advise and assist with the proposals, typically an architect. This person can also act as “Principle Designer” for CDM requirements (see page 16). However, the process for larger projects can be complicated and having additional experienced professionals involved can save time and money. Typically a club should **consider** the merits of appointing the following professional support services.

#### Architect

- Refinement of Project Brief
- Analysis of the site
- The building design
- Liaison with Local Planning Authority
- Preparation of the Planning Application
- Preparation of a Building Regulations application
- Selection of a procurement route
- Selection of the Contractor
- Management of other qualified people within the team
- Site inspections to monitor progress
- Act as lead consultant.

#### Structural Engineer

- Designing the structure of the building
- Calculating the size of beams, lintels, foundations etc.
- Examining existing buildings to see if they are structurally sound and fit for purpose
- Investigating ground conditions and analysing soil tests and trial holes to check for stability of the ground and possible contamination
- Assist with Building Regulation approval

#### Planning Consultant (complex or contentious projects)

- The preparation of and submission of the Planning Applications
- Pre-Application discussion
- Consultation with the local community
- Discharge of Planning Conditions

#### Quantity Surveyor

- Management of costs relating to the project
- Preparing tender and contract documents, including bills of quantities with the architect and/or the client
- Undertaking costs analysis for repair and maintenance project work
- Helping to advise on areas for cost reduction should the project be over budget
- Advising on the type of contract to be used to run the project.

#### Building Services Consultant

- Designing the services that are needed including heating, lighting and power
- Assist with obtaining service connections and locating and assessing existing service connections
- Advise on renewable energy and cost saving measures
- Assist with obtaining Building Regulations approval
- Site Inspections to monitor the quality of mechanical and electrical installations.

### Criteria for the selection of consultants

- Understanding of the club's objectives
- Knowledge of sport
- Previous experience of similar projects
- Knowledge of key technical issues
- References and recommendations from other clients
- Clear schedule of services and fees

### How to appoint a suitably qualified person

Once the professional has been selected, it is a good idea to confirm their appointment in a written contract.

### Fees

Professional fees can be based on a percentage of the construction cost, time expended or can be a lump sum. You may wish to break the appointment of the professional into sections and agree the timing of payment that way.

Registered professionals can be found on the on line registers for each particular profession.

Architects - <http://architects-register.org.uk/>

Building Services consultants- <http://www.cibse.org/>

Chartered Institute of Engineers <http://www.engc.org.uk/ceng>

For further information on the different forms of appointment click [here](#)

More detailed information on project roles and responsibilities is included as **APPENDIX 2**

## STAGE 3: FEASIBILITY STUDY AND REPORT

A Feasibility Report is needed to assess the realistic options and to understand whether or not a proposal is viable before investing significant time and money into design development. As a minimum, the Feasibility Report should cover the following:

### Introduction

This provides a brief introduction to the client's aims and objectives, the reasons for the project and an outline of the scope of the works.

### Site Details

This section outlines details on any site specific issues which may have an impact on the proposed project and will vary significantly depending on the scope and type of project. Within this section we would generally expect the following:

- a) An aerial photo or site location plan showing the location of the site for development and the local area
- b) A brief assessment of any existing structures (if the proposed project is an extensive refurbishment then a Condition Survey should be carried out)
- c) An overview of the existing facilities and services within existing structures or across the site
- d) Plan of the existing layout (only for refurbishment or extension)
- e) Photos of any significant areas



### Design Proposals

This should summarize the scope of works and provide proposed and existing sketch plans/elevations for each option under consideration.

### Budget Costings

This identifies a budget estimate for the cost of each option identified in the Design Proposals. Estimates should include construction costs, contingencies, professional fees, survey fees and statutory fees and VAT.

### Risks

This section should log all areas of risk. Many of these risks may relate to the suitability of existing services or ground conditions, which will later need to be surveyed to provide greater cost certainty.

### Statutory Requirements

This provides a brief overview of the statutory requirements applicable to the project.

### Project programme

This presents indicative timescales for all stages of the project.

Your team/appointed consultants will be able to develop the initial brief into an architectural brief and schedule of accommodation with actual room sizes and performance standards. This schedule will also enable a footprinting and options appraisal to be carried out.

More detailed guidance on Feasibility Studies is included as [APPENDIX 3](#)

## STAGE 4 DESIGN – (A) DESIGN PRINCIPLES

### Orientation

Ideally, any entrances to the clubhouse should be oriented away from the direction of the prevailing wind. However, to permit comfortable viewing of the principle pitch from the clubhouse, the building should not face the setting sun. Glazing provided for viewing pitches must be carefully specified to combat glare; roof overhangs or screening may be required.

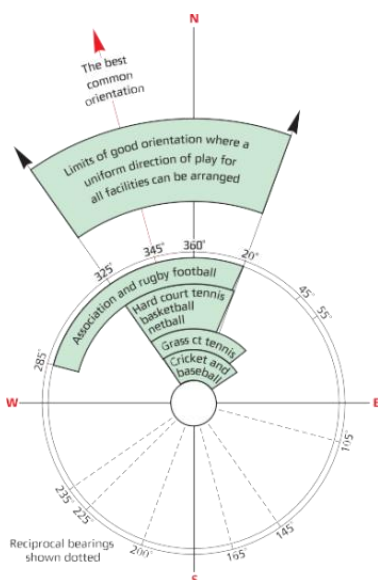


Diagram 1

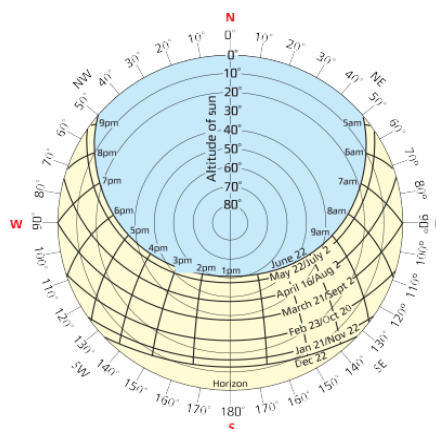


Diagram 2

### Location

Clubhouse and changing room development needs to be considered in the context of the site as a whole. The shape and contours of the available site will obviously influence the location of a clubhouse. However, in most instances, the proximity of an existing access road and/or the necessary main services will be of prime importance. It is essential that the site should provide:

- sufficient space for the proposed clubhouse as well as space for future expansion
- adequate car parking provision, including the potential for overspill parking
- access for service and emergency vehicles, service deliveries, maintenance vehicles and equipment
- the number of changing rooms, showers and toilets should be commensurate to the number of pitches to be served.



### Options/Footprinting

The development of the project brief into a schedule of accommodation with proposed sizes will enable your consultants to carry out an options appraisal that includes critical site factors, possible locations and spatial requirements related to the available land.

Each option should be considered and the advantages and disadvantages clearly shown and commented upon. Future developments should also be shown. This exercise should lead to an agreed option being identified which can then be developed more fully with plans, sections and elevations so that the proposals are fully understood by your steering group.

### Sustainable Design and Construction

Everyone involved in the design, procurement or operation of any project should consider its sustainability, taking full account of all economic, social, environmental issues, design and specification standards. Your Local Authority Planning Department may require clear statements and information on this topic. Further information on this subject is provided through the Sport England Environmental Sustainability Design Guidance Note.

## Accommodation

The scale and the type of the changing accommodation depend upon the number and type of pitches served as well as the different sports that may use the facility. The general accommodation should typically include:

- Changing rooms with en-suite lavatories, showers and dry-off space
- Match Officials' Changing room/s with en-suite lavatory, showers and dry-off space
- First aid/physio room
- Equipment storage (sporting)
- Cleaner's cupboard/store
- Entrance lobby
- Male and Female Lavatories
- Disabled Lavatory
- Baby Change Facility
- Office
- Club room/social space
- Bar and-Cellar
- Kitchen
- Plant room



Careful planning of the accommodation is essential to ensure a successful scheme and special consideration should be given to the following points:

- Include an entrance lobby for even the smallest clubhouse; never enter directly into a corridor
- Separation of changing and wet and muddy areas from any social or indoor sports accommodation
- Provide planning flexibility to respond to gender and age use
- Plan for simple, straightforward circulation routes
- Ensure access for disabled users
- Plan for convenient access to pitches and satisfactory viewing of the principle playing areas
- Never plan grass pitch changing rooms at first floor level
- Provide well considered entrances and lobbies and make provision for boot cleaning
- A flexible social and catering layout
- If it is proposed to have a licensed bar area, consultations and requirements for this should be addressed at an early stage.
- Security and protection of your buildings when unoccupied
- Good external lighting, security systems and CCTV installations

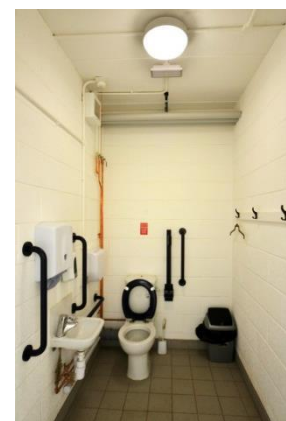
Each option should be considered and the advantages and disadvantages clearly defined. Proposed future development phases should also be shown. This exercise will lead to an agreed option being identified which can then be developed more fully with plans, sections and elevations so that the proposals are fully understood by your steering group

## Accessibility

Access and usage by people with disabilities need to meet the Disability Discrimination Act 1995 and the Disabled Rights Commission Code of Practice. For further information in this area, refer to Sport England's 'Accessible Sports Facilities' guidance note.

## Child protection and equity

In line with its Policies and Procedures for the Welfare of Young People in Rugby Union and Equity Policy, the RFU requires that all new build projects and/or extensions provide changing rooms with the appropriate number of en-suite showers and lavatories. Any club wishing to deviate from this recommendation needs to enforce suitable risk management procedures in line with the club's own child protection policy. Clubs' seeking to refurbish existing changing rooms should show due diligence in applying best practice to design or programming solutions for communal facilities in addressing the site's own child protection and equity policies



## STAGE 4 DESIGN – (B) FINISHES, FIXTURES AND FITTINGS

### Building Exterior

- It is important to consider a vandal-resistant design, with limited openings and careful detailing. The degree of protection will be determined by location and the need to design in keeping with the surroundings.
- Pitched roofs are less vulnerable to illicit access. Profiled aluminium/coated steel is preferred to resist breakage and vandalism, but if the roof is slated or tiled a plywood underlay makes a break-in more difficult.
- Roof overhangs make access more difficult in single-storey buildings.
- Windows in changing rooms should generally be avoided. Roof lights to both changing rooms and corridors are more secure and can produce a lighter, more airy environment, but they should be fitted with internal grilles
- Wall finishes should be selected with the problem of graffiti in mind. Detailing should not assist vertical access ie rainwater downpipes and their fixings should therefore be specified with care.
- On some sites, it will be inadvisable to include open porches or other places of potential concealment.
- Window frames should be in hardwood, aluminium, galvanised steel or UPVC to reduce maintenance.
- External doors should be limited in number and of robust specification. Where there is central internal circulation, avoid individual field exits from changing rooms, which increase floor area and decrease security.
- Door and veranda thresholds must be ramped for wheelchair access. The number of door openings should be restricted and door leaves and ironmongery should be of a high specification.
- Consider roller shutters to windows in all locations prone to vandalism.
- Consult with the local police crime advisor during development of clubhouses, particularly in risky areas or locations.



### External Works

- Buildings always look better when proper attention has been paid to their immediate surroundings.
- Provide non-slip, well-drained surfaces in the vicinity of the building. Avoid the use of light coloured pavings to terraces - they can cause distracting glare.
- Disabled parking bays should be as close as possible to the entrance and have ramped curbs.
- Coach as well as car parking will usually be required and service vehicle access and turning must also be considered.
- Artificial grass playing areas require paved access to the clubhouse, routed to deter use by grass pitch players.
- Good lighting levels are an essential safety feature around the building and the car park.
- Boot scrapers outside the changing entrance encourage boot cleaning and removal, especially if under cover.

### Building Interior Floors

- Concrete floor construction is required for all ground floors either power-floated or screeded, or screeded pre-cast planks.
- In changing rooms and showers, floor finishes must be flush and have durable, non-slip surfaces.
- Shower dry-off zones and changing rooms should be laid to fall towards the shower floor, which in turn, should fall to a drainage channel with a continuous lift out grille.
- The main entrance and changing entrances require mat-wells of at least 1.2m long x width of corridor.
- Floors outside the changing areas, especially in rooms at an upper level, can have less durable finishes and carpet is often preferred in these social spaces.
- Club, weights or fitness rooms that are adjacent to changing could have heavier use and need to be specified with care.

### Walls

- Internal walls must be strong enough to withstand impact and to support coat peg rails, kit bag racking and cantilevered benching. Brick, dense concrete block and modular concrete panels are suitable materials.
- Robust timber framing can provide quick and economic construction but must be carefully specified and detailed with particular attention to moisture protection. Wooden skirting should be avoided in changing rooms and corridors.
- Always raise stud-frame sole plates above slab level on a concrete curb.

- Partition lining should be plywood or glass fibre reinforced plasterboard. If plasterboard is used as a finish, it must be backed with plywood. Marine grade plywood is essential behind shower tiling.
- Walls to showers must be finished with ceramic tiles from floor to ceiling. If walls continue upwards to meet a pitched roof, tiles can be stopped at door height.
- Doors should be of solid core construction with good quality ironmongery and protected with kick plates.
- Doors giving access to changing accommodation or public lavatories must be self-closing

### Ceilings

- Pitched roofs incorporating roof lights invariably provide the most pleasant environment for changing.
- Lightweight suspended ceilings should not be used as they are rapidly vandalised.
- In two-storey buildings, the ceiling finish should be robust.
- Glass-fibre reinforced plasterboard should be specified throughout changing, shower and circulation areas.

### Benches

- Benches should be of slatted, light coloured hardwood or dense, solid plastic planks.
- Aluminium/steel canti-lever brackets for the benches can provide easier access for cleaning floors

### Coat Hooks

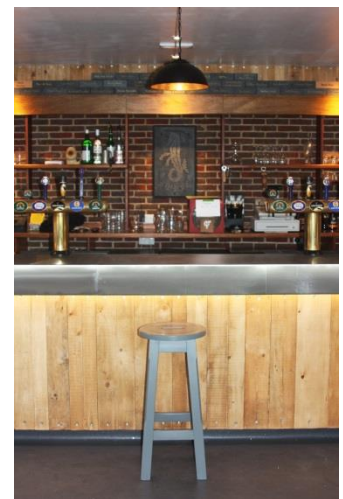
- Coat hooks should be mounted over benches and in shower dry-off areas. Provide two snub pattern hooks for each shower or bench space.

