

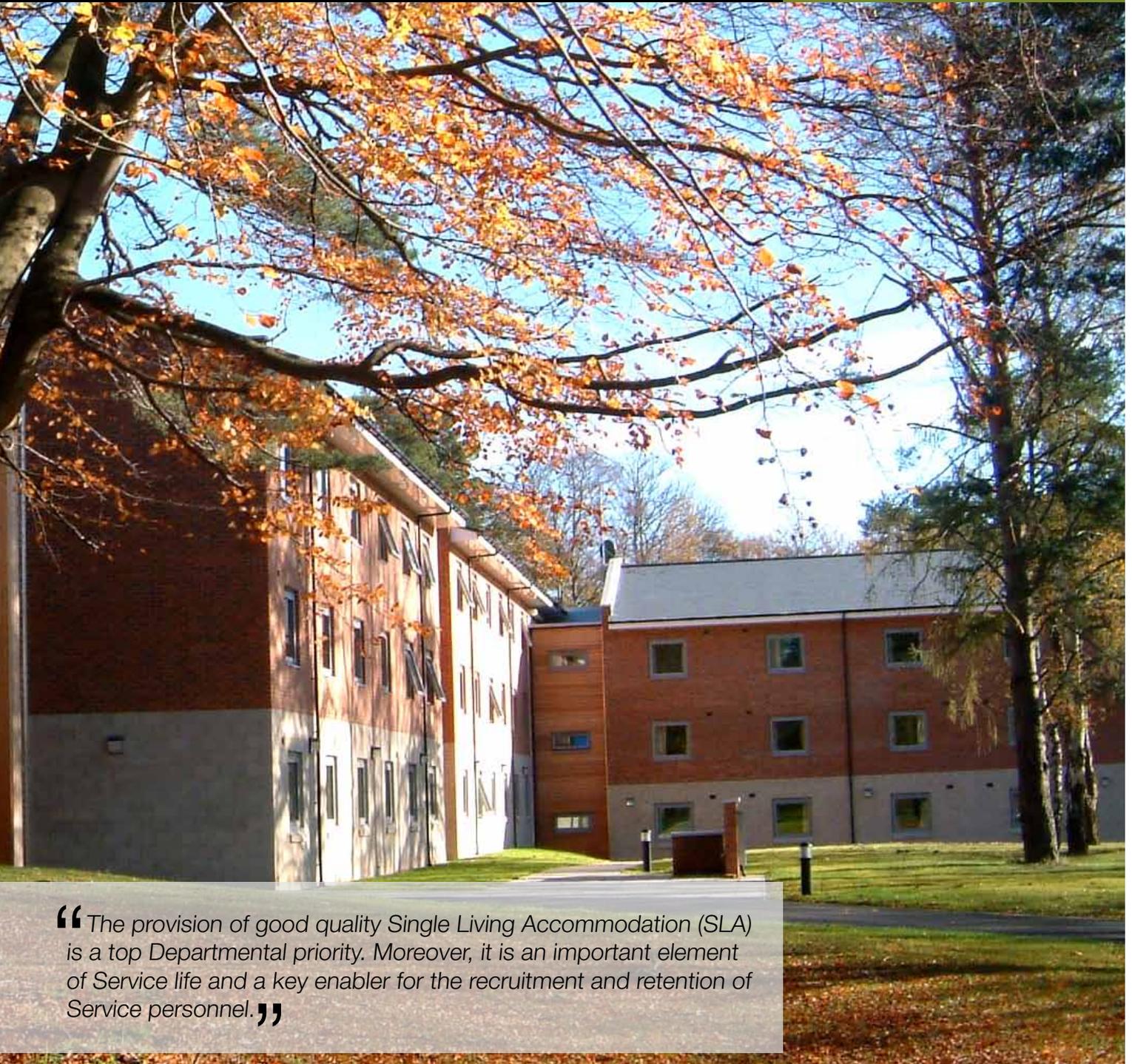


Defence
Infrastructure
Organisation

SINGLE LIVING ACCOMMODATION DESIGN

Practitioner Guide 08/12

Estate
Management



“The provision of good quality Single Living Accommodation (SLA) is a top Departmental priority. Moreover, it is an important element of Service life and a key enabler for the recruitment and retention of Service personnel.”

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This Guide has been produced in collaboration by Peter Hughes (Defence Infrastructure Organisation), Colin Holloway (Lend Lease), Leigh Lenaghan and Christopher Liddle (HLM Architects).





1.1.1 The provision of good quality Single Living Accommodation (SLA) is a top Departmental priority. Moreover, it is an important element of Service life and a key enabler to the recruitment and retention of Service personnel. This guidance has been produced to support this aim and to focus attention on the key design principles and considerations.

1.1.2 This document provides guidance on the design of living and sleeping accommodation for all ranks of Service Personnel and across all branches of the armed forces. It applies to the provision of accommodation in the United Kingdom and Northern Ireland, but the principles will equally apply to overseas locations.

1.1.3 This guide is intended for use by anyone involved in the provision of SLA, whether they be MoD personnel responsible for considering and sponsoring SLA projects, or designers, project managers and constructors responsible for their delivery.

1.1.4 The following guidance has been developed to support a best practice approach in designing and delivering SLA, and is intended to provide ideas and provoke thought. It is not intended as a design template

to be rigidly followed. Alternative solutions and innovation are encouraged where they demonstrably provide improvements in functionality, quality and whole life cost. However, it should be noted that all solutions will be tested against the design principles contained in this document.

1.1.5 The provision of living accommodation varies according to rank, and standards are detailed in Joint Service Publication (JSP) 315 'The Accommodation Scales'. SLA consists of single or multiple occupancy rooms and is utilised for permanent, training or transit use. SLA is 'Graded' for rental purposes to ensure that individuals are appropriately and fairly charged for their accommodation. The provision of appropriately 'scaled' accommodation is a fundamental part of this grading methodology in conjunction with an assessment of the condition of the property and the availability of local amenities. The grading methodology is not considered further in this document.

1.1.6 New build options shall be designed to comply with the requirements of the current JSP Scales. However, for refurbishment options (particularly where listed or historic buildings are involved) variances from the requirements of the JSP Scales may be considered where it can be demonstrated that an appropriate 'best fit' solution is being provided. Such proposals will need to be evaluated and accepted as early in the design phase as possible, in conjunction with the MoD project team, to ensure that appropriate functionality and value for money are delivered.

JSP 315 The Accommodation Scales

1.1.7 This Design Guide is to be read in conjunction with the relevant JSP Scales. It is important that the general design requirements as listed under JSP 315 Scale 1 are considered in conjunction with the building-specific information incorporated within the Scales noted below.

1.1.8 Delivery Teams should check that they are working to the current amendment of the Scales and if discrepancies occur between this guide and the JSP Scales, this should be drawn to the attention of the MOD Delivery Team for further guidance and clarification.

1.1.9 The following JSP Scales are specific to SLA:

- Scale 1: Introduction (applicable to all facilities)
- Scale 3: Junior Ranks' SLA
- Scale 30: Officers' Sleeping Quarters
- Scale 32: Officer Cadet quarters
- Scale 35: SNCOs' Sleeping Quarters

1.1.10 Within the above documents, reference is made to other JSP 315 Scales, these should be referred to where appropriate to ensure all requirements are met.

1.1.11 The following are associated JSP 315 Scales which may be relevant:

- Scale 17: Car Parking & Covered Cycle Storage
- Scale 29: Officers' Public Rooms
- Scale 34: SNCOs' Public Rooms
- Scale 39: Service Catering Facilities
- Scale 45: Offices
- Scale 51: Social Clubs

1.2 SLA Focus Groups

1.2.1 Since 2001 there has been a significant improvement in the quality and functionality of single living accommodation driven by changes in the JSP Scales and investment in a significant programme of work. The resulting design responses have played a major part in creating new living communities, embodying a core approach to develop and deliver cost effective design solutions within a variety of environments from smaller infill projects, to whole site masterplanning solutions.

1.2.2 Against the background of the successful delivery of modern SLA over the previous decade, in 2009 a series of User Focus Groups* representing all ranks and all services were engaged as part of the process of continuous improvement and in developing the future requirements for SLA. This has led to evidence based design outcomes and recommendations for future SLA Projects across the Military Estate.

1.2.3 The outcomes and recommendations of these Focus Groups have been incorporated into this Design Guide.



*The Focus Group included representatives from Project SLAM Integrated Project Team (IPT), MOD Behavioural Scientists, and DE Living Accommodation Requirements Team.

2.0 General Design Principles

2.1 Introduction

2.1.1 Single Living Accommodation (SLA) is home to servicemen and women during their training or posting to a unit. Whatever the length of their stay, the accommodation is their relaxing, sleeping and studying space during off-duty hours, while providing secure storage of personal belongings.

2.1.2 Main meals are served within the respective Mess buildings, with only limited snack preparation facilities provided within the SLA. Where personnel do shift work, the facilities for making light meals will be used more regularly, as Mess serving times may be missed.

2.1.3 The day-to-day working patterns of occupants will vary between units, with some personnel working '9 to 5', some doing shift work and others away for periods on exercise, operations or courses. Different working patterns in the same accommodation will inevitably create the potential for noise disruption and this issue should be considered and addressed by the building design.

2.1.4 The nature of this type of accommodation means that there will be a regular change over of personnel, due to staff postings abroad or within the UK. There are also likely to be periods when sections of the SLA will be left vacant. The design of the building (and particularly the engineering and water quality solution) must account for this.

2.1.5 The design of SLA must assume occupation by either male or female personnel. The allocation of bedrooms will be at the Establishments or units discretion.

2.1.6 The occupants generally will be young and active; however, there will be occasions when an allowance will need to be made for disabled personnel through the inclusion of a small percentage of rooms 'fitted for but not with' adaptations for injured soldiers.

2.1.7 The accommodation shall be robust with a quality of finishes and furnishings able to withstand a high degree of robust usage.

2.2 Masterplanning

2.2.1 Military Establishments, just like small towns and villages have always been subject to change, growth, contraction or redefinition. Masterplanning gives all those involved in the regeneration of an Establishment the opportunity to consider change on a large scale. Masterplans therefore have an important role to play in delivering sustainable communities and as a tool in the planning system.

2.2.2 The preparation of a masterplan provides the means to address the issues that make places successful.

2.2.3 Successful masterplanning is the key to creating places that are well designed. A clear, considered masterplan, which has been developed by the Project Team, key stakeholders, design professionals and local people together, can lead to the physical, social and economic revival of an Establishment and its locale.



2.2.4 A masterplan sets out proposals for buildings, spaces, movement strategy and land use in three dimensions, and matches these aspirations with an implementation strategy, as such providing a framework for the provision and siting of new facilities and infrastructure which will be developed in the future.

2.2.5 The creation of a successful masterplan depends on detailed analysis of the constraints of the existing site, which has been shaped and formed by the topography, landscape, buildings and use. The aim is to create accessible and legible urban realm with defined pedestrian and vehicular routes with open spaces which are easy to navigate, formed by buildings of proportion and form appropriate to their intended use.

2.2.6 Relating the design concept to the site context will ensure the effective delivery of excellent buildings. In practice this means a careful analysis of the site characteristics to ensure the most efficient response to the context and environmental conditions. Such an approach will also make a significant contribution to sustainable development. Piece-meal approaches to site development are inevitably inefficient and produce poor buildings and unsustainable estate solutions. The construction of Defence facilities should be as a consequence of the phased implementation of an Estate Development Plan.

2.2.7 This development methodology will provide the strategic framework for future development. This will take account of current and predicted operational requirements at the strategic and Establishment level, town planning policies, the urban design and landscape, sustainability and conservation, to achieve compelling estate solutions.

2.2.8 The Defence estate should be accessible, taking particular account of MOD personnel and visitors with disabilities. It should also be legible and navigable, with clear route plans and way finding.



2.3 Place

2.3.1 Working within a Masterplan will help to identify complimentary uses which will allow a sense of identity and place to become more visible.

2.3.2 Wherever practicable living accommodation shall be sited away from work place areas and within a 'residential' zone dedicated to Single Living and Mess accommodation, similar to residential accommodation on a university campus.

2.3.3 The 'campus' shall be attractive, well designed, have 'a sense of place' and provide an environment which enables servicemen and women 'to get away from it all' and relax.

2.3.4 The designer shall undertake a comprehensive site analysis and develop a scheme that takes advantage of aspect, views and existing landscape features, including existing pedestrian and vehicular routes to and from the site, particularly in relation to places of work and recreation.



2.3.5 Where possible, the living accommodation shall be positioned away from industrial premises, facilities or functions that produce loud noise or are visually obtrusive. Where this cannot be achieved, the siting orientation and construction of the building shall be carefully considered to reduce external noise levels to acceptable limits.

2.4 Context

2.4.1 Many military sites have been in use for centuries and contain historic buildings which are locally or nationally listed, as result it is recommended that the designer take account of the relationship of proposed new accommodation and these buildings, in terms of scale, materials, details and location.

2.4.2 Due to recent decisions to sell military housing and land on the periphery of some Establishments, many of these sites will have family housing or private developments in close proximity, therefore additional care will need to be taken in terms of security, overlooking, noise and general disturbance.

“ the campus shall be attractive, well designed, have a 'sense of place' and provides an environment which enables servicemen & women 'to get away from it all' and relax ”

2.5 Siting

2.5.1 The selection of potential sites for new build projects shall be carried out in consultation with the MOD Project Team, whilst addressing the guidance offered in the Establishment Development Plan if available. Many factors will need to be considered, including security, CTM, the supporting site infrastructure, nature of adjacent buildings and operational activities undertaken in the vicinity, together with local road layouts.

2.5.2 The location of an existing barrack block is not necessarily the ideal site for a new building. A short term view will not usually be appropriate, and solutions need to consider the long term particularly for the development of an Establishment as a whole.

2.5.3 A formal Siting Board should be convened to agree proposals. The Board should include representatives from the Establishment and informed specialist staff and outcomes recorded.

2.6 Location and Adjacencies

2.6.1 Within the accommodation zoning of an MOD Unit, the SLA, Messes and Social Clubs should be collocated within the living zone. These three facilities should be sited close enough to allow easy access.

2.6.2 Servicemen and women are also regular users of the unit sports facilities and the siting of SLA relative to these facilities should reflect this interest, thus reinforcing a fitness culture.

2.6.3 The grouping of buildings shall be carefully considered and opportunities explored to create semi-enclosed external spaces, which provide privacy and protection from noise and wind. Such arrangements shall not conflict with security requirements and enclosed courtyards or dead end situations shall be avoided. Care is also needed when buildings are grouped, to preserve privacy and ensure that rooms do not overlook other rooms.

2.6.4 SLA should be screened from working areas by the building configuration, its location or by planting. However, the screening of SLA to increase privacy for occupants must not conflict with security requirements of the unit.

2.6.5 Site, planning must allow for effective patrols of the buildings



2.7 Noise and Disturbance

2.7.1 The SLA should be orientated to shield as much of the private sleeping quarters as possible from the prevailing sound source.

2.7.2 Elevations facing the source of the noise should have a minimum number, and size, of openings in the building envelope, as these will allow sound to enter the building.

2.7.3 External noise disturbance can be reduced by

quietening the source of the noise (although this is generally outside the scope of the SLA design) by dissipating the sound on its path between the source and the receiver or by obstructing the sound path.

2.7.4 Areas of soft landscaping and ground cover, along the sound path, can offer a degree of sound attenuation. Trees can provide noticeable sound reduction only if planted in very deep belts.

2.2.5 Obstructions on the sound path can take the form of screening or fencing, located close to the sound source or to the SLA, or by the sound insulation properties of the construction materials of the building itself.

2.8 Sustainability and low carbon design

2.8.1 Achieving effective and sustainable, low energy design is now a primary objective of all Government projects, no more so than within the MOD where ambitious energy targets have been set for all new buildings. The level of sustainability that a MOD building design achieves is reflected in the Defence Related Environmental Assessment Method (DREAM) rating, but ultimately it will be judged on the annual energy consumption and whole life costs.

2.9 Ecology

2.9.1 As one of the UK's largest landowners, MOD has a major role to play in the conservation of the UK's natural resources. Stewardship of the Estate means that the MOD has responsibility for some of the most unspoilt and remote areas in Britain; with statutory obligations to protect the protected habitats and the species that they support. Project Teams therefore have a duty to minimise any adverse effects on the environment through appropriate design.

2.10 Landscape

2.10.1 Landscaping around any building is an important part of the overall design, providing an attractive setting and should be considered at design brief stage. The topography and exposure of the site should also be considered early on in the design process, to ensure that the building design is suited to the site.

2.10.2 An acceptable landscape scheme shall be implemented on all sites. External spaces are to include appropriate hard and soft landscaping, incorporating grassed areas with tree and shrub structure planting to:

- Provide visual interest with screening where necessary
- Define pedestrian routes
- Visually break up large external spaces. Consideration should be given to the opportunities to make best functional use of spaces between and around buildings by for example creating, sitting areas, barbeque areas, casual fitness and sports areas. Encourage usage for social interaction, rest and pleasure
- Provide suitable smoking areas and shelters in accordance with the Establishments requirements

2.10.3 While landscaping is to be encouraged, the design

needs to take account of the particular security requirements of the Establishment. Security policies generally restrict planting to ensure it does not obscure the building perimeter or provide hiding places. Concerns over Foreign Object Damage (FOD) to aircraft on sites with operational airfields and landing pads will limit the density and type of planting.

2.10.4 Landscaping shall be designed for low maintenance. Where existing trees are to be felled, these shall be replaced using an appropriate strategy in agreement with the Local Authority.

2.10.5 Necessary care shall be taken to ensure that foundations and drainage systems are designed to resist damage by trees, whilst also protecting existing trees and their root structures during construction.

2.10.6 The treatment of the routes around SLA buildings through the use of different materials can emphasise either a vehicular or pedestrian priority of access.

2.10.7 Car parking shall be located in accordance with Counter Terrorist Measures guidance in conjunction with Establishment security strategy.

2.10.8 The provision of access roads, cycle paths and pavements shall link up to the existing site network, taking cognisance of the Establishments traffic management plan.

2.10.9 Consideration will need to be given to the provision of disabled car parking, the requirement for which will be defined by the Establishment, relevant legislation and codes of practice.



2.11 Signage

2.11.1 Signage is required to the entrance to each SLA block, for ease of asset identification and way finding. These can be mounted on the building or provided as a free-standing sign. A building number sign shall be provided in a form to match the rest of the Establishment.

2.12 External Lighting

2.12.1 External lighting to buildings, roads and pathways is required to meet safety, security and amenity requirements. This should be considered at an early stage, by the Project Team in consultation with the Establishment and Local Planning Authority.

2.12.2 Lights mounted on the external faces of buildings are often subject to shading from soffits or fire escape stair cases. Consideration should be given to prevention of light pollution and nuisance to building occupants. These installations should be appropriately controlled to prevent lights activating during daylight hours. Lighting to amenity areas such as pathways and car parks are to be controlled by photocell.

2.13 Bicycle and Motorcycle Storage

2.13.1 Covered storage should be provided for living-in personnel, to provide secure storage of bicycles. These are to be located in close proximity to an entrance. The JSP Scales identify the minimum requirement, which should be reviewed with the Establishment to ensure adequacy of provision. Anecdotal evidence is that these racks are also used for securing motorbikes and this requirement should therefore be considered in developing the design which will result in a reduction of the occurrence of motorcycles being parked in car sized parking spaces or illegally parked on pathways, which will inevitably be a source of friction between residents.

2.14 Garaging

2.14.1 Where required garaging should be provided in accordance with the brief and appropriately sited to be unobtrusive and consistent with the landscape plan.

2.15 Bin Storage

2.15.1 Bin storage needs to be co-ordinated with the overall strategy for waste management on the Establishment. The Establishment's or Local Authority's method of refuse collection and recycling policy will dictate the number and size of bins to be catered for.

2.15.2 An appropriate bin store enclosure is required close to each building entrance, with an external access in close proximity to the access road. Dropped kerbs should be provided to allow for manouvering of the bins to and from the refuse lorry.

2.15.3 Careful consideration must be given to the siting of these enclosures in compliance with counter terrorist measures and so that they are conveniently located for users and refuse collectors to access them, but without spoiling the aesthetics of the building and development.

2.16 Bootwash

2.16.1 Boot washes should be provided in accordance with requirements of the Project Brief and ideally be located adjacent to a secondary entrance.

2.17 Service Access

2.17.1 Service access is needed for collection of refuse, deliveries and plant maintenance. Perimeter access will be required for building maintenance equipment and fire engines.

2.17.2 General vehicle access is required to the accommodation entrance for the transport of furniture and belongings, with a designated drop-off lay by.

2.18 Services Infrastructure

2.18.1 There will be significant interface with the various infrastructure and utility services: electricity, gas, water, drainage, public address systems, telephone, district heating systems, building energy management systems (BEMS), television cabling and potentially other MoD Establishment infrastructure within the local vicinity of the site (e.g. fuel lines, HV cables, fire mains).