### Mirrors, Notice Boards etc

- Fix mirrors in each changing unit.
- Wipe boards to be fitted in home and first team changing rooms.
- Provide notice boards in the entrance area.
- Unisex changing rooms should provide a vanity area with shelf and hairdryer option.

### Heating

- Radiators or heaters should be sited beneath benches or in locations that prevent damage or burns.
- The heating should be controlled centrally with a time clock but with tamper-proof local thermostats to give a degree of limited local control and sensitivity. Frost protection must always be considered.
- Larger clubhouses will have a boiler or plant room which should be located for ease of service vehicle access.
- The type of heat source is dependent on the fuel available and pattern of use.
- Electric convector heaters are cheap to install and easy to control with thermostats and time clocks, but they do have high running costs and are generally of lightweight construction and rot and deteriorate rapidly. If they are used, they must be carefully selected and specified.
- For clubhouses/changing areas with continuous use, under floor heating using off-peak electricity and buried cables, or a water-based system with a gas boiler will provide lifelong low maintenance and comfort, but both systems are more expensive to install.
- Gas or oil-fired water-based central heating systems are likely to be the most appropriate for most clubhouses.
- Temperatures need to be: changing areas 20-22°; toilets and other areas 18-20°.
- Provide background heating to give frost protection in cold weather.
- Electric heaters must be robust and located for protection, for example beneath benches.



### Ventilation

- Good design of the heating and ventilation systems is important, not only to provide a comfortable environment but also to ensure that the problems of condensation and mould growth are avoided.
- Provide for efficient cross-ventilation throughout the building by fitting air bricks, grilles and/or trickle ventilators in external walls. Undercut internal doors or fit robust transfer grilles for ventilation when the building is locked up.
- Fit mechanical extracts to changing area toilets, kitchens and shower areas.

- All fans should be fitted with humidistats and over-run switches and provide eight air changes per hour.

### Insulation

- Consider the provision of insulation above Building Regulations standards and other associated regulations

### Lighting

- Light fittings should be fixed directly to the wall or ceiling and be of robust, moisture-resistant design. Avoid cutting through ceiling vapour barriers.
- Consider the use of presence detectors throughout.
- Provide 100-150 lux minimum throughout the changing block, with switching from a central, secure location.
- Consider the need for external lighting linked to time clocks or sensors.

### Power

- Provide an electrical intake and meter cupboard, even for the smallest clubhouse.
- Fit elevated, guarded power sockets for cleaning equipment throughout the changing areas.
- A corridor location is preferable and the circuit should be protected with a residual current circuit breaker.

### Other Electrical Services

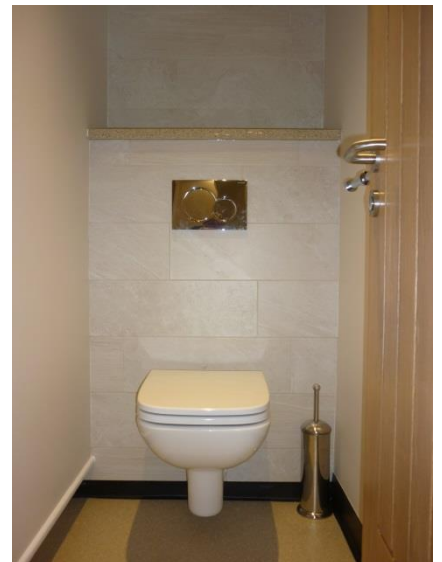
- Include a telephone in all but the smallest clubhouses.
- Consider an electronic security system and contact the local Crime Prevention Officer for advice.

### Water Services

- Wherever possible, pipework should be concealed in well-detailed, accessible ducts to reduce vandalism and to improve its appearance.
- Insulate all pipework and run beneath roof/ceiling insulation for extra protection and ease of maintenance.
- In 'all-electric' clubhouses, consider a central, multi-point heater in preference to individual shower or basin heaters with limited output.
- Hot water storage is wasteful except where there is continuity of use, for example in educational establishments.
- Cold water storage, if required, should be in an insulated tank above a shower or other drained area with a frost-protection heater.
- If a drinks vending machine is fitted, it will require a mains water supply.
- Use thermostatic mixing valves to control the flow and temperature of any stored water.
- Fit cylinders with centrally-located 7-day, 24-hour time switches.
- Provide bib-cocks in shower areas to allow hosing down.

### Sanitary Fittings

- Sanitary fittings must be specified with care:
- 'Back to wall' WCs assist with cleaning.
- Individual wall-hung basins are easier to maintain than a vanity top with inset basins. Note that it is essential that the basin mounting bracket is fitted with a substantial fixing.
- Stainless steel fittings are appropriate for some locations.
- Air-admittance valves, correctly installed, should be used in preference to roof vent terminals to avoid having to break through the roof finish.

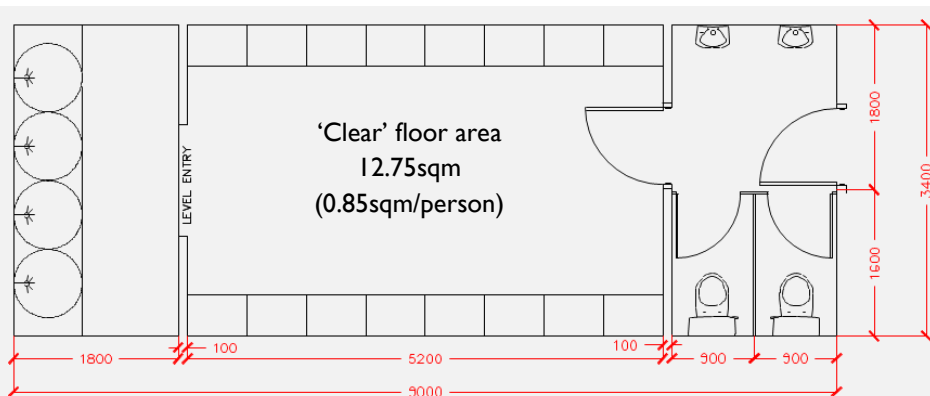


## STAGE 4 DESIGN – (C) DESIGN STANDARDS & SUBMISSION TO THE RFU AND RFF

### Changing Rooms – Recommended Standards

Changing room designs and layouts must comply with the following specific minimum RFU design standards. The RFU also reserves the right to provide feedback and comments on all aspects of the clubhouse project.

- At least two changing rooms must be capable of accommodating a minimum 18 persons and be identical in all respects
- Corridors serving the changing rooms must have a width of between 1200-1800mm in line with DDA requirements and should also be appropriate to the numbers using them.
- When calculating player changing room space, provide 0.85m<sup>2</sup> minimum 'clear floor area' per player. (*The term 'clear floor area' excludes the bench seating 'footprint' and any area taken by general circulation – door swings, access to showers etc.*). Each bench space must be not less than 650mm wide x 400mm deep. Island bench seating is not permitted. See Diagram 3.
- Layouts must provide flexibility for use by differing genders and age groups.
- All en-suite changing rooms must have enclosed privacy lobbies between the actual changing space and any adjacent corridor circulation. The en-suite lavatory space may satisfy this requirement
- If clothes storage lockers are included with changing, the recommended areas must be increased to accommodate the space taken up by the lockers
- In the following instances wheelchair access to the changing areas for parents or coaches should be considered by all clubs when designing their facility. It will be necessary for all designs to comply with Sport England's 'Accessible Sports Facilities' guidance note.
- When developing works, account must be taken on a proportionate basis of the needs of players, staff and visitors from ethnic or minority groups in the catchment area of the facility. Examples include enhanced levels of changing privacy, and particular hygiene requirements in toilets



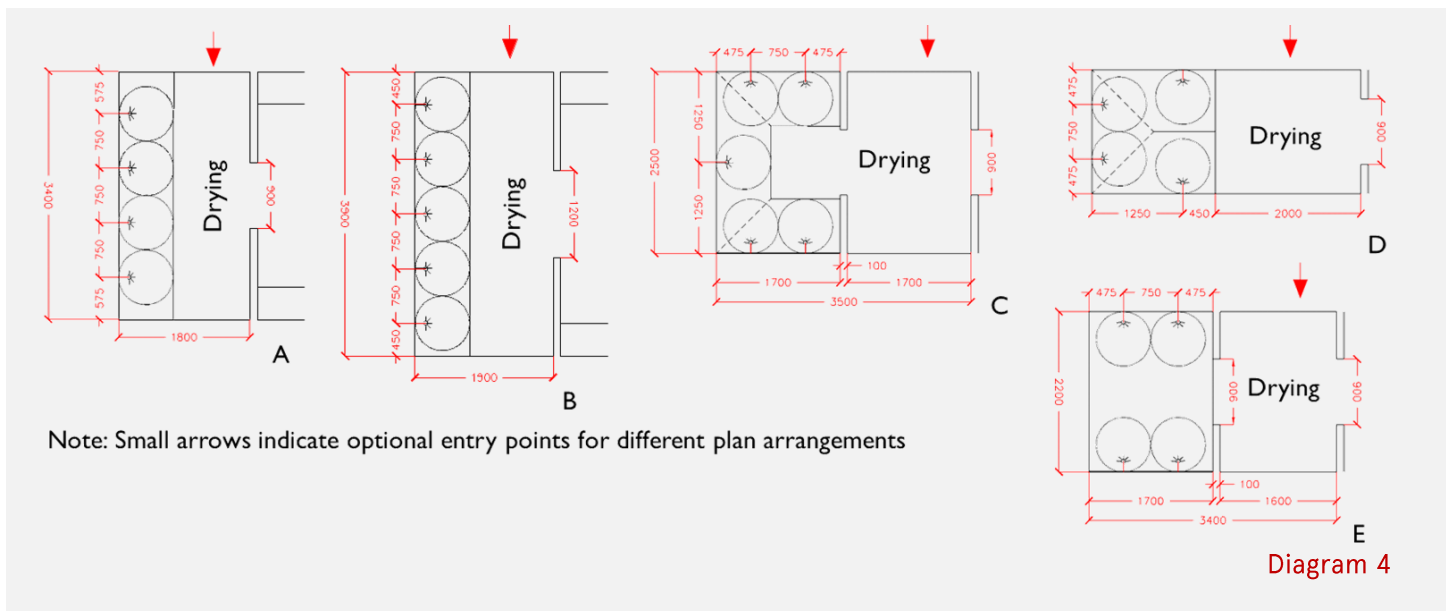
Total Area for 15/16 Person En-suite Changing Room = 30.6sqm  
Wash basins to be fixed at 700mm centres, minimum

Diagram 3

### Showers & Drying Spaces

- Each changing unit requires its own showers located as far as possible from changing entrances and WCs to minimise water migration and to separate mud and moisture
- All en-suite changing accommodation should follow the shower, toilet, wash hand basin ratios outlined in Table 1 below
- Allow a minimum of one shower point per four players
- Shower outlets must be fixed at a minimum 750mm centres, with a minimum of 450mm between end fittings and side walls. Fittings carried around an internal corner must maintain these minimum standards
- Showers on opposite walls should be spaced 2.5m apart to permit a central circulation route and will require a separate dry-off area at one end. Drying areas must be a minimum 0.85m<sup>2</sup> per shower head
- Further information on dedicated disabled shower units can be found in Sport England's Access for Disabled People Guide.





**Table 1 - En-suite changing room provision**

Player numbers	WCs	Basins	Showers	Standard	Bench Space
15-16	2	2	4	Minimum	650mm x 400mm
17/22	3	2	5	Minimum	
23+	4	3	6	Minimum	

**Table 2 - Communal changing room provision (design guidance only NOT eligible for RFU/RFF funding)**

	Number of players (to a maximum of)			
	30	66	96	126
WCs	3	4	5	6
Urinals	3	4	5	6
Wash basins	2	3	4	5
Showers	8	12	16	20

**Lavatories**

Each en-suite changing room must be equipped with a sanitary-ware to player ratio as outlined in Table 1 - En-suite changing room provision.

If a club is considering retaining communal facilities for a refurbishment project, minimum requirements are outlined in Table 2 above. In addition to the information in the table, the following must be achieved:

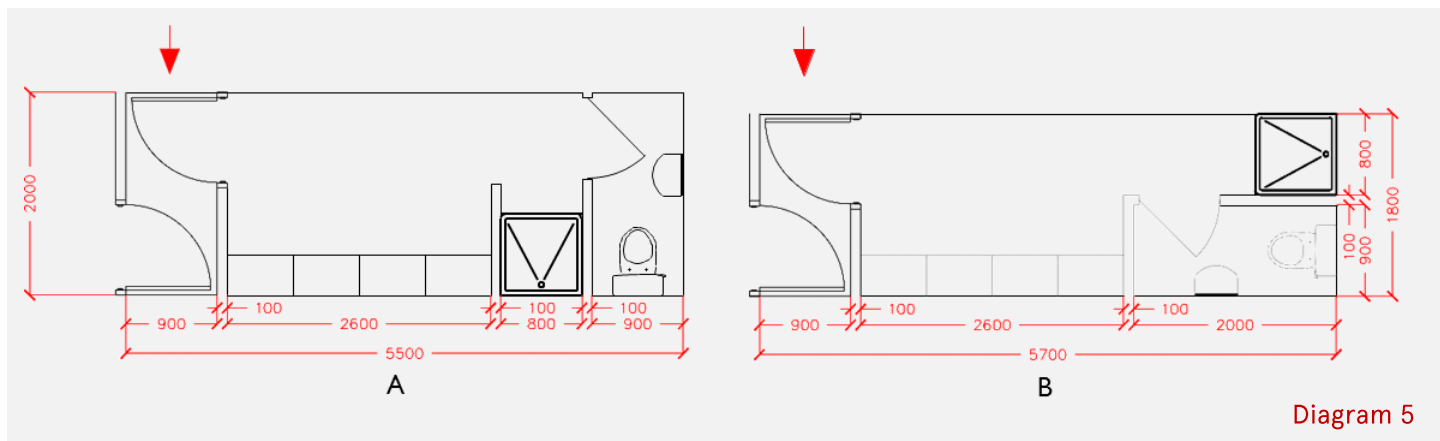
- Wash hand basins and urinal bowls must be fixed at a minimum of 700mm centres.
- Urinal trays are not permitted.