2.18.2 In liaison with the MOD Project Team and Establishment, the Design Team shall check and verify the adequacy of drainage outfalls, communications and mains utility supplies for each project. This will include, but not be limited to, the commissioning of surveys, collecting historic data and identifying existing Establishment data discrepancies.

2.19 Drainage & Water Supply

2.19.1 Liaison with Project Aquatrine or equivalent authority is essential at the outset of any project.

2.19.2 All new drainage installations external to buildings shall be constructed to comply with relevant regulations and adoptable standards current at the time of design.

2.19.3 Foul and storm water drainage is to be discharged to the nearest collector drain, and either to an Establishment's own treatment works or into the public system.

2.19.4 Consideration shall be given to sustainable drainage systems to conserve water and reduce infrastructure maintenance.

2.19.5 As building projects are completed, Project Aquatrine or equivalent authority will adopt drainage and water supplies to a previously agreed location.

2.20 Telephone and Communications

2.20.1 The telephone installation shall provide access to the national telephone network and be appropriately sized to meet the User Requirement.

2.20.2 In addition each building is to have a minimum of one telephone connected to the MOD telephone network in a location to be agreed with the MOD Project Team. If the building has a lift then there is a need for an external line to the lift car for emergency use.

2.21 PA, Fire Alarm and BEMS

2.21.1 An appropriate allowance shall be made for the provision of Public Address (PA), Fire Alarms and BEMS. These shall be compatible with and connected to the Establishment's existing infrastructure and systems which may require the use of a wireless connection.

2.21.2 The Public Address System shall be audible throughout the building.

2.22 Design Quality

2.22.1 Launched in June 2001 by the Ministry of Defence

as part of its Better Defence Building Initiative; the Design Excellence Evaluation Process (DEEP) is an integrated Quality Management process that comprises design evaluation and peer review based on the three principles of:

- FUNCTION – operationally efficient solutions,
- IMPACT – design related to the external and internal environment, and
- BUILD – durable and fit for purpose

2.22.2 This process has been developed to encourage the delivery of innovative, functional, attractive and sustainable buildings ensuring continuous improvement in design quality across the MOD Estate.

2.22.3 All MOD Projects will be expected to undertake the DEEP process and demonstrate an appropriate level of design quality.



3.0 The Buildings

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3.1 General

3.1.1 SLA differs from hotel accommodation in the private sector, as occupants may live in this type of accommodation for several years and in some cases their entire military career.

3.1.2 Although domestic in size, SLA is subject to a greater than 'domestic' degree of wear and tear. The selection of finishes and fittings, and the design detailing must reflect this.

3.1.3 On large sites, consideration shall be given to developing more than one standard building design with a variety of forms, storey heights, layouts and perhaps with subtle material differences, so as to create visual interest, avoiding monotony, assisting in way-finding and to provide identity to individual buildings.

3.1.4 The choice of materials and components will need to give a domestic scale and character to the SLA building, while still meeting the endurance and maintenance criteria of the MOD.

3.1.5 Careful consideration of the size, style and orientation of glazing systems is encouraged, to create visual interest, and to avoid monotony.

3.1.6 Whether it is a flat or hotel arrangement, the treatment of the entrance core and shared accommodation areas is important in the overall configuration of the building footprint. If poorly designed, these link elements can waste large amounts of space or alternatively create mean congested areas with poor wayfinding that are 'institutional' in character.

3.1.7 The design of SLA should promote a contemporary domestic feel, with appropriate use of architectural detail, form and massing. Careful treatment of the entrance to the building and its adjacent landscaping will help to anchor it in its surroundings and establish the buildings identity.

3.1.8 The entrance areas will receive considerable foot traffic, and will be the first area in contact with any wet or mud brought in from outside. Access into the accommodation blocks should therefore progress from dirty through to clean areas such as communal rooms and bedrooms. Utility rooms and drying areas should be sited close to the accommodation entrance to allow dirty and wet kit to be left before personnel enter the living areas. These rooms can also act as a sound barrier between the circulation core and bedrooms to minimise disturbance.

3.2 Local Character

3.2.1 Building designs should respond appropriately in terms of scale, massing, character and in the use of materials, to existing developments in the locality. This is particularly so where new developments are located close to site boundaries and in close proximity to 'civilian'

developments where a particular vernacular character is prevalent.

3.3 Building Height

3.3.1 JSP 315 recommends accommodation blocks of 3 storeys for reasons of economy however this does not preclude the use of taller or shorter buildings where appropriate.

3.3.2 The Building Regulations restrict the height of unprotected external fire escapes. However, it is appropriate to carry out a risk assessment to establish whether protection or enclosure is necessary on stairs which exceed this height, particularly on exposed sites. It must be noted that any variance from the building regulations is only allowable subject to a determination being provided at design stage by the DIO Technical Standards Team.

“The choice of materials and components will need to give a domestic scale and character to the SLA building, while still meeting the endurance and maintenance criteria of the MOD”

3.3.3 Generally only buildings with over 3 storeys will have a lift installed. As a consequence, accommodation requiring disabled access will be located on the ground floor. However it is recommended that enough space be allowed for a lift to be retro fitted should this be a requirement in the future. Where SLA is built in conjunction with a Mess public room this issue will need to be carefully considered to ensure that all communal facilities are readily accessible to all building users, including the disabled. It must be noted that any variance from the building regulations is only allowable subject to a determination being provided at design stage by the DIO Technical Standards Team.

3.3.4 Early engagement with the appropriate authorities is recommended on sites with operational airfields and landing pads, where the building siting and heights can be restricted, to prevent interference with radar and instrument landing systems.

3.4 Building Fabric and Structure

3.4.1 The materials, building massing and density of development should be appropriate to the site and building use.

3.4.2 The choice of materials will influence the appearance of the SLA. Appropriate consideration should be given to the use of detail, colour and texture that successfully integrates the project with its context and neighbouring buildings.

3.4.3 The performance of the building fabric and structure shall not detract from the effective functioning of facilities. The structure shall provide adequate support for

the design loads without excessive deflection or vibration and be in compliance with the Building Regulations, Fire Standards and Counter Terrorist Measures (CTM).

3.4.4 On sites in the vicinity of aircraft runways and in exposed locations, the risk of uplift either due to wind or turbulence generated by low-flying aircraft needs to be assessed. Where applicable, the building fabric and structure shall be designed accordingly.

3.4.5 The structure and fabric shall be designed with adequate protection from corrosion, rot, and insect infestation. Protection shall also be offered from other means of deterioration such as contamination, moisture passage or chemical attack by salts or other substances existing in the ground-bearing strata.

3.5 Refurbishments

3.5.1 In the provision of SLA, refurbishment of existing accommodation should always be considered an option and compared against new build for value for money in the Assessment Study. This will determine whether refurbishment, modernisation or new build provides the best value in whole life terms and meets the accommodation requirements of the particular project.

3.5.2 The cost of ownership of historic buildings which as a result of their location must remain a MoD asset, must be appropriately considered when assessing whole life costs. Unless a suitable alternative use can be found for the listed building the cost of ownership of that building may have to be added to the cost of the new build. Such considerations must, of course, sit alongside the evaluation of the functionality of the alternative solutions.

3.5.3 Each refurbishment project will present different challenges and opportunities, and thus it is difficult to give specific design guidance.

3.5.4 The MOD has responsibility for the largest proportion of historic buildings on the Government Estate and is publicly committed to aiming for the highest standards of conservation. The term 'Historic Building' denotes all buildings of architectural and historic interest. The MOD is not exempt from listed building and scheduled monument consent procedures. It is possible that buildings being considered for refurbishment or demolition will be either of national or local historical interest.

3.5.5 It is important to assess the current condition of the building structure, fabric, finishes and building services including drainage and to determine the general structural arrangement and principles such as column positions, load-bearing walls and floor span directions. All of which will influence design proposals.

3.5.6 The policy for SLA refurbishment projects is to adopt the appropriate accommodation standards for space planning wherever practical but this will be determined by the constraint of the existing building. The JSP 315 scales of accommodation are to be used as a guide to the room requirements but strict provision of scaled areas may not be possible in all instances. A proportion of over-scaled or under-scaled accommodation may be acceptable where no other solution is possible. The acceptability of such

solutions will need to be evaluated and agreed during the early design phases. In all solutions it is important that the layout of any living space should be well-proportioned, with some flexibility in the layout of furniture.

3.5.7 Challenges on refurbishment projects will include upgrading of accommodation to meet Building Regulations, particularly relating to Fire, means of escape and environmental performance. Sub-division of existing building layouts may result in increased travel distances and necessitate additional escape stairs.

3.5.8 Compliance with security and CTM should be carefully considered. The cost of measures to satisfy compliance can be significant and can challenge the affordability of refurbishment solutions. The condition and location of the building is key to any assessment and early dialogue with the MOD Project Team and MOD specialists is essential to ensure reasonable and practicable designs are considered.

3.5.9 Refurbishment shall be carried out with care and in sympathy with retained features and materials, particularly where the buildings have an architectural or cultural heritage whether listed or not.

3.5.10 Where the SLA requirement forms part of a building that includes other functions (i.e. public rooms and kitchens) then any assessment should consider the economic benefit of extending the work to other areas not originally included in the scope of work.

3.5.11 Consideration should be given to the salvage and adequate protection of any materials which can be recovered that are suitable for re-use in the refurbishment, particularly where features of a historic interest are concerned (e.g. roof tiles, selected masonry units or ornate carpentry or sculpting).

3.5.12 There may be a requirement by the Local Planning Authority or English Heritage to record the existing building prior to commencement of any refurbishment or demolition works.

3.6 Disability and Equality

3.6.1 The accommodation shall be designed to allow for access and egress by disabled visitors who will generally be accompanied by a resident or under escort; this will include provision of a disabled toilet.



3.6.2 Where there is a requirement for disabled bedrooms the design should meet the general mobility needs of reasonably fit wheelchair users and those with ambulant disabilities living independently. This shall include the bedroom, common room, kitchen and utility facilities, corridors and doors en route from and including building entrances. Specific provision would not normally be made for those with a hearing impairment unless stipulated in the URD.

3.6.3 Typically there will be a lower ratio of inclusive living rooms compared with normal planning requirements, actual provision should be discussed at design stage and agreed with the MoD Building Standards team prior to submitting an application for Determination.

3.6.4 It is important that any approach provides spaces which are “inclusive” so that they can be used by disabled and able bodied personnel alike for example automatic door mechanisms.

3.6.5 Unless there is a requirement to accommodate a specific occupant it is recommended that the building design should be such that it facilitates a cost effective retrofit.