Please note, that communal facilities of any description are **not eligible** for funding from the RFU/RFF.



## Officials' Changing (Diagram 5)

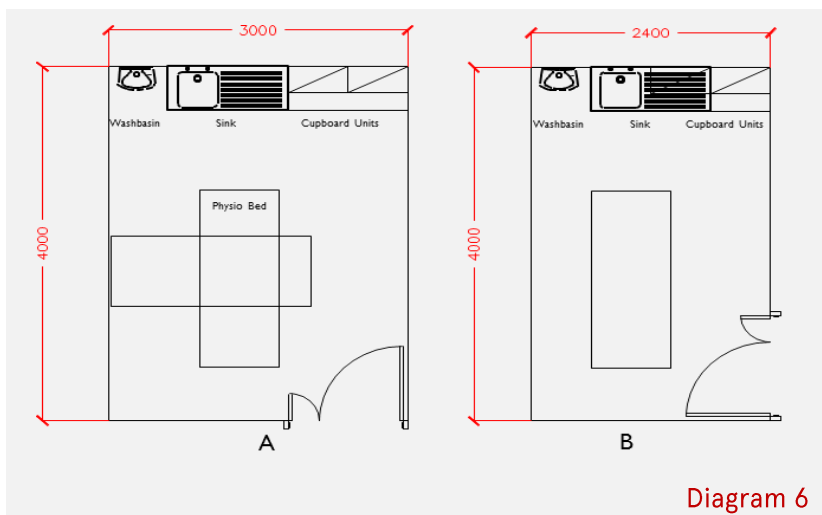
- The facilities must include a minimum one four person en-suite changing room for use by Match Officials.
- For new build and/or extensions schemes the RFU may also require a smaller second en-suite Officials' changing room to allow for male and female use.
- Within a refurbished scheme, the club should make suitable provision to meet its own equity policy when applied to match officials.
- The actual changing space for Officials must provide a minimum of 0.85m<sup>2</sup> 'clear floor area' per person.
- There must be one WC, one wash hand basin and one shower outlet with a dedicated adjacent drying space of at least 0.85m<sup>2</sup>.



## First Aid/Physio Room (Diagram 6)

Ideally the access to this facility should be located adjacent an entrance and close to pitches and car park. The door must be wide enough to allow easy passage for wheelchairs. The room must have sufficient space for a bed/couch, a sink and drainer and storage cupboards for medical supplies and equipment, *base and wall units*). It must also have a separate wash hand basin.

If this facility is also intended to be used for physiotherapy then there must be adequate space around the table to allow the therapist to work unhindered.



## Cleaners' Store

A lockable cupboard for cleaning materials is the minimum provision required. For multi-team clubhouses, provide a store with shelving and a bucket sink adjacent to the changing rooms.

## Club Room

The club room should have large windows for viewing the principle activity. Consider the range of potential uses that the club room could accommodate. Provide a store for furniture, so that part of the floor can be cleared for dancing, and allow space for any sports equipment.

### SUBMISSION OF A PROPOSAL TO THE RFU OR RFF

If you are seeking funding from the RFU/RFF, in addition to completed application forms, your submission should include:

- Feasibility study/architectural brief.
- Performance standards and specifications (mechanical and engineering).
- A full planning application **MUST NOT** be submitted without first receiving written confirmation from the Rugby Football Foundation that the proposed scheme has been approved by the Trustees with respect to space and facility provision.
- Design Drawings - At the earliest stage of the project the RFF must be provided with paper copies of all existing and proposed floor plans to the preferred scale of 1:100. A site plan will also be required to a scale of 1:500 or 1:1250 showing the relationship of the proposed new build to any existing structure. It must also show the location of the pitches, clubhouse parking and vehicular entrance and site boundaries.
- Detailed professional budget estimate or at least three detailed competitive tenders.

A quick reference guide to the RFU Design Standards is included as [APPENDIX 4](#)

## STAGE 5: PLANNING PERMISSION AND BUILDING REGULATIONS

### Planning Permission

Planning permission enables the local authority to control the scale, appearance and location of a development. There is a legal requirement to secure planning permission for most types of construction before any work is undertaken. Do not pursue a full planning application before your final design has been signed off by the RFU/RFF. However, an initial conversation about your project with the local planning department may well be useful.

There are various types of planning application. The two which are most commonly used for this type of development are:

#### Full Planning Application

This is the most commonly used type of application. Once this permission is granted, the layout and detail of the scheme including the way it looks would be fixed. Further details regarding specific items may be required by the planners prior to commencement of work on site. There is a fee to pay to the Local Authority which is based on the floor area of the proposed building.

### Outline Planning Application

Outline planning applications are appropriate when an applicant is seeking agreement 'in principle' to a proposed development, but without being committed to a particular form of design or layout. This can be less expensive to obtain than full planning permission in itself. Outline planning approval generally requires a 'Reserved Matters' application to be submitted within 3 years. This reserved matters application is to provide information on the building design to the same level of detail as would be required for a full planning application.

### Building Regulations

Building Regulations are entirely different to planning permission. They relate to the technical aspects of how a building is designed and constructed. They require the local authority or an approved inspector to ensure that the current standards of construction are met and that the structure of a building is safe. The building inspector is the person at the Building Control department who will inspect drawings and the works on site. At the end of the approval process a 'Completion Certificate' will be issued to show that the work is compliant with the required standards. The Building Control department should be consulted at an early stage in a clubhouse project.

There are three types of Building Regulations Application and these are outlined below.

#### Full Plans Procedure

The type of application most commonly used is the Full Plans Procedure. Detailed drawings are required to be submitted in advance of any work on site. The Building Control department will issue a notice stating either an approval, which allows you to begin work immediately, or a Conditional Approval which will ask you to provide further information or the application can be rejected. If the application is rejected, you may be asked to make amendments to your plans and you will be required to resubmit your application.

#### Building Notice Procedure

This method is only ideal for very small projects. You can submit a Building Notice with only 48 hours' notice of starting work on site. When submitting a Building Notice you should be aware that you may be asked for additional information as your project proceeds and the Building inspector may require changes to work already built.

#### Regularisation Certificate

If work has been carried out in the past without building regulation approval, it is possible that retrospective approval can be given. This process requires the issuing of a "regularisation certificate" by the building inspector. This method is very risky and not recommended by the RFU. At worst, the local authority can demand that you open up the works and take remedial action should the works not be deemed to comply.

There is a fee associated with all types of application.

A checklist of clubs' statutory requirements is included as [APPENDIX 5](#)

## STAGE 6: PROCUREMENT

### What is Procurement?

The term 'procurement' is used to describe the procedure in 'getting a building built'. The principle procurement routes used for this type of project are as follows:

#### DESIGN & BUILD

By setting out the needs, performance and quality standards in some form of outline design and specification documents it is possible to tender the work earlier and allow for some of the detailed design to be carried out by the contractor. This means that time can be saved as some of the design work can be finalised at the same time as the construction gets underway. It also means that the contractor gives a price for the work at an earlier stage so there is more certainty about costs. However, unless the club is confident that they have included enough information about exactly what they want, it can result in a loss of control over some parts of the design and/or an increase in costs if the specification is changed. This approach is often referred to as 'Design and Build' although the balance between 'design' and 'build' aspects can vary considerably.

#### TRADITIONAL PROCUREMENT

By appointing a design team and developing the project in great detail, the club will retain greater control over the quality and cost, but as the construction process can only start once all the designs are completed, this may take longer. This is often referred to as 'traditional' procurement.

#### MANAGEMENT CONTRACTING

It is also possible to divide the proposed building work into a number of separate packages. These packages can then be tendered and contracted separately with the process carefully overseen by an experienced project manager. This approach can have advantages in keeping control of quality standards and timescales, but to ensure proper coordination and sequencing of the packages and to avoid disputes and increased costs, it needs to be overseen by a suitably experienced and knowledgeable person. This approach can carry more risk on both budget and liability.

The most appropriate method will depend on the nature and scope of works, how the risks are allocated, design responsibility, co-ordination and the basis of costs.

The differing forms of contract either place more risk on the contractor or allow the employer to retain a degree of risk-for a reduced price. A suitably qualified person such as an Architect or Quantity Surveyor can advise on the best form of procurement for a particular project.

As well as proportioning risk, the various building procurement methods each place different emphasis on the relative importance of three main variables; cost, programme and quality. Generally, if the contract favours one of the three, there is less control over the other two.

## STAGE 7: CONSTRUCTION – HEALTH AND SAFETY

Health and safety is a body of law that protects the health, safety and welfare of those working on or visiting construction sites. The current regulations are The Construction (Design and Management) Regulations 2015 (CDM 2015).  
[www.hse.gov.uk/simple-health-safety/index.htm](http://www.hse.gov.uk/simple-health-safety/index.htm)

There is a legal requirement under the CDM regulations to meet Health and Safety requirements for all projects no matter what the size. The main duty for clients is to make sure their project is suitably managed, ensuring the health and safety of all who might be affected by the work, including members of the public

For further information on Clients responsibilities under CDM regulations, please refer to:  
[www.hse.gov.uk/construction/cdm/2015/responsibilities.htm](http://www.hse.gov.uk/construction/cdm/2015/responsibilities.htm)

The key appointments within the regulations are those of ‘Principle Designer’ and Principal Contractor’. These appointments must be made in writing. It is also the client’s responsibility to take reasonable steps to ensure that the ‘Principal Designer’ and the ‘Principal Contractor’ comply with their duties.

### Principal Contractor

The ‘Principal Contractor’ must plan, manage, monitor and coordinate Health and Safety in the construction phase of the project. The ‘Principal Designer’s role will often continue once a ‘Principal Contractor’ is appointed. The ‘Principal Designer’ will assist with compiling the ‘as built’ record information.

### Principal Designer

The ‘Principal Designer’ must plan, manage, monitor and coordinate Health and Safety in the pre-construction phase of the project. The ‘Principal Designer’ role does not necessarily have to be undertaken by the designer of the project. It can be carried out by anyone who has an impact on the design and is usually carried out by the Architect or the Project Manager. If the client fails to appoint the ‘Principal Designer’, then the client assumes the role. However, the client must have the skills, knowledge, experience and (if an organisation) organisational capability, to carry out all the functions and responsibilities of the ‘Principal Designer’.



Complying with HSE The ‘Principal Designer’ and ‘Principal Contractor’ appointments will be required for the majority of clubhouse projects. The only exception is when all of the work (including design work) is to be undertaken by a single contractor. Note however, in this regard, every sub-contractor (e.g. plumber, electrician, decorator) is a ‘contractor’, therefore all projects employing a sub-contractor require a ‘principal contractor’ appointment. For further information please refer to the HSE website at: <http://www.hse.gov.uk/construction/cdm/2015/summary.htm>

### What happens if we don’t comply?

The club will be legally liable for any accidents that occur. Serious breaches of health and safety legislation on a construction project could result in construction work being stopped by HSE or, at worst, the club could be prosecuted.

## STAGE 8 MAINTENANCE

An appropriate construction contract should include a 12 months defects period which is the responsibility of the contractor. Beyond this period, notwithstanding any enhanced maintenance contractor obligations, the club is responsible for the on-going upkeep and compliance of the facility.

Clubs may consider a formal maintenance contract with a specialist company or opt to take on board the maintenance operations in-house. The key information outlined in this section is useful whichever approach has been adopted.

### MAINTENANCE OVERVIEW

#### WHY?

Maintenance of the clubhouse is important to:

- Maintain user appeal
- Protect the value of the clubhouse asset
- Safeguard against breaches of statutory health and safety regulations
- To prioritise budgets

#### HOW?

Adopt a simple systematic approach:

- Refer to existing club records (such as drawings and operation & maintenance manuals)
- Undertake periodic reviews
- Keep comprehensive records
- Use appropriate resources

#### WHO?

Initial visual assessment by club member(s) (subject to building related knowledge and expertise and safe access)

More detailed inspections and advice by specialists:

- A Building Surveyor or Architect
- A General Builder
- A Specialist Contractor

All work should be carried out by suitably trained operatives

### PRIORITY MAINTENANCE ISSUES

#### Inspection and testing of electrical installations

Carry out 5 yearly electrical test and where necessary undertake works detailed within the report.  
<http://www.hse.gov.uk/pubns/indg354.pdf>

#### Portable appliance testing (PAT)

Commission periodic PAT test by a Competent Person or Electrical Safety Contractor  
<http://www.hse.gov.uk/electricity/faq-portable-appliance-testing.htm>

#### Fire risk: Assessment/alerts/means of escape/equipment

An up-to-date log book with review of risk assessment and checks for compliance of fire alarms, means of escape, fire doors and key building features in accordance with The Regulatory Reform (Fire Safety) Order 2005 (RRO or FSO)  
<http://www.hse.gov.uk/toolbox/fire.htm>

#### Gas and oil heating systems

Commission inspection and agree suitable servicing programme

#### Kitchen

Commission gas safe contractor and agree suitable servicing programme  
<http://www.hse.gov.uk/gas/domestic/newschemecontract.htm>

#### Water monitoring and maintenance

Contract for water monitoring and maintenance for the prevention of Legionella  
<http://www.hse.gov.uk/legionnaires/faqs.htm>

A 'most likely defects' checklist relating to maintenance is attached as **APPENDIX 7**

## CONTACTS

AREA FACILITIES MANAGERS					
AREA 1	AREA 2	AREA 3	AREA 4	AREA 5	AREA 6
Jon Bendle <a href="mailto:jonbendle@rfu.com">jonbendle@rfu.com</a> 07753 881 272	Jason Bowers <a href="mailto:jasonbowers@rfu.com">jasonbowers@rfu.com</a> 07703 466 773	Rick Bruin <a href="mailto:rickbruin@rfu.com">rickbruin@rfu.com</a> 07738 029 211	Pete Shaw <a href="mailto:petershaw@rfu.com">petershaw@rfu.com</a> 07734 070 674	Tom Bartram <a href="mailto:tobartram@rfu.com">tobartram@rfu.com</a> 07841 156 806	Alex Bowden <a href="mailto:alexbowden@rfu.com">alexbowden@rfu.com</a> 07764 336 701
Cornwall Devon Dorset & Wilts Gloucestershire Somerset	Berkshire Buckinghamshire Hampshire Hertfordshire Middlesex Oxfordshire	Essex Kent Surrey Sussex	East Midlands Eastern Counties Leicestershire NLD Warwickshire	Cheshire Lancashire North Midlands Staffordshire	Cumbria Durham Northumberland Yorkshire
Ted Mitchell, Club Facilities Technical Manager <a href="mailto:tedmitchell@rfu.com">tedmitchell@rfu.com</a> 07738 029212					

Please note: whilst every effort has been made to ensure the accuracy of the information contained in this guide, any party who makes use of any part of this document in support of clubhouse or changing room construction shall indemnify the Rugby Football Union (RFU) & Rugby Football Foundation (RFF), its servants, consultants or agents against all claims, proceedings, actions, damages, costs, expenses and any other liabilities for loss or damage to any property, or injury or death to any person that may be made against or incurred by the RFU arising out of or in connection with such use.

The information in this guide supersedes any previously issued by the RFU and RFF.

January 2018



**TEAMWORK RESPECT ENJOYMENT DISCIPLINE SPORTSMANSHIP**

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# **APPENDICES**



# Rugby Club Project Brief

## EXAMPLE

1.	Background
2.	Existing Club and Facilities
3.	Changing Facilities
4.	Car Parking.
5.	Budget Costs
6.	Summary

## 1. BACKGROUND

Rugby Club RUFC plays at step 8 in the rugby pyramid, with its first XV competing in Midlands Division 3 East (South). The club has grown in recent years in terms of its playing numbers and has shown good endeavour and industry in updating its facilities to cope to the best of its ability with that increase in participation.

As things stand right now, the club runs the following teams:

- 3 senior sides playing on Saturdays.
- 1 Veterans team playing occasional fixtures.
- 9 mini and junior age groups from U6's to U 15's.



The rugby club site presently comprises the following:

- Access from the A312
- Car Parking for 63 cars in the main car park, plus adhoc parking at the rear of the clubhouse
- A clubhouse comprising; Recently refurbished social facilities (main clubroom and smaller rear lounge bar); Large catering kitchen for after match food and function catering; Disabled access and toilet; Club shop; Office; 4 team changing rooms; Communal showers; Officials Changing; Storage
- Rugby pitches as follows; 1st pitch at 100m x 65m with 8m in goal area; 2nd pitch at 90m x 60m; 3rd pitch at 90m x 68m; 4th pitch at 70m x 40m

## 2. EXISTING CLUB AND FACILITIES

### Positive Features and Strengths

- Good quality social facilities which assists in earning revenue to ensure a sustainable club and provide funds to invest properly in maintenance.
- Good quality catering facilities.
- Disabled access and toilet facilities.
- Strong organisational attributes of a solid club committee.
- Good volunteer base and track record for running senior teams, junior and mini teams, keeping the site properly maintained, having the right numbers of qualified coaches, first aiders, referees, etc.
- Owns freehold interest in site.
- No onerous debts.
- Quality of pitches is generally very good (classed as “consistently excellent” in the latest playing pitch strategy. This is despite being informed by the groundsman that the soil make up is topsoil overlying dense clay.

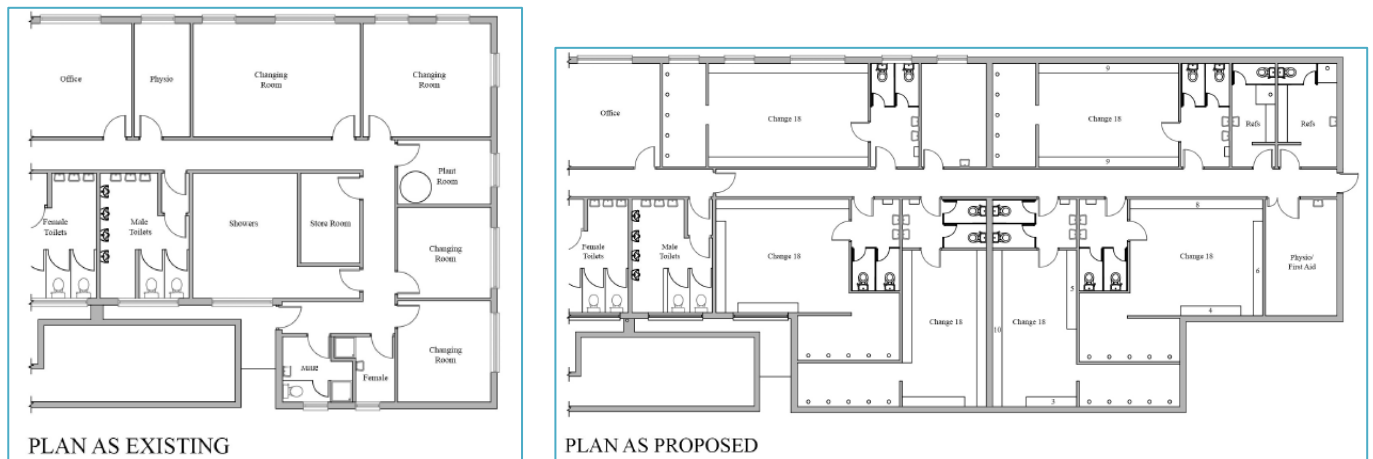
## Negative Features and Weaknesses

- Despite the changing rooms being well maintained, they are generally undersized (with the exception of the home 1st XV changing room) and all only have access to communal showers. This means that they do not meet design criteria and makes development of women's and girls' rugby very difficult. It also means that junior use of these facilities is a challenge.
- Car parking is limited at the moment and is particularly a challenge on busy Sunday mornings, when overspill car parking on grass areas is needed to keep the road network from becoming very congested.
- With regard to demand when population growth was factored in the Strategy identified the following likely outcomes:

## 3. CHANGING FACILITIES

At the moment, the club only has four changing rooms and these are not compliant with the relevant literature "Clubhouses and Changing Rooms" – the RFU's Guidance Note and "Pavilions and Clubhouses" – Sport England's Guidance Note.

We have surveyed the changing rooms and have provided a layout as existing of the changing area – updating plans that the club held to take account of some recent layout changes.



In order to properly accommodate the present and possible future needs of the club, we have looked at how this layout could be adapted and extended to provide 6 compliant team changing rooms to meet the necessary design criteria.

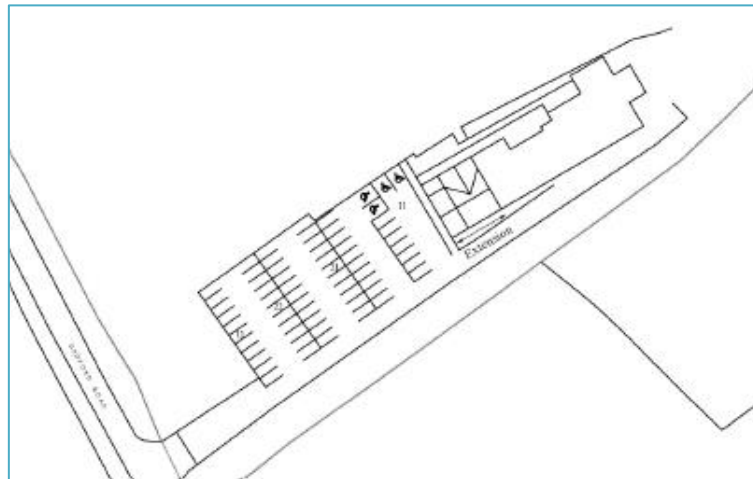
Where possible, we have attempted to use existing walls and keep the works as simple as possible in the existing part of the building. This change gives the following accommodation:

- 6 x 18 person changing rooms, complete with en-suite showers (5 per changing room), en-suite toilets and WHBs.
- 2 x referees changing rooms complete with shower, WC and WHB.
- Physio / first aid room with convenient access to pitches and car park (for ambulance access).
- Extended element of the building will fit in well with the existing building in terms of its massing and making the roofs run through.
- These changing rooms would also meet the criteria for football and most other team sports.
- The extended part of the building projects 14.4m into the existing car park area. The total internal size of the extension is 173m<sup>2</sup>.

The design of the changing rooms in this configuration means that each changing space is self-contained. Each changing room can therefore concurrently accommodate uses by different gender, different age group, etc. without being compromised in any way. That is not possible with the existing arrangement, where there is one large communal shower area.

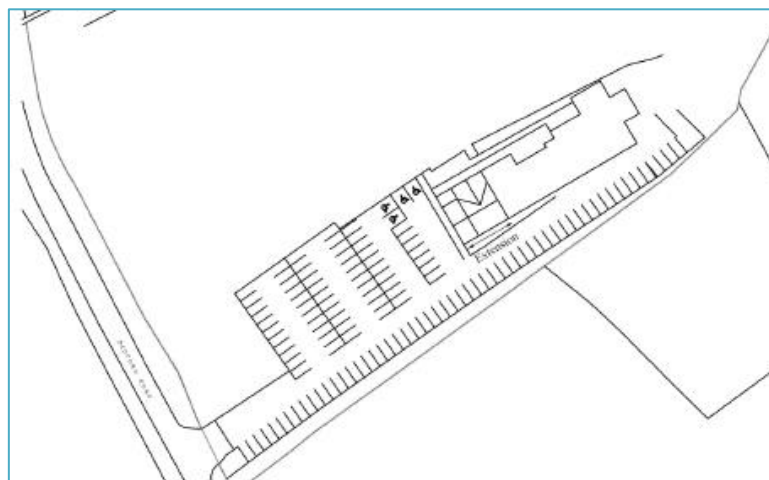
#### 4. CAR PARKING

The car park area is quite significantly affected by this proposal. At the moment, the existing car park accommodates 84 cars in marked spaces.



The drawing above shows that new extension would reduce car parking from 84 marked spaces to 65 marked spaces (including 4 designated disabled spaces). Whilst the extension to the changing rooms would improve the situation for the rugby club in terms of its ability to accommodate more concurrent matches, it has a marked negative affect on how many cars can be parked in marked spaces.

We realise that whilst this would present a boost for changing, the resultant loss of car parking spaces would not be acceptable. We therefore looked how this could possibly be rectified and came up with the following;



The above plan shows the retained 65 cars that remain on the existing marked car park, but utilising the strip of land in the ownership of LandBank Ltd, this could accommodate another 56 car parking spaces. We understand that this strip of land is retained by LandBank Ltd to access the field to the east of the rugby club with farm equipment. Obviously, once the field to the east is developed with housing, this access would not likely be required and LandBank Ltd may be amenable to a sale of that land to the club. Regardless of them selling or not, a deal still may be able to be struck on a lease basis.

If agreement CAN be reached with LandBank Ltd to allow these parking spaces to be developed, the club's marked car parking spaces would be significantly improved.

With these additional 56 spaces added to the retain 65, this would give a total of 121 marked spaces, compared with 84 marked spaces now. Access to the land beyond the clubhouse is STILL retained.

## 5. BUDGET COSTS

Changing room works	£325,000
Car park extension	£59,000
Planning Application and Building Regs	£2,300
Professional Fees @ 12%	£46,000
<b>Sub total</b>	<b>£432,300</b>
VAT @ 20%	£86,460
<b>Total</b>	<b>£518,760</b>

It is likely that the VAT on the changing rooms would not be recoverable, as it is expenditure for future exempt supplies. It is crucial for each club to ascertain its specific VAT liability on any project as the financial implications can be significant. The RFU provides bespoke VAT guidance to clubs as part of the project development support on offer.

## 6. SUMMARY

This Project Brief outlines the options available to the rugby club in terms of developing facilities to cope with expected future demand.

Feedback from the rugby club has indicated that in order of preference, the following areas of development will be pursued:

1. Discussions to take place with LandBank Ltd about the strip of land in their ownership at the side of the existing car park.
2. Strip to be metalled to provide extra car parking as detailed earlier in this report.
3. Refurbishment and extension of changing rooms as detailed earlier in this report.





Where possible, all design team individuals should be appointed at the outset of a project to allow complete collaboration between all parties.

#### PROJECT MANAGER

The project manager (PM) should be appointed at the outset of a project to be the driving force in developing the project and managing and coordinating the inputs from the consultants, contractors and other stakeholders.

On a typical project the activities to be undertaken by the project manager should include:

##### Pre-Construction Stage

- Identifying the clubs needs and developing the brief
- Selecting, appointing, leading and managing project team members
- Identifying and managing the project risks
- Establishing communication routes
- Establishing time, cost, quality and Club constraints
- Managing the feasibility and strategy stages
- Establishing the project budget and project programme
- Coordinating legal and other regulatory consents
- Managing the integration and flow of design information
- Managing the preparation of design programme
- Advising on alternative procurement strategies
- Advising on risk management strategy
- Conducting tender evaluation and contractor selection

##### Construction Stage

- Establishing change control procedures (who is authorised to give instructions?)
- Controlling, monitoring and reporting on project progress
- Controlling, monitoring and reporting on project cost
- Administering consultant appointments and construction contracts
- Establishing processes for monitoring quality
- Arranging, chairing and recording regular progress meetings
- Reviewing contractors reports
- Authorizing interim and final payments to the contractor
- Ensuring that testing and commissioning proposals are agreed and adhered to
- Ensuring that all CDM documentation and contractual paperwork are issued

##### Post Construction Stage

- Establishing procedures for dealing with defects
- Ensuring that identified defects are swiftly rectified
- Agreeing final account
- Issuing final paperwork and authorizing the final payment

A project manager may also be required to seek specialist input on issues such as IT, Security, Catering, Legal, Finance etc and to clarify and integrate their respective advice/requirements.

Where a project manager is also required to undertake the role of Employers' Agent (EA), or that of Contract Administrator (CA), they should pay careful attention to understanding the situations where they may act in a partisan manner on behalf of the Club or where the contract requires them to act impartially between the Club and the Contractor.