3.6.6 In some cases it may be necessary to provide facilities to suit the requirements of particular occupants. In such cases the installation of appropriate builders work and disability fittings will need careful consideration and MoD Project Team approval.

3.6.7 There is a range of legislative, regulatory and guidance documents that can assist in understanding what is reasonable and practical. These documents also provide recognised performance standards for the achievement of reasonable provision in respect of designing for disabled people and assist building operators in addressing their legal liabilities. Where necessary an Access consultant should be engaged to assist the Project Team in delivering an appropriate solution.

3.6.8 At the concept design stage an Access Strategy appropriate to the project should be agreed with the Establishment and the MOD Project Team. This should be recorded to assist in design monitoring, audit and to inform the Access Statement.



4.0 Elemental Design Principles

4.1 Introduction

4.1.1 The SLA is home to the servicemen and women during their training or posting to a unit, and the following elements play an important role in creating the appropriate environment.

4.2 Building Interiors

4.2.1 The materials and finishes specified shall achieve a satisfactory compromise of being on the one hand durable, hard-wearing and easily cleaned, and on the other of being attractive, comfortable and homely.

4.2.2 On certain high profile or sensitive projects, there may be a need to prepare detailed designs and specifications, including the provision of sample boards, visuals, walk-throughs and lighting proposals to be agreed by the Project Team.

4.2.3 The use of colour and texture as accents is to be encouraged to aid wayfinding and visual impact.



4.3 Floors

4.3.1 The choice of floor finish should be appropriate to the use of the individual space and consistent with the interior design concept.

4.3.2 All floor finishes particularly those to stairs, landings and corridors shall be hard wearing and of colours that will disguise marks. All floors in these areas shall also be designed to reduce ambient noise levels.

4.3.3 The floor construction needs to be of sufficient thickness and mass to meet the acoustic and fire performance criteria defined by the Building Regulations.

4.4 Partitions

4.4.1 The partition construction needs to be sufficient to meet the acoustic and fire performance criteria defined by the Building Regulations and Crown Fire Standards.

4.4.2 The materials specified will be robust, hard-wearing and capable of resisting impact damage.

4.5 Ceilings

4.5.1 The choice of ceiling system will have an effect on the success of a space visually and acoustically, and will be dependent on its function, whether it provides security, fire protection or access.

4.5.2 The use of lay-in grid ceiling systems should be avoided in bedrooms and common rooms to prevent an institutional feel.

4.5.3 The choice of lay-in ceilings to circulation areas is acceptable but should be carefully considered, again to avoid an institutional feel.

4.6 Doors

4.6.1 External doors will need to be robust enough to withstand heavy use, with a locking and hinge mechanism able to resist attempts at forced entry.

4.6.2 Regularly used entrance doors should be partially glazed to ensure good vision and meet the needs of wheelchair users for example automated door mechanisms.

4.6.3 Internal doors will receive a high degree of wear and shall be flush, solid core construction. The finish of the door leaf, frames and architraves shall be consistent with the interior design concept and adequately protected from knocks and impact damage.

4.6.4 The fire rating of internal doors, the leaf construction, ironmongery, smoke seals, vision panels etc., shall be in accordance with current Building Regulations and Crown Fire Standards.

4.6.5 Glazed screens shall be in accordance with current Building Regulations, Crown Fire Standards and consistent with the site CTM strategy.

4.6.6 Georgian Wired glass must not be specified to any glazing.

4.6.7 Rather than knobs, lever handles should be provided to doors, to provide an easier opening mechanism for personnel with wet, oily or impaired hands. The choice of ironmongery will be appropriate for the anticipated heavy use.

4.6.8 Internal doors will need name or number plates, identifying a room by its use or number, or allow individuals to insert their own name plate on bedsitting room doors.

4.6.9 Internal doors should be configured to avoid clashing with other doors, furniture and fixtures and fittings (such as radiators). Door stops should be provided to avoid noise disturbance and damage to wall finishes.

4.6.10 Access strategy and siting of locks should be determined by the Establishment and the MOD Project Team, with due regard for personal security, maintenance and disability requirements. A minimum of 3 no keys per lock or master must be provided.

4.7 Windows and Glazing Systems

4.7.1 The window construction and glazing should be designed with reference to the DEO (W) Design and Maintenance Guide 02 and DMG 02, Amendment 1: 'Glazing standards for MOD buildings subject to terrorist threat' and to the appropriate standard identified by the Statement of Security Requirements (SSR) for the Project.

4.7.2 The window design needs to meet the performance criteria defined by the Building Regulations as a minimum, taking due cognisance of the need for adequate ventilation, daylighting, views, security and safety. (Note: An increase over the minimum Building Regulations trickle vent sizing is a cheap and effective way to help the control of maximum summer time temperatures).

4.7.3 All windows are required to have opening restrictors fitted for safety and security purposes, not exceeding 300mm. This must be taken into consideration when calculating building performance.

4.7.4 Consideration should be given to defeatable restrictors i.e., the operator has to make a conscious decision to fully open the windows. This would potentially reduce unscheduled works for the replacement of broken restrictors and provide improved comfort during the summer months.

4.7.5 The core is a significant feature of the buildings and provides an opportunity to enhance the natural ventilation throughout the building. Controllable high level openable windows are to be installed to facilitate summer and winter modes of operation.

4.7.6 Access to areas such as the entrance atrium should be fully accessible for cleaning, particularly high level windows and ledges. Due consideration should be given to low maintenance materials.

4.8 Furniture, Fixtures and Equipment

4.8.1 The project should provide furniture; fixtures and equipment which represent value for money and an appropriate level of robustness. Furniture used in SLA must be appropriate and consistent with the design philosophy, be able to withstand heavy use, coordinate with the chosen room colour scheme and meet the current Fire Safety requirements and conform to the appropriate British or European Standards.

4.8.2 It is important at design stage to establish which items of furniture are included within the building contract and which items are to be provided directly by the MOD.

4.8.3 The choice of furniture should take maintenance into account. Items must be easy to repair and allow replacement of individual elements, such as wardrobe doors. Hinges and brackets on cupboards and wardrobes should be from a heavy duty range with secure fixings to avoid the need to realign doors during the life of the unit. The use of face-fixed hinges, or hinges with loose pins that may easily be removed, should not be used, to protect individual's belongings from theft.

4.8.4 Colours should be specified which disguise the marks of general wear; for example, white bedroom

furniture should be avoided. However, dark coloured furniture can be intrusive in small rooms, giving an oppressive feel. Light coloured timber veneers give a smart, attractive appearance.

4.8.5 All common rooms and bedrooms are to be provided with curtains, and all utility rooms with blinds. The use of net curtains should be considered where there is a need to give privacy to ground floor windows and where rooms are over-looked.

4.8.6 A good provision of coat hooks is to be provided in appropriate locations, with numbers and positions to be agreed with the MOD Project Team.

4.8.7 "X" and "Y" type accommodation requires padlock fastenings to all wardrobes, cupboards, etc.

4.9 Wet Areas

4.9.1 Wet areas can include Utility and Drying Rooms, Ablutions, En suites, Shower Rooms and Bathrooms.

4.9.2 The good design and construction of wet areas is paramount to ensure that the problems of water leakage and subsequent damage to the building fabric are avoided. The design and specification of materials and components needs to be carefully considered and should be appropriate to the intended use.

4.9.3 Wet areas will generally rely on a mix of natural and mechanical extract. Whatever system is used it must be sufficient to ensure no build up of moisture in the room.

4.9.4 The specification of fans for extract should have due regard to limit noise disturbance to adjacent rooms.

4.10 Finishes

4.10.1 The finishes within SLA need to be hard wearing and easily maintained to take the knocks that will be dealt to them. Servicemen and women are heavy users of their accommodation, particularly the circulation spaces and communal facilities. The entrance to the building will receive the most traffic and will need a heavy duty choice of finishes.

4.10.2 Personnel may be returning from dirty activities or carrying equipment and until they reach the utility, drying or storage areas their movement through the building will leave its mark on the floor and walls.

4.10.3 Repairs to SLA are inevitable over the life of the building. The choice and detailing of finishes should allow easy, regular cleaning and facilitate sectional repair or replacement in the event of damage. The matching of finishes needs to be considered through the initial

“ The materials and finishes specified shall achieve a satisfactory compromise of being on the one hand durable, hard-wearing and easily cleaned, and on the other of being attractive, comfortable and homely. ”

specification of readily available materials and colours. Specification details should also be included in the Building Maintenance Manual provided by the Contractor at handover.

4.10.4 Generally cleaning within the flats is carried out by personnel living in the building, although communal circulation areas and sitting rooms are sometimes cleaned by contract cleaners. Areas to be maintained need to be finished with surfaces that can be readily cleaned on a regular basis, without the use of mechanical appliances.

4.10.5 Cleaning of slip-resistant flooring is often difficult, because of the drag of the surface finish. Non-slip vinyl floor finishes can become badly marked from rubber-soled boots and light coloured vinyl should be avoided.

4.11 Service Risers

4.11.1 The space allowance for service ducts adjacent to the en-suite WC facilities varies with the system used. Good access is to be provided from the corridor and the duct design and configuration should permit safe and easy access for installation and maintenance.

4.11.2 Where the service void houses domestic hot and cold water services, ventilation should be introduced as necessary to avoid a build up of temperature which may result in water hygiene issues.

4.12 Natural vs. Artificial Lighting

4.12.1 No room, other than store rooms, bathrooms and en-suites, are to be designed without windows. The planning of SLA must allow natural light into and views out from all habitable rooms, particularly the bedrooms, communal rooms and offices. Similarly the utility room and ablutions areas should have a natural light source.

4.12.2 Artificial lighting shall provide adequate illumination, direct or reflected glare shall be minimised.

4.12.3 The use of borrowed light in internal corridors should be considered where practical.

4.12.4 Glazed panels should not be provided over bedsitting room doors, as night time light levels from the corridor may disturb the occupants.

4.12.5 Emergency escape lighting is required in accordance with an approved fire strategy.

4.13 Acoustics and Sound Control

4.13.1 The habitable rooms within the SLA need to be protected against noise generated outside, as well as from adjacent rooms within the building. This can be achieved partly through the internal planning of the SLA. Noise sensitive rooms, such as sleeping quarters, should be separated from communal facilities which generate noise, i.e. utility rooms, busy circulation cores etc. Where the space planning does not allow this, the construction of separating walls must provide adequate sound insulation.

4.13.2 Most servicemen and women have their own entertainment systems such as music systems, televisions, computers, etc. The construction of partitions within the

SLA needs to provide good sound insulation between rooms, and in accordance with the Building Regulations as a minimum.