#### ARCHITECT / DESIGNER

An architect / designer should also be appointed at the outset of a project to assist the Club throughout the development of the project from conception through to the complete design. The architect will assist the Club, and manage any other designers, in developing the project from initial concept sketches through to a complete full design (subject to procurement route), including any necessary design details and specifications, in accordance with any current legislation and design guidance. Their duties would typically include:

## Pre-construction Stage

- Visit the site, carry out an initial appraisal and assist the PM in developing the Initial Project Brief
- Prepare and discuss alternative options in a feasibility study for the project
- Agree the project budget with the PM
- Advise on the project roles/other members of the project team required to carry out the project
- Arrange site investigations/condition surveys
- Prepare a preliminary Concept Design and discuss with the Club
- Develop the Concept Design and Final Project Brief
- Provide updated cost information
- Submit Concept Design, Final Project Brief and Cost Information for approval
- Develop design with the rest of the project team
- Make an application for detailed Planning Permission where necessary
- Develop the Technical Design in sufficient detail to enable tenders to be obtained (dependent upon procurement route)
- Co-ordinate and integrate the designs of other project team members
- Make an application for Building Regulations Approval
- Prepare documents required for tendering purposes, including an appropriate form of Building Contract, contract conditions, schedule of works/specification, and design drawings
- Advise on potential contractors to be invited to tender
- Invite, appraise and report on tenders with the PM
- Prepare and issue the Building Contract
- Provide the Contractor with information required for construction
- Review design work produced by contractor's specialist subcontractors

## Construction Stage

- If required visit the site to see that work is proceeding in accordance with Building Contract
- Give general advice on maintenance if required

## OTHER SPECIALIST DESIGNERS

Projects which involve a high level of Mechanical or Electrical Works, or which involve complex structural elements, may require additional specialist design input.

## CONTRACT ADMINISTRATOR

A Contract Administrator (CA) or Employer's Agent (EA) may be appointed to undertake some of the construction stage tasks that would otherwise fall to the project manager (e.g. issuing of payment certificates, instructions, practical completion and end of defects certificates).

## QUANTITY SURVEYOR

A quantity surveyor (QS) may also be appointed to provide advice on both procurement and contractual issues. A quantity surveyor will also be able to undertake interim and final valuations of the work completed, provide advice on costs, and cost management throughout both the pre-construction and construction stages of a project.

## CDM2015

To meet the statutory requirements of the CDM2015 Regulations, the following appointments will need to be made:

- Principle Designer: Required to plan, manage, monitor and co-ordinate Health & Safety throughout the pre-construction stage of a project. It is usually carried out by the architect or project manager.
- Principle Contractor: Required to plan, manage, monitor and co-ordinate Health & Safety throughout the construction phase of a project. It is likely that the Main Contractor will be appointed as the Principle Contractor.

A Feasibility Report is needed to assess the realistic options and to inform whether or not a proposal is viable before investing significant time and money into design development.

As a minimum, the Feasibility Report should cover the following:

#### 1. Introduction

This provides a brief introduction to the Client aims and objectives, the reasons for the project and an outline of the scope of the works.

#### 2. Site Details

This section outlines details on any site specific issues which may have a significant impact on the proposed project and will vary significantly depending on the scope and type of project (refurbishment, extension or new build). Within this section we would generally expect to detail the following:

- a) An aerial photo or site location plan showing the location of the site for development and the local area
- b) A brief assessment of any existing structures (if the proposed project is an extensive refurbishment then a Condition Survey should be carried out), detailing any areas which require further investigation
- c) An overview of the existing facilities and services within existing structures or across the site
- d) Plan of the existing layout (only for refurbishment or extension)
- e) Photos of any significant areas

#### 3. Design Proposals

This should summarize the scope of works and provide proposed and existing sketch plans/elevations for each option under consideration.

#### 4. Budget Costings

This identifies a budget estimate for the cost of each option identified in the Design Proposals. Estimates should include construction costs, contingencies, professional fees, survey fees and statutory fees and VAT.

#### 5. Risks

This section should log all areas of risk. Many of these risks may relate to the suitability of existing services or ground conditions, which will later need to be surveyed to provide greater cost certainty.

#### 6. Statutory Requirements

This provides a brief overview of the statutory requirements applicable to the project.

#### 7. Project programme

This presents indicative timescales for all stages of the project.

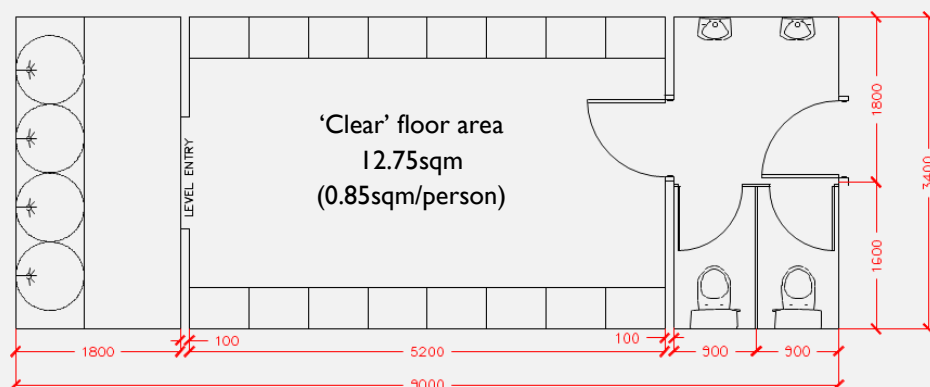


## APPENDIX 4

### RFU AND RFF REQUIRED DESIGN STANDARDS - QUICK REFERENCE GUIDE

#### CHANGING ROOMS

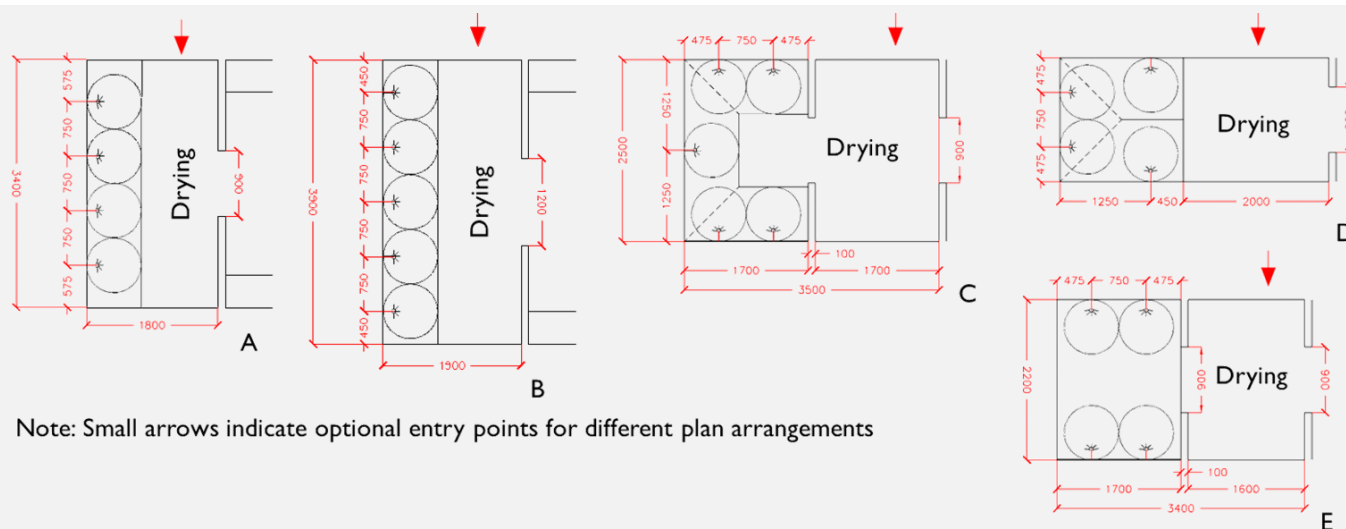
- X2 changing rooms must accommodate 18 people
- Corridors must be 1200mm-1800mm
- Provide 0.85m<sup>2</sup> minimum 'clear floor area' per player
- Each bench seating space must be 650mm wide x 400mm deep
- Layouts must provide flexibility for use by differing genders and age groups



Total Area for 15/16 Person En-suite Changing Room = 30.6sqm  
Wash basins to be fixed at 700mm centres, minimum

#### SHOWERS, DRYING SPACES AND TOILETS

- All changing rooms must have en-suite showers and toilets
- X1 shower point per x4 players is required
- Shower must be at least 750mm centres and 450mm from end fittings and side walls
- Showers on opposite walls should be spaced 2.5m apart
- Drying areas must be a minimum 0.85m<sup>2</sup> per shower head
- Wash hand basins and urinal bowls must be fixed at a minimum of 700mm centres. Urinal trays are not permitted.



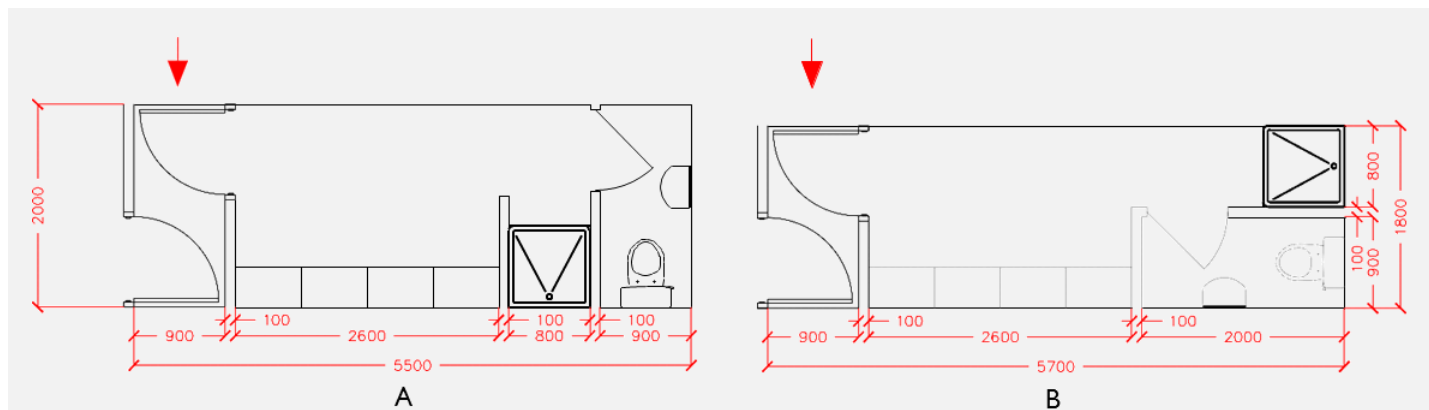
Note: Small arrows indicate optional entry points for different plan arrangements

#### En-suite changing room provision

Player numbers	WCs	Basins	Showers	Standard	Bench Space
15-16	2	2	4	Minimum	650mm x 400mm
17/22	3	2	5	Minimum	
23+	4	3	6	Minimum	

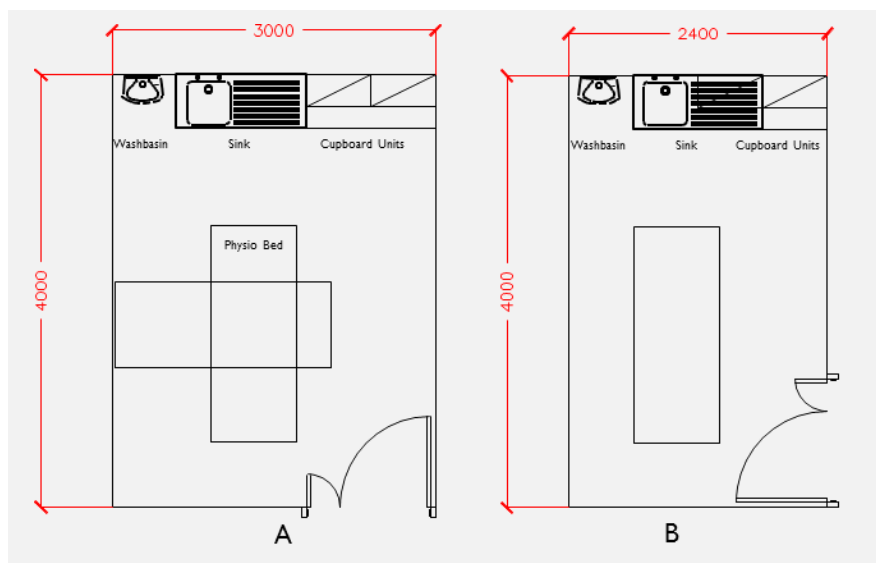
## OFFICIALS' CHANGING

- At least one x4 person en-suite changing room must be provided for use by Match Officials.
- This must provide a minimum of 0.85m<sup>2</sup> 'clear floor area' per person.
- There must be x1 WC, x1 hand basin and x1 shower with an adjacent drying space of at least 0.85m<sup>2</sup>.



## FIRST AID/PHYSIO ROOM

If this facility is also intended to be used for physiotherapy then there must be adequate space around the table to allow the therapist to work unhindered.



These plan arrangements are not exhaustive and other layouts are possible. However, space and facility provision criteria, as described in this Guidance Note, must be adhered to.

**RFU CHANGING ROOM & CLUBHOUSE  
STATUTORY REQUIREMENTS CHECKLIST**



When undertaking construction works (whether refurbishment, extension or new build), there are a number of obligations, that the Club would need to ensure are complied with. Some will be enforced by the contract between the Club and the appointed contractor (e.g. paying on time) some will be RFU Award Conditions and some will be statutory requirements.

To assist clubs, those commonly recurring Statutory Obligations are identified below in checklist format. The checklist format is an ongoing document intended to be retained by the club as a tracker to monitor progress and highlight the residual statutory risk areas.

**STATUTORY REQUIREMENTS**

	YES	NO	COMMENTS
<p><b>Planning Permission</b></p> <p>Does the scheme require planning approval?</p> <p>Has planning approval been granted?</p> <p>Are there any pre-commencement conditions to be discharged?</p> <p>Are there any pre-use conditions which need to be discharged?</p> <p>Are all parties aware who will be discharging these conditions?</p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	
<p><b>Building Regulations: Stage 1 Plans Approval</b></p> <p>Has the Approved Inspector reviewed the proposals?</p> <p>Have changes been made since and have these been reviewed?</p> <p>Have the proposed plans been approved?</p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	
<p><b>Building Regulations: Stage 2 Site Inspection</b></p> <p>Has the Approved Inspector been informed of the project start date?</p> <p>Have the Stage 1 and 2 fees been factored into the project budget?</p> <p>Who will be responsible for paying the fees?</p> <p>Who will be responsible for arranging site inspections?</p> <p>Has final approval been granted?</p> <p>Has the final building regulations certificate been received?</p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	
<p><b>CDM 2015 Regulations</b></p> <p>Are you aware of your obligations as the client under CDM2015?</p> <p>If the project is notifiable, has the F10 Form been issued to the HSE?</p> <p>Has a Principle Designer been appointed?</p> <p>Has a Principle Contractor been appointed?</p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	

Please note that other mandatory requirements could apply if the project involved any of the following:

- Work to adoptable roads – Highways Department Approval
- Work to mains services – Utilities Companies Approval
- Archaeological discoveries – Local Authority Inspection/Instruction
- Identification and removal of hazardous materials e.g. asbestos



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## PLANNING CONSTRUCTION & IMPROVEMENT WORKS



**Is your club expanding? If you are planning to build a new clubhouse, extend your current premises, knock two rooms into one, erect floodlights, or any other type of construction or improvements then you should have a Contract Works Policy in place to cover the work.**



### Q: What is a Contract Works Policy?

**A:** A standalone policy that provides covers for loss or damage to temporary and permanent construction works, plus materials should they be damaged or stolen prior to completion, and can be used to cover new buildings, refurbishments, repairs or extensions.

### Don't forget to extend your club's insurance!

Whatever the nature of the construction work, it is important that you ensure you have the appropriate cover in place; just because you currently have buildings insurance in place doesn't mean that you're automatically covered.

Any renovation, redevelopment and extension work should have a **Contract Works Policy** in place. This provides cover for loss or damage to temporary and permanent construction works and also includes materials that may be damaged or stolen prior to completion. A Contract Works Policy can also be used to cover new building or repairs.

### First steps?

**Before any work begins**, and as early in the planning stage as possible, you should notify your insurance company/broker (Perkins Slade RFU Helpline **0121 698 8001**) to discuss this additional cover and get it in place for the duration of the works.

- Obtain full details of the nature of the contract works, including details such as:
  - Will it include heat sources such as welding?
  - Will there be external scaffolding?
  - Will roofing work increase the chance of water damage?
- Check security conditions: will the site need to be secured with fences, locks or additional security?
- Your insurer/broker will discuss cover for accidental damage that may be caused by flood, storms or fire - or recommend an "all risks" scheme (subject to pre-agreed exclusions).
- Ensure any changes to the contract works are notified to your insurer/broker immediately.

### Important!

**Most importantly, you should contact your insurer/broker, and consult an insurance expert to help manage your contract works insurance programme for you.**

**As well as offering comprehensive Club Property Insurance schemes, the official insurance broker to the RFU, Perkins Slade have developed insurance policies specifically to cover your rugby club's needs including contract works.**

**IS YOUR CLUB  
EXTENDING? DON'T  
FORGET TO EXTEND  
YOUR INSURANCE!**

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**RFU HELPLINE: 0121 698 8001**  
**englandrugbyinsurance.co.uk**

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## APPENDIX 7

### MOST LIKELY DEFECTS

The following list of typical defects is for guidance only and is not intended to be exhaustive.

#### **Structural/masonry issues**

Look out for unusual or progressive cracks, bumps or bulges. Other signs that may have structural or water penetration implications include:

- Spalling of the edges and corners of blocks of masonry
- Masonry that have become deeply eroded
- Pointing that is deeply recessed, crumbly, loose or missing

#### **Render**

Cracks in the render could allow water to penetrate into the wall behind

#### **Timber/external joinery**

Look out for poor paint condition, timber decay or possible insect infestation that requires repair or replacement to prevent component failure and water penetration

#### **Plants/shrubs**

Plants or shrubs growing close to the wall could block air bricks that are required for ventilation

#### **Ground levels**

High ground levels that are above the damp proof course or a lack of damp proof course can cause dampness to penetrate the building

#### **Doors**

Check that doors are easy to open and close or need repair or replacement. Common problems include:

- Poor fitting in the door frame
- Rubber seals, metal coverings and flashings that are not intact
- Ineffective latches and security locks
- Damage or decay to timber/PVCu/ metal
- Paint finishes in poor condition

#### **Windows**

Check if windows need repair or replacement. Common problems include:

- Opening sections that are difficult to open
- Defects in timber/ PVCu/ metal
- Paint finishes in poor condition

#### **Door and window glazing**

Carry out a basic assessment of glazing to doors, windows and screens. Check for broken, cracked or missing panes of glass. Check that for safety critical locations, safety materials, inherently robust materials, annealed glass of an approved thickness, or alternatively a suitable permanent barrier is provided.

### **Most Likely Defects: Internal**

#### **Roof spaces**

Look out for evidence of leaks or damage from the roof covering during heavy rain. Check that the roof insulation does not restrict the roof ventilation

#### **Ceilings**

Patches or staining on the underside of the roof or ceilings can be a sign of water penetration and possible decay behind. Check for ceiling damage or ceiling panels/tiles that are loose or displaced. Ceiling with proprietary textured coatings built before 2000 may contain asbestos

### **Internal walls**

Check for patches or staining on the walls or other signs of excessive dampness. Walls with proprietary textured finish built before 2000 may contain asbestos

### **Floors**

Check that timber floors are in good condition and free from decay. Look out for any adverse movement to solid floors. Check that floor coverings do not have excess wear and tear or present a trip hazard

### **Internal joinery**

Check for any signs of timber decay or insect attack

### **Voids**

Check less accessible areas such as floor and roof voids, spaces under stairs and cupboards

### **Fire doors / means of escape**

Fire doors should operate correctly and means of escape routes should be kept clear of obstructions.

## **Most Likely Defects: Services**

### **Plumbing**

Any drips or leaks should be repaired immediately to prevent moisture seeping into adjacent areas and causing decay

### **CCTV and intruder alarms**

Undertake regular checks to ensure systems operate correctly. Consider a specialist service contract

### **Extract fans**

Periodic cleaning should be undertaken by a competent person / electrician when the electricity is isolated

### **Air conditioning**

Undertake regular checks to ensure systems operate correctly. Consider a specialist service contract.

### **Electrical system**

Undertake testing every 5 years by a specialist contractor and where necessary undertake work required

### **Emergency lighting**

Undertake testing every 5 years by a specialist contractor and where necessary undertake work required

### **Fire alarms / firefighting equipment**

Visual check should occur each month and serviced annually

### **Water and surface temperature controls**

Type 3 Thermostatic Mixing Valves should be fitted to all hot water outlets where vulnerable persons may have access. The surface temperature of accessible hot pipes and radiator surfaces should be limited to 43 degrees C

### **Legionaires**

A contract should be in place with a specialist contractor for water monitoring and maintenance to prevent legionella

### **Lightning protection**

If provided the lightning protection system should be checked every 11 months for adequate earthing and electrical continuity

**RFU ENERGY EFFICIENCY  
ESSENTIAL GUIDES**



## WHAT IS PV?

Photovoltaic (PV) cells convert the energy from the sun into electricity. Groups of cells are mounted together in panels which can go on top of a rugby club roof, wall or on the ground..

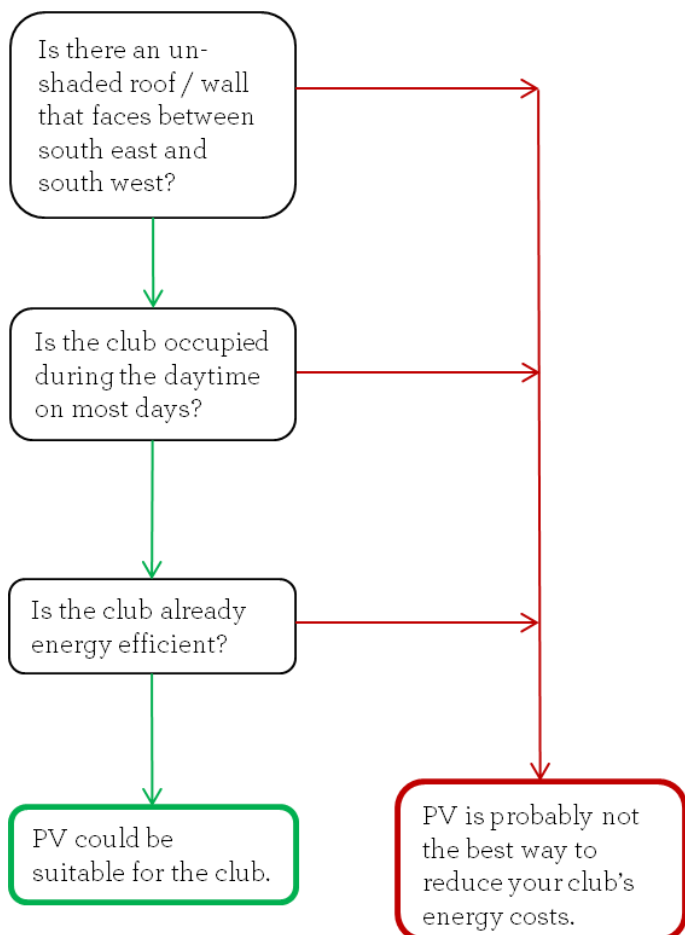
## WHY PV?

- PV generates electricity for you so don't need to buy as much
- Under the Government's Feed-in Tariff (FIT) scheme, you will be paid for every unit of electricity – kilowatt hour (kWh) – you produce
- The electricity can be for your own use or you can sell surplus electricity to your energy supplier (around 3 pence per kWh)

## IS PV SUITABLE FOR YOUR CLUB?

Before embarking on a PV project, it is vital that you make your club as energy efficient as possible. In this way, you will gain the maximum benefit from the project should you decide to go ahead.

Use the decision tree below to assess if PV is suitable for your club.



## COSTS AND BENEFITS

If you think PV could be suitable for your club and you will be able to use the energy that is generated then an average domestic-sized system (with a peak output of 4 kilowatts) could cost you between £5,000 and £8,000.

You will then need to consider how an installation will be funded.

There are two routes:

- Funding the project yourself achieves the greatest financial benefits as you receive the full FIT payment.
- An agreement with a PV supplier. In exchange for using your club roof, the supplier installs and operates the system, but will benefit from the FIT payments. The supplier may provide you with free or low-cost electricity produced by the system.

Before considering an agreement with a supplier, it is important to bear in mind that the arrangement could last for up to 20 years.

During that time you are likely to have to agree to an energy price that is linked to inflation. However, as changes in technology and legislation could radically change energy prices in either direction, there is high degree of uncertainty with this method.

## MORE INFORMATION

1. More information on insulation can be found [here](#) and [here](#).
2. A number of guides on different types of insulation are available from the Carbon Trust, found [here](#)
3. Guidance on reducing condensation, which can be an issue linked to insulation can be found [here](#).



England  
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# ESSENTIAL GUIDE #6: LED LIGHTING



Ricardo  
Energy & Environment

## WHAT ARE LEDs?

LED is a new and popular type of lighting. Whilst often more expensive to buy than normal lights, they are much more efficient to use and so will often pay for themselves in energy savings within 1-2 years.



## HOW MUCH DOES IT COST?

Fluorescent LED tube		£20
LED spotlight		£5
Incandescent LED lights		£4

## WHY LEDs?

- LEDs use up to 90% less energy than traditional lights for a similar light output.
- They can last for up to 20 years which reduces the number of times you need to change them.
- LEDs can replace most traditional lamp types.
- LEDs can be purchased in a number of colours - there are even colour changing varieties (Twickenham uses these in the players' tunnel).

## WHY NOT LEDs?

- LEDs are generally more expensive to buy than other lamps, though this is usually paid back through energy cost savings.
- Replacing lower voltage lamps with LEDs can require a change of transformer making the project more expensive.
- If you already have high efficiency lighting, (such as compact fluorescent lamps) then the savings will be smaller and you may wish to simply replace existing lamps with LEDs when they fail.

## ARE LEDs SUITABLE FOR MY CLUB?

LED technology is improving all the time. As it does, the costs reduce and the case for LED replacement gets better and better. It's important to think about how often your club uses its lights, the more hours per week the lights are on, the better the argument for LED replacement.

Most light fixtures can now be replaced with LEDs, but the best savings are likely to be found when replacing inefficient spotlights and traditional incandescent bulbs.

To work out if it is worth replacing some or all of your bulbs then the calculation is simple using the example below. This may best be done on a room-by-room basis.

	EXISTING SPOTLIGHTS	NEW LED SPOTLIGHTS	EXISTING INCANDESCENT LAMPS	NEW LED LAMPS
Cost per lamp	N/A	£5	N/A	£4
No of lamps	10	10	20	20
Total purchase cost*	N/A	£50	N/A	£80
Watts per lamp	50	5	100	7
Cost of lighting/year**	£203	£20	£811	£57
<b>ENERGY SAVINGS</b>	<b>£183</b>		<b>£755</b>	

These calculations use the average costs of lamps and energy. To do this calculation yourself you will need the following calculations.

\*Total purchase cost = cost per lamp x number of lamps

\*\*Cost of lighting = Total kilowatts (i) x weekly hours (ii) x weeks used a year (iii) x energy unit rate (iv)

i number of lamps x watts per lamp/1000 (Kilowatts kW)

ii add up all the hours you would use the lights in 1 week (Hours)

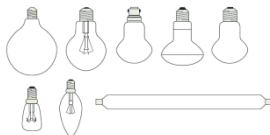
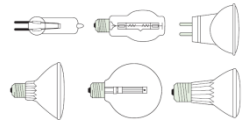

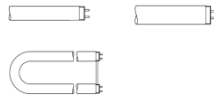
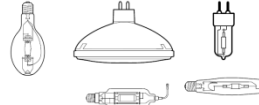
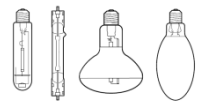

iii Do you use the room all 54 weeks a year? If not how many weeks do you use the room? (Weeks)

iv Found on your electricity bill (£/kWh)

## MORE INFORMATION

1. Which? Guide to LED lights can be found [here](#)
2. Carbon Trust guide: How to Implement LED lighting can be found [here](#)

# ESSENTIAL GUIDE #6: LED LIGHTING

NAME	LAMP TYPE (PLEASE NOTE THAT LAMP MEANS LIGHT BULB)	EFFICIENCY OF THE LAMP	LAMP LIFE (HOURS)	USAGE	BEST PRACTICE ALTERNATIVE
Traditional incandescent light bulb (Tungsten filament)		Very poor	1,000	Generally used for lighting main hall and bar areas, toilets and changing rooms. <i>These lamps have mainly been banned from the UK market now</i>	These should be replaced with LED alternatives (80% - 90% energy saving achievable) or CFLs (75% energy saving)
Tungsten halogen		Poor	1,500 - 5,000	Generally used for lighting main hall and bar areas in clubhouses	These should be replaced with LED alternatives (80 - 90% energy saving achievable)
Compact fluorescent lamps (CFL)		Moderate	15,000	Generally used for lighting main hall, bar areas and changing rooms	These are good energy efficient lamps, but could consider changing to LED alternatives
Tubular fluorescent		Moderate to good	8,000 - 17,000	Generally used for lighting main hall, toilets, kitchens, bar areas and changing rooms	Older T12 and T8 lamps and even new T5 lamps could be replaced with retrofit LED alternatives (up to 80% energy savings)
Metal halide		Moderate to good	6,000 - 10,000	Good quality white light generally used for flood lights or security lighting	LED are good alternatives. (80% energy savings achievable)
Standard high pressure sodium (SON)		Moderate to excellent	10,000 - 20,000	High efficiency, but tend to be give low quality yellow light, generally used for security lighting.	These are good energy efficient lamps, could consider changing to LEDs, especially if a better light quality is required.
LED		Moderate to excellent	25,000 - 60,000	Now available for most light uses and lamp types. Lamp life can be shortened in hot areas or if installed in the wrong fittings.	Currently the most energy efficient lamps.