4.13.3 Corridors are spaces where the generation of noise disturbance is most common. Doors in corridors should be sited to avoid creating a nuisance to bedroom occupants, as banging of doors will disturb sleep. Corridors should be separated from general circulation zones by use of self-closing doors.

4.13.4 Where possible, bedroom doors should be staggered so that the opening of one bedroom door will not disturb the occupant opposite. Floor and wall finishes along busy circulation routes should be chosen to minimise noise.

4.13.5 The ventilation system needs to be designed to ensure low noise levels within the bedrooms. This is particularly important with ensuite WC and shower rooms, which rely exclusively on the mechanical extraction of air, and which are sited close to sleeping areas. Fan run on timers should not be less than that stipulated by Building Regulations. Consideration should be given to trickle mode operation to help bring in fresh air and control maximum summer time temperatures. Humidity override is also worth considering.

4.13.6 Ventilation systems should be designed such that ductwork is not visible in habitable spaces. The installation of boxed in ductwork running across ceilings or down walls in such spaces is unacceptably visually intrusive.



5.0 Accommodation Types

The following section describes the individual accommodation types and deals with their specific design considerations:

Junior Ranks (JSP 315 Scale 3)

- Z Type Flat or Hotel
- X Type
- Y Type

SNCOs (JSP 315 Scale 35)

Junior and Senior Officers (JSP 315 Scale 30)

5.1 Junior Ranks Z Type

5.1.1 There are two basic concepts for delivering Z scale accommodation, the Flat or the Hotel. The decision to use the Flat or Hotel concept should be based on the requirements of the Establishment, the needs of the unit and the Service personnel.

5.1.2 The accommodation shall be suitable for the residents to enjoy living together in an attractive, comfortable, secure and 'homely' environment, whilst at the same time providing suitable privacy and security for the individual.

5.1.3 The accommodation shall be designed to suit either male or female personnel. The occupants generally will be young and active. The accommodation therefore shall be robust with a quality of finishes and furniture able to withstand a high degree of usage.

5.1.4 The Flat is 'home' for 6 to 8 servicemen or women with individual bed sitting rooms, sharing a common room, utility, snack preparation and bathroom.

5.1.5 The bedsitting and common rooms are where occupants will spend their time relaxing, studying and sleeping. The bedsitting room provides storage and security for personal belongings.

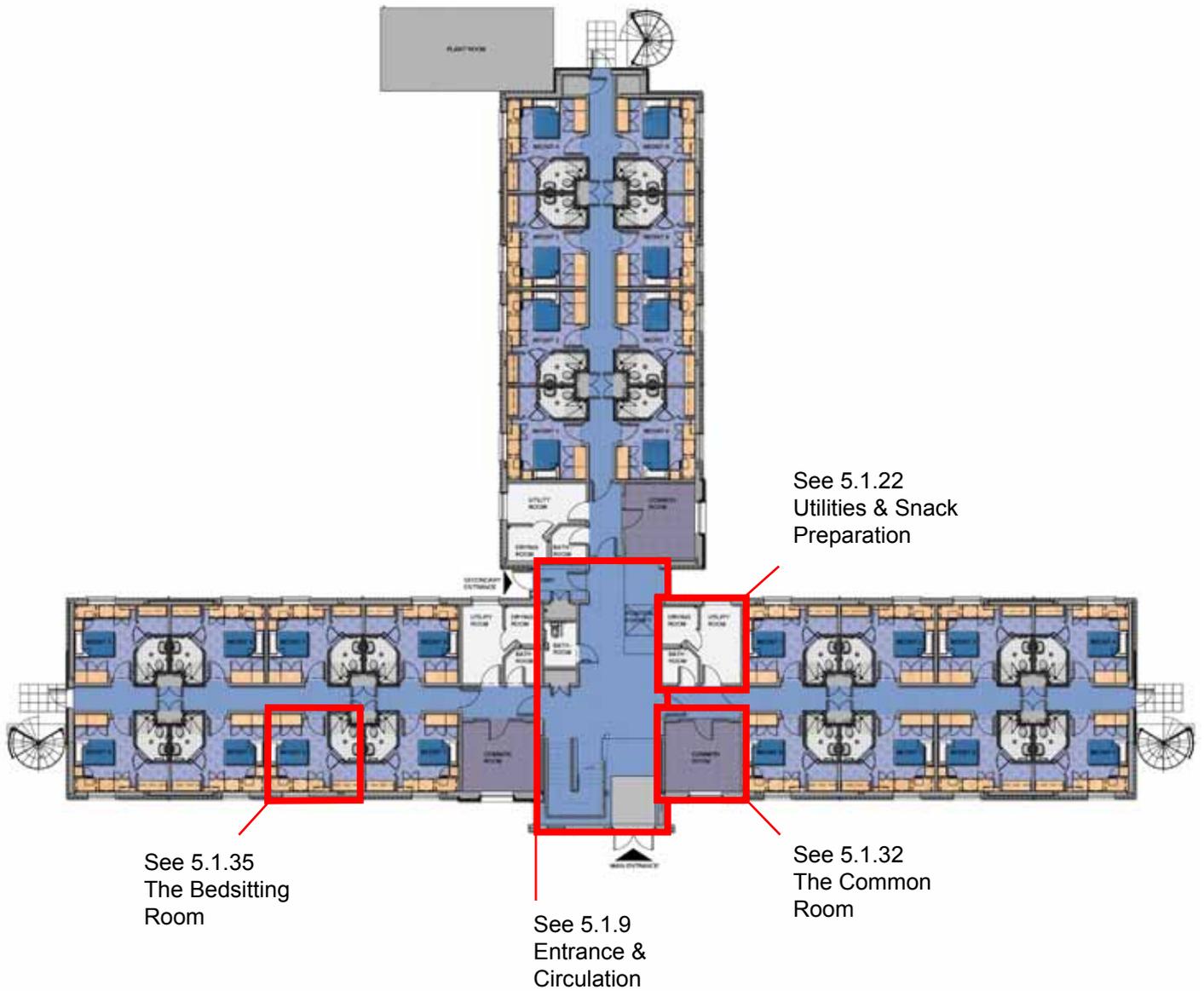
5.1.6 The working patterns of the occupants will vary, with some working '9 to 5', some doing shift work and others away for periods on exercise and deployment.

5.1.7 An alternative arrangement to the more usual flat and hotel configurations is the terraced house. Here the en-suite bedrooms and all the shared facilities are organised into a three storey house with its own front door.

5.1.8 Each house typically includes the communal and utility rooms and two en-suite bedrooms on the ground floor and a staircase leading to six further bedrooms on the upper floors. Technically the arrangement cannot be a self-contained normal 'house' as the first and second floors need to be linked to other houses for fire safety purposes. In everyday use, with connecting doors closed, this arrangement can provide a very different proposition compared with the conventional flat and offers a more domestic external appearance. Houses can add a further layer of flexibility and self-containment for small units. With just the ground floor bedrooms suitably modified, houses are especially suitable as part of the overall inclusive living strategy.



TYPICAL 'Z' TYPE PLAN



Entrance and Circulation

5.1.9 These areas form the 'gateway' to the servicemen and women's home and shall be well illuminated, attractive and inviting. The main entrance and its approach should reflect this intent. It is recommended that a secondary entrance is provided as the front entrance may not always be convenient for accessing all areas of the Establishment.

5.1.10 The layout and scale of the entrance needs to be efficient, uncluttered and should aid clear wayfinding.

5.1.11 The choice of materials, colours and finishes must reflect this approach but acknowledge the particularly heavy usage these areas receive. The use of accent colours is to be encouraged to provide visual interest and identity.

5.1.12 The stair is often the focal point to a lobby and core and therefore the design and construction of the staircase, handrails and balustrades must reflect this. The stair width should be sufficient for 2 people to pass with ease, allowing for each carrying a backpack or shoulder kit bag. If a lift is not provided the design of the stairs must also make allowance for the movement of maintenance items, furnishings, materials etc into and out of the building in order to prevent damage to the walls and finishes.

5.1.13 Artificial lighting in these areas shall provide good levels of illumination, whilst offering an arrangement that minimises direct or reflected glare using subtle lighting solutions.

5.1.14 Light fittings shall be robust but decorative and located so that they are not vulnerable to damage by passers-by carrying bulky luggage, backpacks or large items of furniture. PIR or timed switching should be utilised for energy conservation, with timing carefully tuned to suit the location and function of the space.

5.1.15 Consideration should be given to the environmental conditions to maintain a reasonable temperature in both summer and winter. The use of passive stack ventilation in

these areas can also aid the control of the environmental conditions throughout the building.

5.1.16 Buildings over three floors are usually fitted with a lift. The location of which must be carefully planned to allow circulation around the doors and to ensure the overrun at roof level can be accommodated in the roof structure. In addition, refuge areas must be identified and an Emergency Voice Communication system should be installed in that location.

5.1.17 Adequate notice boards, full height mirrors and a MOD telephone point shall be provided. Other services shall also be conveniently and safely positioned. For example, radiators shall not restrict circulation. The fire alarm panel must be located in an appropriate position adjacent to the main entrance.

5.1.18 Other rooms usually associated with core areas are cleaner's rooms and stores, disabled toilet and communications equipment rooms.

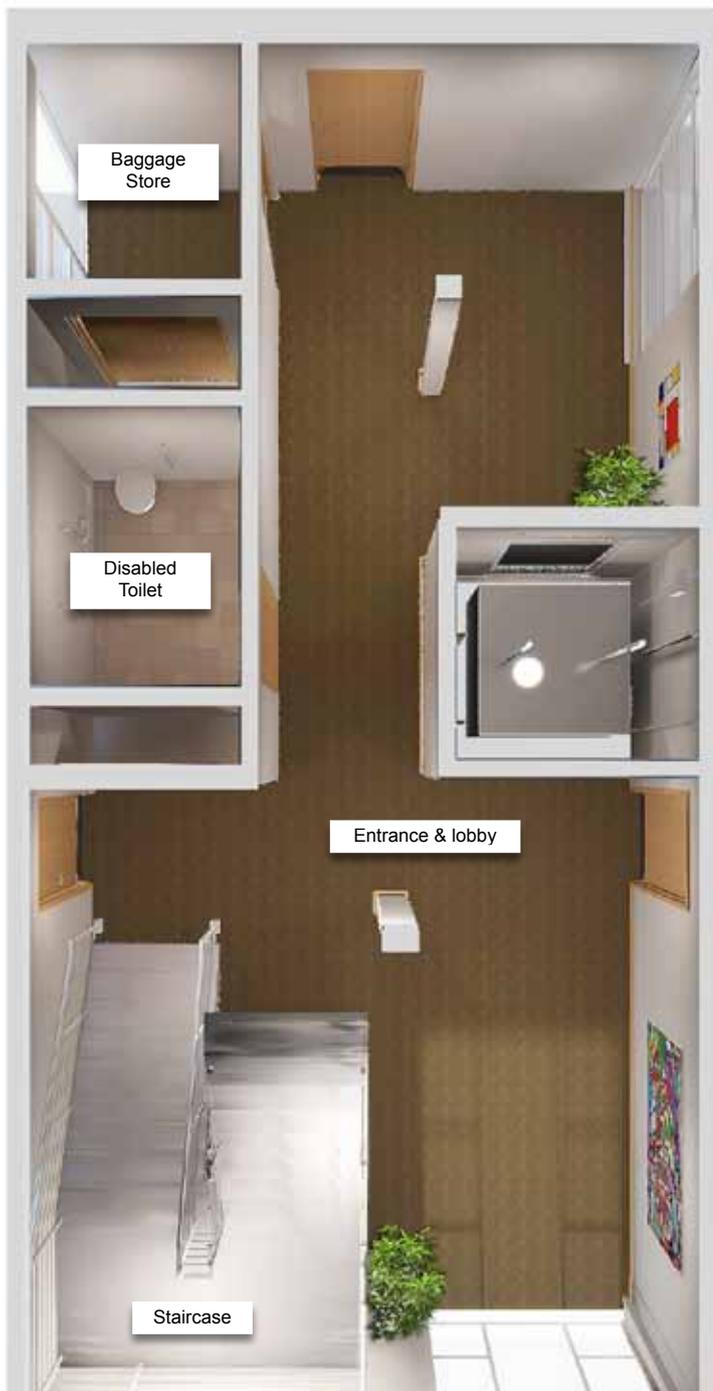
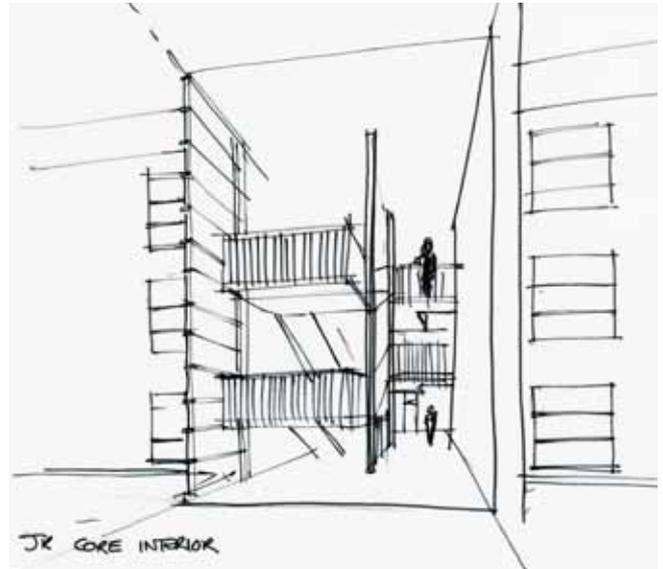
5.1.19 Major electrical distribution boards or switch panels must be separated from the core and other means of escape by a lobby.

5.1.20 When planning the sleeping quarters the design of the circulation spaces should avoid long and featureless corridors and be sensitive to the volume of traffic, allowing the occupants in full kit to move about the building with ease.

5.1.21 Sufficient directional signs will be required in circulation areas to clearly indicate the location of individual bedrooms. Internal doors will also need name or number plates, identifying a room by its use. The room numbering convention should be developed at an early stage with the Establishment.



THE CORE



Hints & Tips

- *Consider the use of accent colours to provide visual interest and identity.*
- *Consider health and safety when designing the areas around and under the stairs.*
- *Consider the need for a secondary entrance and exit as the front entrance may not always be convenient for accessing all areas of the Establishment.*
- *Consider the use of lightwells to create visual interest and improved natural lighting.*
- *The use of passive stack ventilation to reduce solar gain in these areas can aid the control of the environmental conditions throughout the building.*
- *Electrical distribution boards or switch panels when located in cores must be lobbied.*

Utility and Snack Preparation

5.1.22 In the flat format the Utility and Snack preparation room, much like a domestic kitchen, will provide a facility to prepare snacks and light meals, and store foodstuffs as well as a place to wash, dry and iron clothes.

5.1.23 In addition, storage shall be provided for cleaning materials and equipment.

5.1.24 The worktop shall include a fitted hob which shall include appropriate safety cut off devices such as a time delay switch. A cooker hood should be located over the hob.

5.1.25 Space and service connections shall be provided to allow the installation of fridges, microwaves, washing machines and tumble dryers. Tumble dryers shall where practical be located adjacent to an external wall since there is a preference for vented units over condensing type as they typically require fewer user and service attendances.

5.1.26 Designs shall allow for selective disposal and recycling of dry waste, plastics, paper, glass and organic matter, relevant to the site specific waste management policy.

5.1.27 In the hotel concept the larger area will enable a more efficient and flexible use of space where the snack preparation area can be combined with the common room, for example, either as an open planned space or separated by a partial dividing wall. Fixtures and fittings in the snack prep area will need careful consideration to meet the appropriate JSP Scale.

5.1.28 The utility and snack preparation room shall be well lit, and provided with adequate socket outlets. This room can become hot and humid at peak usage so adequate mechanical ventilation should be installed in conjunction with openable windows to ensure cooking smells are quickly removed along with the build-up of humidity and condensation. This is especially important considering the expected heavy use of the washing machines and tumble dryers. Where possible consideration should be given to separating the Utility Room from the Snack Preparation Room.

5.1.29 The use of plastic curtains to separate the drying space from the kitchen is to be avoided. This solution can be unhygienic and lead to clothes being contaminated with cooking smells. A separate drying room is therefore recommended which also provides an opportunity for effective and energy efficient means to dry clothes.

5.1.30 Careful consideration is required to ensure that an appropriate level of ventilation is provided to control cooking smells and heat build up invading the Common Room area.

5.1.31 In the JSP Scales there is a requirement to provide individual lockable storage in the Snack Preparation area. The requirement for this facility should be confirmed at the Project Brief stage. User feedback indicates this is more likely to be required in a hotel format.

“accommodation shall be suitable for the residents to enjoy living together in an attractive, comfortable, secure and ‘homely’ environment”

Common Room

5.1.32 It is important that this social space invites use and is planned accordingly, maximising views out with large windows. The occupants use the common room to collectively socialise, relax, take refreshments and eat together. The room shall be homely with adequate soft furnishings and a coffee table(s).

5.1.33 Ideally the wall to the corridor will have a glazed panel to encourage the use of the facility and communal living. The shape of the room and the appropriate provision of furniture shall allow the occupants to personalise this space.

5.1.34 Whereas occupants will often have their own television in their rooms, it is likely that the communal room will provide for group watching so should have a TV socket, power supplies and individual switched lights to allow dimming (TV provided by others). A good distribution of wall sockets in the room is necessary to allow the occupants to use table and free-standing lamps, as well as other appliances such as a music system or for ironing.

COMMUNAL AREA



Hints & Tips

- *It is recommended that user activated timers be incorporated in the wiring of hobs to limit the maximum period they could be left unattended to 20 minutes.*
- *Allow space for separate recycling bins*
- *Deep sink required for laundry and shallow sink for food preparation purposes.*
- *Allow adequate ventilation to allow for the following:*
 - *Humidity*
 - *Cooking Smells*
 - *Tumble Dryer*
 - *Drying Room*
- *Avoid the use of plastic curtains to separate the drying room from utility.*
- *Consider alternative furniture layouts to the Common Room to demonstrate flexibility in use.*
- *Consider the use of flat screen wall mounted TVs and the affect of daylight on viewing.*
- *The entrance lobby is a pinch point and therefore should be of sufficient width to aid circulation.*

The Bedsitting Room

5.1.35 Under the JSP scales the area allowance for the bedroom and ensuite are combined. Careful consideration should therefore be given to this balance of space, maximising the usable space within the bedroom and minimising the space within the en-suite area.

5.1.36 The bedsitting room will be an individual's own personal space and is to provide suitable privacy. The occupant will need space to study, sleep or relax in private, listening to music, watching television or using a personal computer. It is likely that the occupant may on occasions eat a snack in the room and entertain visitors.

5.1.37 The room must be comfortable and relatively easy to personalise, yet functional and secure. It will serve to safely store personal possessions including military kit, civilian clothes, books, music and multimedia, a variety of electrical equipment and sports kit, and potentially other hobby equipment or collections.



5.1.38 The room shall include power sockets for personal electrical appliances which should be positioned to allow flexible use.

5.1.39 Connection sockets shall also be provided for telephone for voice and internet access plus combined digital television and FM radio and other cabling for modern communications media. Due to the constant changes in service provision and technology the actual requirement for and delivery of multi-media services to bedrooms and common rooms shall be discussed and agreed with the Establishment and MOD Project Team, ideally this should be specified in the Requirements Specification.

5.1.40 Occupants are accountable for damage in their own rooms; finishes, fixtures and fittings therefore must be comfortable, durable and of high standard.

5.1.41 Different Establishments have differing policies on putting up pictures, sticking posters to walls etc. Careful consideration should be therefore given to the size and location of the notice board(s) to enable occupants to personalise their space and to limit damage to walls from drawing pins, re-usable adhesive, etc.

5.1.42 Lighting shall be provided to suit the wide variety of tasks the occupants will undertake in their room which will include general study, computer work, reading (both in and out of bed) and other activities. Task and bed side lighting is not generally provided by the project.

5.1.43 Consideration shall be given to providing adjustable and dimmable lighting that is individually switched, allowing occupants to create a variety of different lighting moods.

Baggage Store

5.1.44 The provision of an in-room store is key in providing security of possessions and in maximising flexibility.

5.1.45 The bedroom shall include a store room with adequate shelving for storage of bulky personal items and flexible enough to store loose furniture should the user so wish.

5.1.46 The store should have a light controlled by a timer switch to prevent energy wastage. This switch should be located immediately outside the store.

En suite

5.1.47 En-suite rooms shall provide a suitably ergonomic toilet and washing facility with a good supply of hot and potable cold water.

5.1.48 They shall be well ventilated and incorporate a suitable light fitting and shaver socket. There shall be an adequate provision of relevant functional fittings including mirror, hooks, shelf space and heated towel rail in accordance with the scales.