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# ESSENTIAL GUIDE #7: SOLAR WATER HEATERS



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## WHAT ARE SOLAR WATER HEATERS?

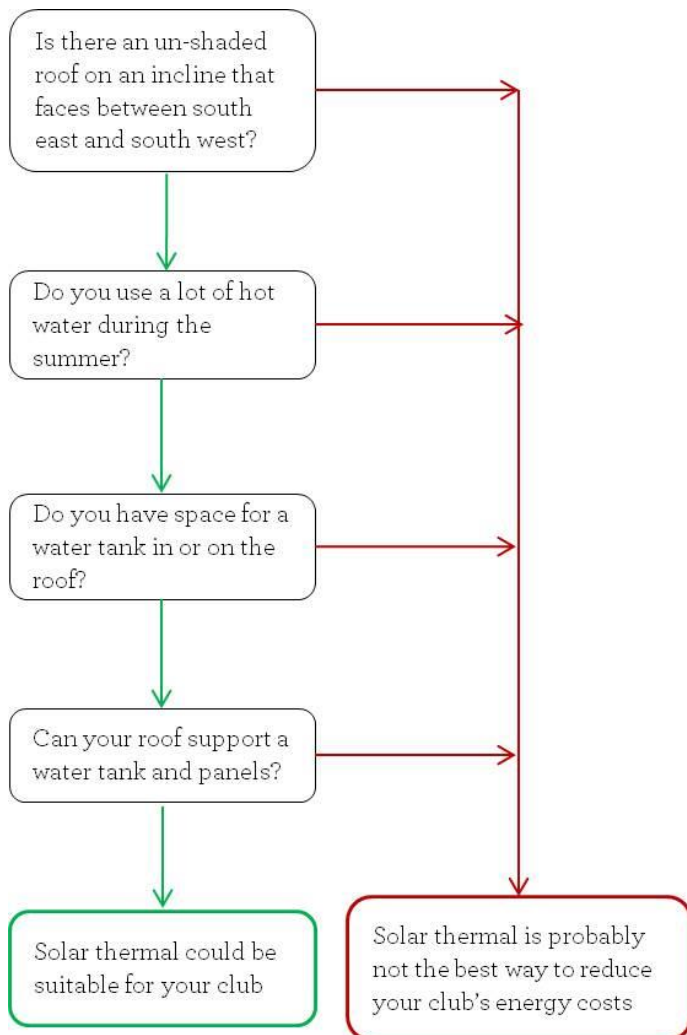
Solar water heaters (also known as solar thermal) are used to supply 'domestic' hot water by converting the energy from the sun into heat, which is then used to heat water. The heater uses panels that can be fitted onto a rugby house roof.

## BENEFITS OF SOLAR WATER HEATERS

- They can reduce your hot water heating costs.
- They work all year round, though you'll need to heat the water further with a boiler or immersion heater during the winter months.
- Once installed, there is very little additional cost or maintenance required.
- Under the Government's Non-Domestic Renewable Heat Incentive (RHI), you could be paid a subsidy payment for 20 years.

## ARE SOLAR WATER HEATERS SUITABLE FOR MY CLUB?

Before embarking on a solar thermal project, it is vital that you make your club as energy efficient as possible. In this way, you will gain the maximum benefit from the project should you decide to go ahead. Use the decision tree below to assess if a solar water heater is suitable for your club.



## WHAT IS THE COST AND PAYBACK PERIOD?

- The price of a solar thermal panel starts at around £3,000.
- They have fairly long payback periods (between 7 and 15 years), but RHI subsidies can reduce the costs.

## WHAT ARE THE RISKS?

- The biggest risk is freezing temperatures. The effects of this can be overcome by including a suitable anti-freeze in the circulating water or by draining the system during the winter.
- As in any sports club, physical damage from balls, vandalism etc can occur. This can be a particular concern as solar energy collectors are fragile.

## OTHER FACTORS TO CONSIDER

- Hot water systems can suffer from a build-up of Legionella bacteria. System installers will advise on how this can be avoided.
- In addition to water storage tanks, a control system may be needed to ensure that enough water is available to meet the demand and to protect the solar water system from damage when being used in conjunction with another heat source.

## MORE INFORMATION

1. You can get more information about solar thermal systems [here](#) and [here](#).
2. The Consumers' Association, 'Which' has produced a buying guide which can be found [here](#).
3. The Solar Trade Association also provides useful guidance on how to go about procuring a system and what to ask an installer. This can be found [here](#).
4. You can find the latest information on the Non-Domestic RHI [here](#).

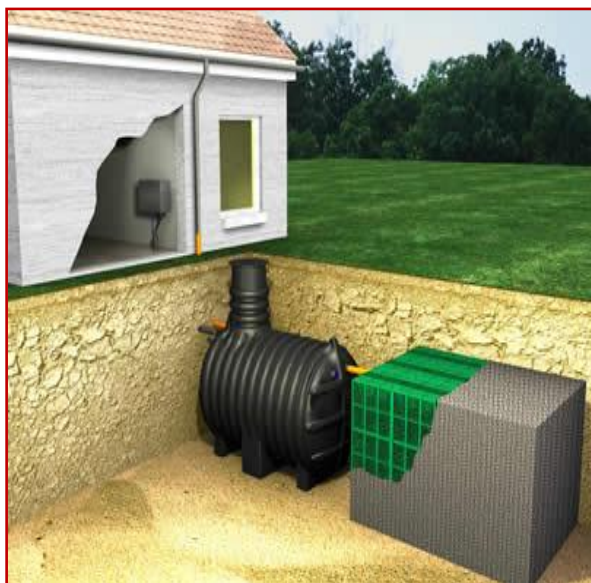


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## ESSENTIAL GUIDE #8: RAINWATER HARVESTING



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### WHAT IS RAINWATER HARVESTING?

Rainwater harvesting (RWH) refers to the collection and re-use of rainwater. This can take many forms – ranging from simple rainwater collection for pitch watering to pumped systems that replace mains water used in the club for such things as toilet flushing.

RWH operates on a different scale to a water butt. A water butt only captures about 200 litres of rainwater whereas a RWH tank can filter and store up to 6,500 litres of clean water.

There are two main types of system:

- An above-ground system, where water is collected from rainwater in the gutters
- An underground system where water is also collected from surface run-off. Therefore, more water can be collected in this way.

### ADVANTAGES

- It can reduce your water bills
- There are many potential uses including:
  - Rainwater storage for pitch watering in the summer
  - Wash-down purposes
  - Toilet flushing
  - Washing sports kit
- Controlled collection of rainwater can help overcome local problems, such as inadequate soakaways or poor surface water drainage design.

### DISADVANTAGES

- It can be expensive, especially for underground systems where there is a cost for excavation to install the tank and the cost of the tank itself.
- RWH involves the use of pumps, filters and valves. These must be regularly cleaned to make sure that grit, debris or other contamination does not accumulate and cause blockages or damage the system.
- A backup system is needed if there is an issue with the RWH system. This might include the ability to switch to mains water during periods of drought or if the RWH supply pump fails.
- You need to ensure that supplies cannot mix and that no rainwater can get into the mains system.

### HOW MUCH DOES IT COST?

The costs and benefits of RWH depend on how much water you want to collect and what you will use it for.

- Installation cost of an underground 2,700-litre tank (provides water for about 500 toilet flushes) with a filter and associated pipework to supply internal uses is approximately £4,000.
- Installation cost of an above-ground tank of a similar size costs less than £500.

In terms of cost savings, at less than 0.2pence/litre, the payback on systems can be long. However, with water prices increasing, RWH is becoming a more cost-effective option.



### IS RWH SUITABLE FOR YOUR CLUB?

Rugby clubs are ideal locations for RWH as they have the space for water storage above ground and the facilities to bury tanks below ground if needed.

As facilities are only lightly used during the week it could allow high volume collection for use at weekends.

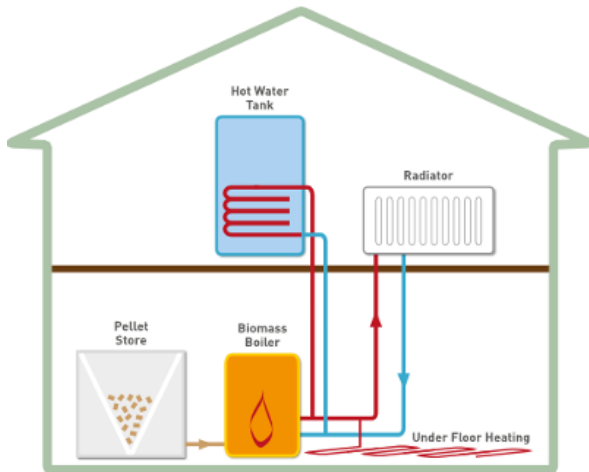
### MORE INFORMATION

A guide on RWH can be found on the WRAP website [here](#).

## WHAT IS A BIOMASS BOILER?

Biomass boilers burn biomass fuels extremely efficiently and use the heat produced to provide heating and hot water.

Biomass fuel is biological material from living or recently living organisms such as wood, straw and woody grasses.



## THINGS TO CONSIDER?

Key things to consider in relation to biomass boilers are as follows:

- The capital cost of a biomass boiler compared to the cost of oil and gas fuelled systems
- The type of biomass fuel to be used
- Source of biomass
- Number of hours per year that the system will be used

## WHAT DOES A BIOMASS SYSTEM COST?

A domestic-sized boiler that is automatically fed with wood pellets should cost between £9,000 and £21,000 (including installation).

## ADVANTAGES

- Biomass fuels are usually far cheaper than gas and oil. This is not always the case for pellets (a type of biomass fuel), although they are still cheaper than heating oil.
- Biomass fuels are a sustainable, low carbon fuel.
- Most biomass requires very little processing to make it into fuel.
- Under the Government's Non-Domestic Renewable Heat Incentive (RHI) you may be eligible for a subsidy payment for the heat generated from a biomass boiler.

## DISADVANTAGES

- Manual operation of batch-fed systems can be time consuming.
- Automatic systems using chipped or shredded fuels still require maintenance to keep the hoppers full, remove ash and resolve any fuel blockage. Such blockages are almost eliminated when using pellet fuels.
- Biomass boilers are physically larger than gas or oil boilers of the same output. This means that a new boiler house and fuel store may be required adding to cost.
- Planning permission may be needed for the flue, and any new structures for the boiler, fuel store and thermal store.

## IS A BIOMASS SYSTEM SUITABLE FOR YOUR CLUB?

- A biomass boiler may be cost effective for clubs that have a high annual usage, but less so for those that are used less frequently.
- If there is availability of biomass close to the rugby club, using biomass boilers can be ideal.
- Larger clubs with more constant heat demand across the week can also benefit from chip or pellet systems.
- The lower cost, batch-fed biomass systems also suit the natural rhythm of the club calendar, where lots of space heating and hot water are needed on match days.

## MORE INFORMATION

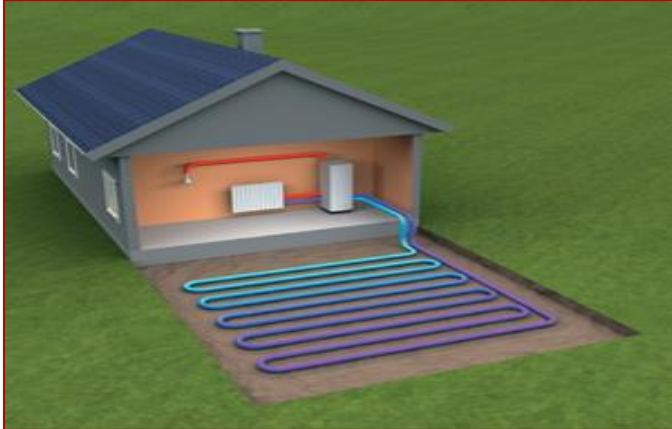
1. Current requirements under the RHI scheme can be found [here](#).
2. Description of the types of biomass systems can be found [here](#).

## WHAT ARE HEAT PUMPS?

Heat pumps are devices that move heat from one place to another to provide heating, hot water and, sometimes, cooling. The most common example of a heat pump is a fridge. There are two basic types of heat pumps.

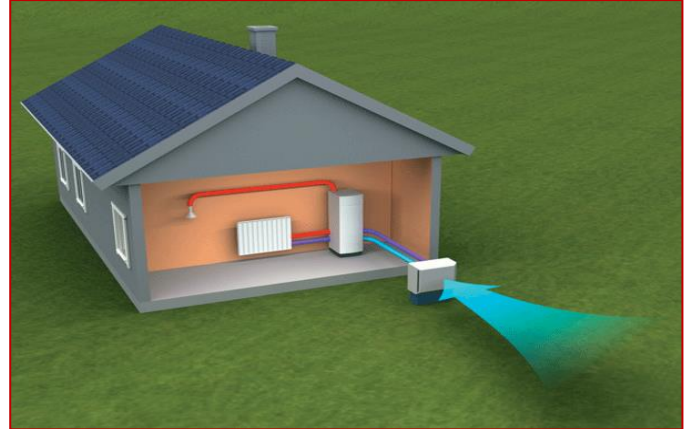
### GROUND SOURCE HEAT PUMPS

Extracts heat from the ground and moves it to another location



### AIR SOURCE HEAT PUMPS

Absorbs heat from the air and moves it to another location



### ADVANTAGES

- Heat pumps can be used as direct replacements for conventional boilers.
- They are very efficient and can reduce your fuel bills.
- They can be expected to operate for more than 20 years.
- Air source heat pumps are relatively simple to install.
- Under the Government's Non-Domestic Renewable Heat Incentive (RHI), you may be eligible for a subsidy payment.