5.1.49 Showers must be regulated to provide an invigorating flow of water (typically 8-9 litres per minute). Fittings must be robust, and the provision of suitable hooks to hang wet personal kit over the shower floor area should be considered. Due to the transient nature of occupancy and difficulties for the Establishment in implementing flushing responsibilities the Project team shall pay special consideration to shower arrangements. Pre-flush or self purge type showers have been seen to provide control of Legionella at the shower head and should be considered where ever practicable.

5.1.50 Washbasins shall be large enough to wash and shave in and have adequate 'elbow' room around them. (Small 'hand wash' style basins are not appropriate). Consideration shall be given to the adequate storage of toiletries and towels.

5.1.51 The shower space shall be designed with adequate floor area, head room, 'elbow room' and well positioned shower head and controls. The use of shower cubicles and trays should be carefully considered in this respect.

5.1.52 Shower rooms should be configured so that the entrance door does not clash with en-suite fixtures and fittings.



THE BEDSIT Hints & Tips

- *These rooms are small spaces so consider opportunities to create visual interest and flexibility which will allow the space to be personalised for example by alternative furniture layouts - in the illustrated example only the wardrobes are fixed.*
- *The position of socket outlets, tv and data points need careful consideration in relation to the optimum, flexible use of furniture and equipment*
- *In this example the 'V' shape feature in the wall to the store and en-suite is an efficient use of space and creates interest when compared to a square and rectangular room.*
- *The incorporation of a larger than scaled notice board allows the occupant to personalise their wall space without damaging the decoration*
- *Avoid the use of a short 'hallway' immediately inside the room. This can result in the usable element of the room feeling small and claustrophobic, effectively it is a waste of space.*
- *Consider the use of colour and accent walls in a small room.*
- *The incorporation of a 'wet room' maximises the use of space, but needs to be carefully designed so that the whole room does not become saturated as a result of shower usage.*
- *In the example an oversized mirror has been employed enhancing the visual and spatial quality of the room.*
- *In the example, the dimensions of the store have been carefully considered to allow the desk to be relocated against the external wall and drawer and cupboard units against the party wall - thus freeing up space in the bedroom.*
- *Consider adding a socket outlet in the storeroom.*
- *Consider providing moveable shelving, including a deep shelf with a hanging rail underneath to increase the clothes storage capacity.*



5.2 Z Type Hotel

5.2.1 In the hotel format the occupants have their own bedsitting rooms, but the rest of the facilities are shared by the whole floor. This format provides an opportunity to create a separation between the potentially conflicting functions of the common room and snack preparation areas and the utility and drying areas. In providing only one of these facilities per floor the larger spatial allowance enables the provision of more flexible and functional spaces than is possible with the flat format. The example shown provides a combined common room and snack facility adjacent to the main entrance mirrored on upper floors. The utility and drying areas are similarly located but at the rear of the building.



Entrance and Circulation

5.2.2 In the hotel layouts the entrance and circulation follows the same design principles as the 'Z' type flat, except for the bathrooms. Customer feedback shows that the bathrooms are better located off corridors rather than directly off the core where they are less likely to be used.

Utility and Drying

5.2.3 The utility and drying elements can be combined to provide a single facility per floor located off the core. In locating the washing machines and tumble dryers consideration should be given to their use during busy periods and providing services to them.

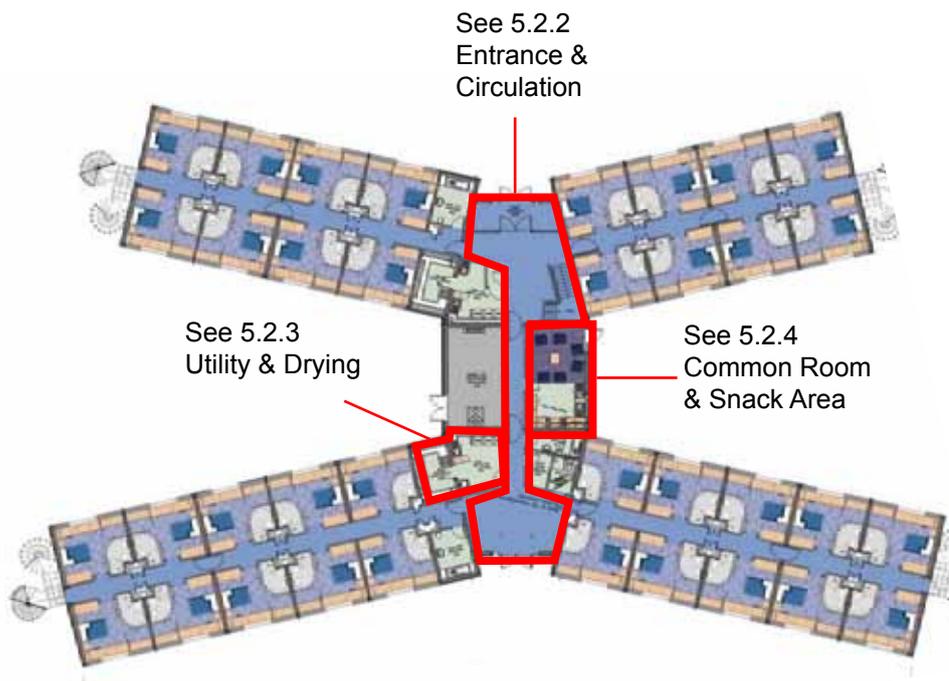
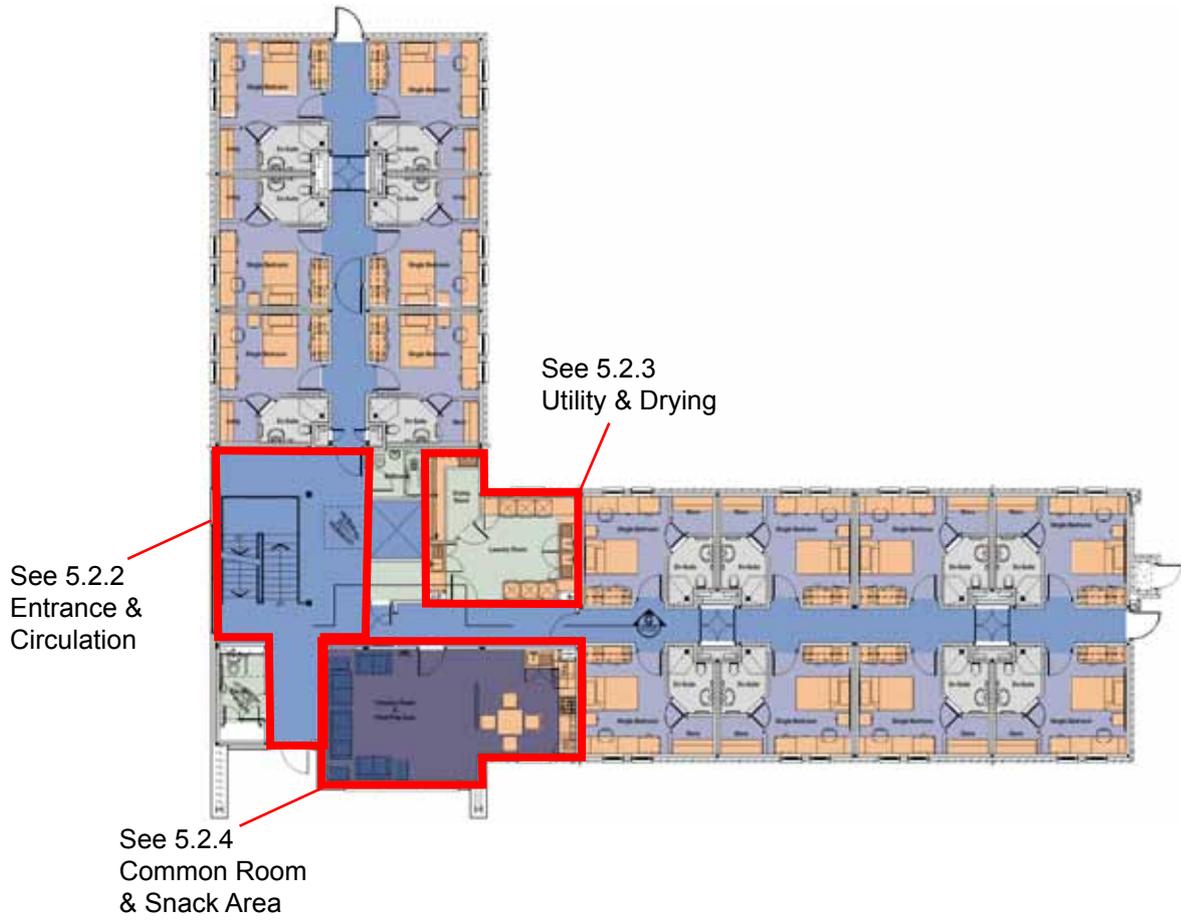


Common Room

5.2.4 The facility should be designed to be visible to the occupants and encourage use. The combination of the common room and snack preparation area provides a real opportunity to create an attractive and flexible space. In the example the room is an open plan format but with a freestanding wall between the common room and snack preparation elements, which provides an element of visual separation between the functions. The freestanding wall provides an excellent focal point within the common room and is an ideal location for the installation of a flat screen TV. Allowance should be made for the installation of an appropriate mix of furniture that will allow for a variety of uses, including sofas and lounge chairs and dining tables and chairs.



ALTERNATIVE 'Z' TYPE 'HOTEL' PLANS



5.3 Junior Ranks X Type

5.3.1 Type X accommodation provides dormitory style bedrooms for 8, 12 or 28 (Navy Pre-sea scale) personnel.

5.3.2 The accommodation described here is generic and the principles are generally transferable between Services.

5.3.3 This accommodation is generally used for Phase 1 & 2 personnel undertaking initial training and induction. On some Establishments the recruits can be under 18 years of age.

5.3.4 The nature of these buildings and their occupants give rise to important design considerations, in particular Duty of Care. The design shall therefore provide a building which delivers an environment for the Duty of Care, welfare and educational needs of the trainee whilst considering the operational needs of the trainers to supervise and manage the trainees in a safe and efficient manner.

5.3.5 The Project Team must therefore engage with representatives of the Establishment and training organisation to ensure the design meets these requirements.

5.3.6 The layout shall be designed to cater for the movement and circulation around the building of large groups of personnel at the same time. Furniture and finishes should be of good quality avoiding an institutional feel whilst maintaining an appropriate level of robustness.

5.3.7 The facilities will typically have a continual throughput of trainees on 12 week cycles. The nature of this shared accommodation gives rise to reduced accountability and care for the facilities as the occupants will be very task driven, operating with strict time constraints and under pressure to achieve goals. The need for hard-wearing and easy-to-clean finishes is essential as the occupants are also responsible for the cleaning of most habitable spaces.