### DISADVANTAGES

- Clubs where a lot of heat is required over only a short period of time may find that heat pumps are not economical.
- Modern heating systems that use radiators have low water volumes. This makes them unsuitable for use with heat pumps.
- The heat produced will be lower, typically around 45°C compared with 60°C to 80°C from a conventional boiler.
- Heat pump heating systems take longer to heat up.
- Air source heat units produce noise from the fans. This makes their positioning important.

### HOW MUCH DOES IT COST?

The capital costs of heat pumps are falling and efficiencies are improving. You can calculate your potential annual saving and maximum budget for heat pump purchase by following the steps below:

Divide your annual electricity consumption in kWh by 3 (heat pumps use some electricity to work the pump)

Multiply this by the cost of your electricity per kWh

Subtract this amount from your annual heating bill. This gives your potential energy saving

Multiply this by 5. This sets your maximum budget for a 5 year payback

- Domestic-scale air source heat pumps usually have an installed cost of between £7,000 and £11,000. For larger applications, such as in large rugby clubs, several heat pumps of the same size are installed.
- Ground source heat pumps have similar costs, but the cost of buying and installing the underground pipework adds a further £1,000 to £3,000 per heat pump.

### ARE HEAT PUMPS SUITABLE FOR YOUR CLUB?

Heat pumps can be ideal for rugby clubs, especially those:

- With large heating bills
- With an old inefficient boiler
- That need to heat a large area
- That have space for air source heat pumps or large areas of ground to support ground source heat pump systems

### MORE INFORMATION

1. More information on the latest RHI payments can be found [here](#)
2. A glossary of the terms used by heat pump suppliers can be found [here](#).
3. The Consumers' Association 'Which' guides on air source heat pumps and ground source heat pumps can be found [here](#) and [here](#)



England  
Rugby

# ESSENTIAL GUIDE #11: VOLTAGE OPTIMISATION



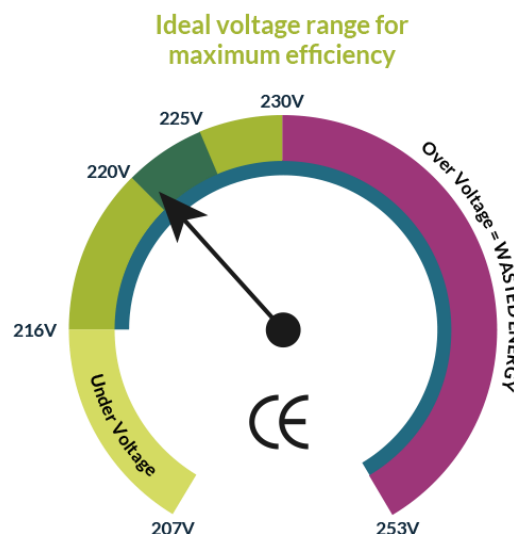
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## WHAT IS VOLTAGE OPTIMISATION?

Voltage optimisation is an energy saving technology that can be installed to reduce the voltage of your club power supply. UK supplies are required to be between 216V and 253V but it is more efficient for suppliers to provide higher voltages, so the average is around 240V. However equipment, machinery and appliances are typically designed to work best at 220V so many buildings have operational issues with excessive voltage. Modern equipment is usually designed to compensate for these issues but voltage optimisation can help with older equipment and save energy.

## WHY INSTALL VOLTAGE OPTIMISATION?

- Can be a simple way of reducing energy consumption, especially on older, less efficient equipment
- Can increase the lifespan of old equipment
- In most cases, a single installation will cover your entire building



## IS VOLTAGE OPTIMISATION SUITABLE FOR YOUR CLUB?

Before investing in a VO system, it will be important to consider the following:

- **What is the size of your club?** Typically, Voltage optimisation is only commercially viable in clubs with an electrical bill larger than £25,000. In smaller clubs, the potential benefits will depend on the equipment used by the club.
- **How often do you use your clubhouse?** Voltage optimisation produces a small consistent saving making it popular in warehouses and major offices but if your clubhouse is unused much of the week and most energy consuming devices are switched off, the savings are likely to be minimal.
- **What electrical devices are used within the building?** This is important to consider because the effect of voltage reduction is not the same for all electrical devices. In general, buildings with older, less efficient equipment will benefit most. However the *type* of device used is important too, as shown in the table below.

## EQUIPMENT LESS LIKELY TO BENEFIT

- New lighting technology such as LED & Fluorescents
- New motors (eg in cellar coolers) and fans
- Office equipment and equipment using charging cables
- Floodlights (near end of life)

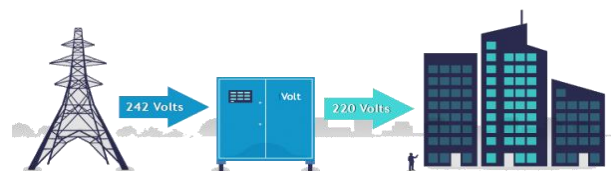
## EQUIPMENT MORE LIKELY TO BENEFIT

- Old motors & fans, typically found in cellar cooling, fridges or freezers
- New floodlights.

## WHAT ARE THE COSTS AND BENEFITS?

COST OF UNIT	SAVING
£500 - £5000 (dependent upon level of energy consumption) plus the cost of professional installation	<5%

The impact of voltage optimisation will be different for every club. It is therefore advisable, if you are interested in the technology to have an independent site survey assess the potential savings before you consider investing.



## MORE INFORMATION

More information and guidance on where voltage optimisation works best can be found [here](#). This also has good information on which electricity uses will benefit most.

## WHAT ARE SMART METERS?

A smart meter is an advanced type of electricity or gas meter which can give you instantaneous information about how much energy you are using and how much this is costing you.

## WHY INSTALL SMART METERS?

- Smart meters communicate your energy consumption to your energy supplier. This means consumption readings are automatically sent to your supplier, ensuring accurate energy billing (no more estimated readings!) which removes the need for readings to be taken.
- Data can be stored and downloaded to allow you to better understand how and when energy is used in your club.



## ARE SMART METERS SUITABLE FOR MY CLUB?

Before investing in a Smart Meter, it is important to consider the following:

- Do you have the necessary personnel and infrastructure?
- On their own, smart meters will not save you energy. What they will do is provide the club with a means to better understand its energy consumption so that you can reduce your demand and save costs.
- It may be best for a single person to take control and collect and analyse the Smart Meter information, thus identifying potential areas of energy waste.
- In addition, the club need to buy into the process and agree to bring about changes in practice to deliver the savings they have identified.



## WHAT IS THE COST?

The UK Government has set up a programme requiring energy companies to install free Smart Meters in domestic and small non-domestic properties in Great Britain by the end of 2020. Contact your energy supplier to see if you are eligible for a free Meter.

If you are not eligible for a free Smart Meter, they can be purchased for a few hundred pounds, plus the cost of installation. Whether this investment is justified will depend on the willingness of the club and its members to make full use of the information that the smart meter will produce!

## WHAT ARE THE BENEFITS OF SMART METERS?

Measuring overnight consumption will help you to identify equipment that is being left on

Where catering equipment such as ovens and grills are being turned on as soon as the kitchen opens and not just when they are needed.

## MORE INFORMATION

Q&A on the non-domestic smart metering roll customers can be found [here](#).

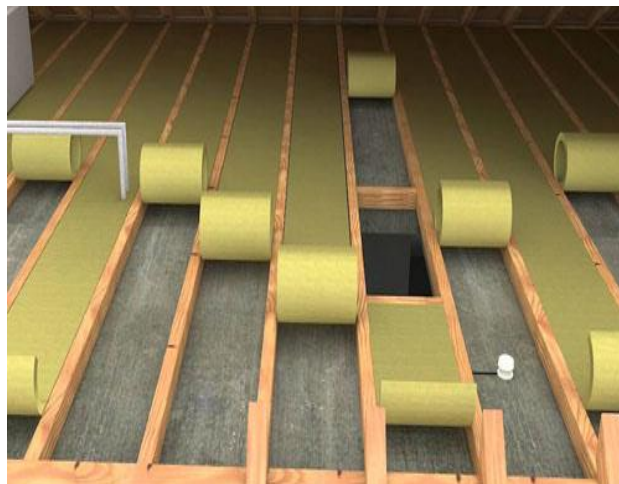
A guide on metering, including smart metering can be found [here](#).

## WHAT IS INSULATION?

Insulation is a method to insure that heat within a building stays where it is needed and does not leak away. There are a wide range of insulation materials available and the most appropriate type will depend on where it needs to be fitted within the rugby club. The most common areas in a club that can benefit from added insulation are lofts and roof space, cavity walls and water pipes and hot water storage tanks.

## WHY INSULATE?

- Most insulation is low cost.
- Helps reduce your fuel bills, as less heat is wasted.
- With the exception of cavity wall insulation it can be installed on a DIY basis.



## HOW MUCH INSULATION DO I NEED?

### WALL INSULATION

- The type of wall insulation you'll need depends on whether your clubhouse has cavity or solid walls. Both types should be installed by a professional installer.
- Cavity wall insulation is injected through the outer wall of your clubhouse into the space between the inner and outer leaves of brickwork that make up cavity walls. For best results the cavity needs to be filled as fully as possible.
- Solid wall insulation takes many forms depending on the material being covered and the planning requirements set out by your local council. Best practise for solid wall insulation is to achieve a "U Value" of less than 0.3W/m<sup>2</sup>K (a U-value is a measure of the flow of heat through a material. The lower the U-value the better the insulation the material provides.)

### LOFT/ROOF INSULATION

- If access is easy and your loft joists are regular, you can use rolls of mineral wool insulation. The first layer is laid between the joists then another layer is laid at right angles to cover the joists and make the insulation up to the required depth. This can be done by a competent person or a professional installer. Best practise is to install 270mm of mineral wool insulation to loft areas to effectively reduce heat loss.

## HOW MUCH DOES IT COST?

TYPE OF INSULATION	COST	PAYBACK PERIOD
Cavity wall (those with an inner and outer layer of bricks or blocks separated by a space or cavity) and loft insulation	< £2000	< 4 years
Solid wall insulation	Up to £18,000	> 10 years
Loft Insulation	<£2000	< 2 Years

## IS INSULATION SUITABLE FOR MY CLUB?

It is important to consider to following factors before embarking on an insulation project:

- **What insulation is already there?** - For instance, are your roof spaces, cavity walls, water pipes and or / hot water storage tanks already insulated? If there is no insulation at all, significant heat losses are likely to be occurring and insulation is something you should consider.
- **Does your clubhouse have cavity walls?** -Installing cavity wall insulation is a simple good practice action that can pay back in a short period of time. Many buildings already have cavity wall insulation but for those that don't it is an efficient way to retain heat and reduce energy costs. If you do not have cavity walls the only option is solid wall insulation which is significantly more expensive.

## MORE INFORMATION

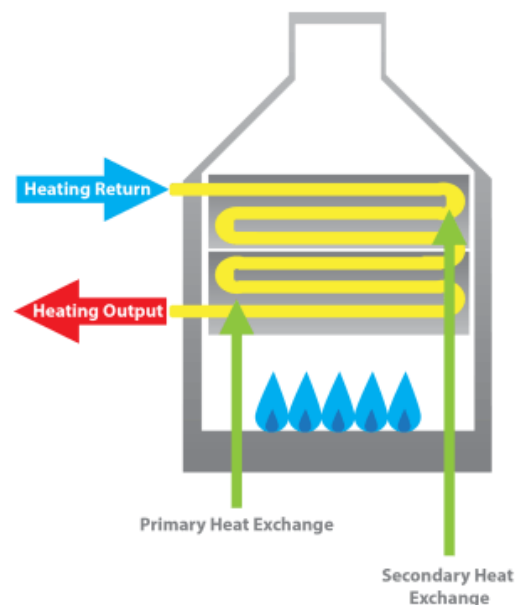
1. More information on insulation can be found [here](#) and [here](#).
2. A number of guides on different types of insulation are available from the Carbon Trust, found [here](#)
3. Guidance on reducing condensation, which can be an issue linked to insulation can be found [here](#).

## WHAT IS A CONDENSING BOILER?

High efficiency (Condensing) boilers provide hot water and heating just like older boilers but unlike older boilers they recover heat from the exhaust gases, increasing the amount of heat you get from your gas and reducing the amount of gas you need to heat the clubhouse.

## WHY CONDENSING BOILER?

- The efficiency of your boiler is the single biggest contributing factor to your heating bills.
- Condensing boilers are around 89% efficient while old gas boilers are typically about 60% efficient and oil 55% efficient.
- Replacing an old boiler with a high efficiency boiler can save up to 40% on your heating bills.
- Boiler replacement is typically a quick and relatively simple process.



## ARE CONDENSING BOILERS SUITABLE FOR MY CLUB?

If you already have a hot water boiler at your club then there is a very good possibility that high efficiency replacements are suitable for your club. Boilers tend to come in standard physical sizes and most utilise the same heating systems making replacements relatively simple. If your boiler was fitted before 2010 it is likely that a new boiler will save you money, because boilers fitted prior to 2010 used older, less efficient technology.

## WHY NOT CONDENSING BOILERS?

- New boilers can be costly up front, and so can be slow to pay back compared with other heating measures like insulation.
- Condensing boilers need to be able to dispose of water, which is created in the heating process. In some circumstances this may mean re-siting your boiler.
- To get the best out of any boiler, proper boiler controls, thermostats which control the temperature of the building and thermostatic radiator valves (thermostats that are fitted to radiators to control the temperature of the radiator) should also be fitted. If the club doesn't currently have these they can add to the cost.

## HOW MUCH DOES IT COST?

- Boiler cost is related to size. Clubhouse boilers can vary from £1,000 to £10,000 depending on the size of the boiler and some can cost even more for larger multiuse buildings.
- Labour costs for installing a boiler start at around £500 for a straight replacement in the same location and £1,400 to move the boiler and additional thermostatic radiator valves and other controls.
- Complex installations may cost more.

## MORE INFORMATION

1. Replacing My Boiler guide by The Energy Savings Trust can be found [here](#)
2. Boiler Energy Efficiency by Which? can be found [here](#).
3. The Cost of Replacing a Boiler by Which? can be found [here](#).
4. Condensing Boilers by the National Energy Foundation can be found [here](#).