Entrance, Lobbies, Cores and Corridors

5.3.8 As with any SLA design, the main entrance shall be attractive and inviting but able to accommodate groups both large and small passing through. The staircase should be sized accordingly, lifts are not normally provided in this type of building. A building regulations determination may be required - see Section 8.4

5.3.9 The construction of the entrance doorway should be robust but in context with the overall design philosophy. The locking strategy should be carefully thought through as any mechanism should allow easy and quick passage in or out. It is recommended this door is not locked during the day time.

5.3.10 A mirror or mirrors in the entrance foyer are important to allow the occupants the opportunity to check their dress before leaving the building. The quantity and location should be discussed and agreed with the Establishment.

5.3.11 The design of corridors shall be sensitive to the volume of traffic to various areas of the building allowing the occupants to move about the building with ease.

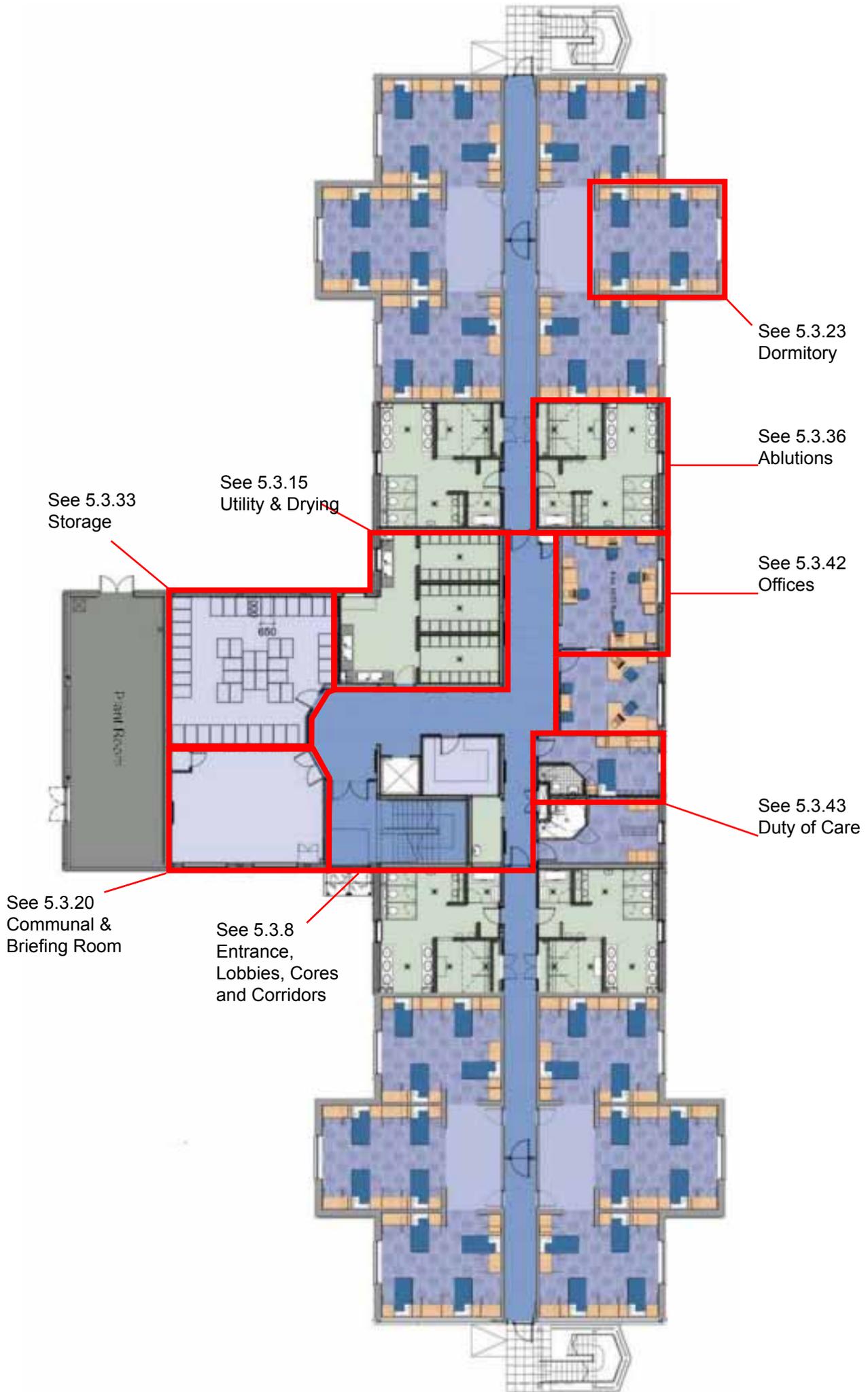
5.3.12 The corridor outside the offices must be designed to allow for personnel to await entry to the office without hindering the flow of others going about their general routine. It should be noted that this space can sometimes be used to form up a group of trainees for inspection or briefing purposes prior to them leaving the building.

5.3.13 These areas will be very heavily used as a result of the numbers of occupants and the intensity of their training regime. Finishes, fixtures and fittings shall be robust, easy to clean and maintain. The use of black vinyl or similar to skirtings and stair risers is recommended. Protection to vulnerable corners should be considered.

5.3.14 Corridor and lobby walls are ideal places for the display of unit orders, training posters and other instructional literature. The Project Team must liaise with the Establishment when considering the number and location of pin boards or other suitable medium.



TYPICAL 'X' TYPE PLAN



Utility and Snack Preparation

5.3.15 There is no requirement for a snack preparation in an X type building, because all meals are taken in the Junior ranks mess.

5.3.16 The Utility provides for washing, drying and ironing clothes and equipment, usually centrally located on each floor. Most Establishments with X type accommodation will have a central laundry and thus washing machines and tumble dryers are not normally provided however the Project Team must ensure at concept design stage they are clear on the requirement.

5.3.17 The layout of sinks and work surfaces should allow for ease of movement around the room whilst they are in use. The construction of these should be of stainless steel.

5.3.18 A secure energy efficient drying facility is required providing a space for each individual to dry their clothes and equipment securely usually within lockable cages and capable of drying them in a reasonable time. The Utility room shall have adequate ventilation to prevent the build-up of humidity and condensation; this is in addition to openable windows.

5.3.19 This should be considered a 'wet' area and as such the floor, wall and ceiling construction and finishes shall be specified accordingly. The design and positioning of cages etc shall be carefully considered to ensure that it is simple and easy to clean in, under and around them.

Communal, Briefing & Recreation Room

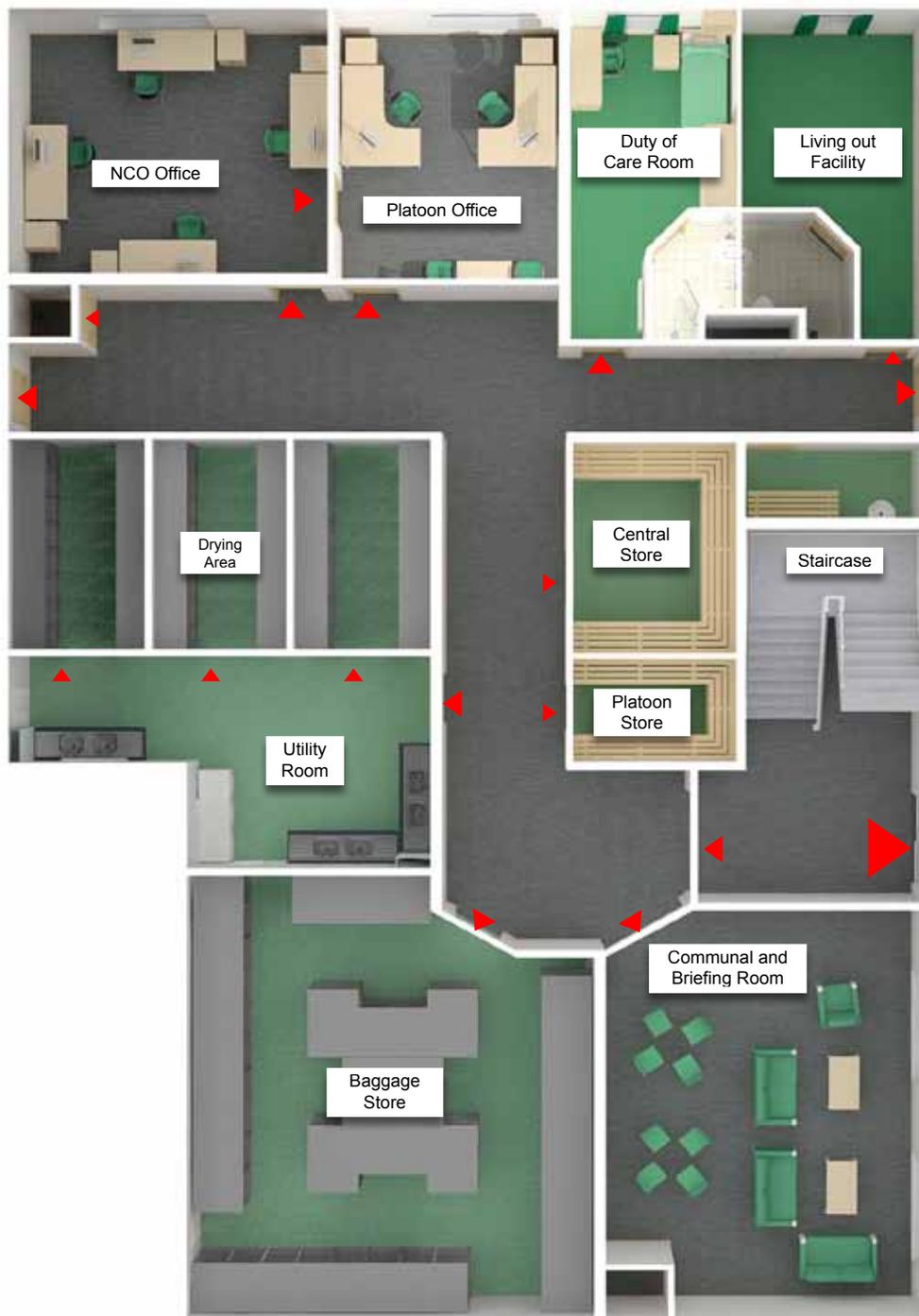
5.3.20 This is a large multi functional space designed for briefing, education and recreation. The room will be used for presentations and briefings utilising various forms of media. The room should be equipped with an appropriate level of power sockets, connectivity to the Establishments IT network, combined analogue and digital TV and FM radio and a telephone point.

5.3.21 An allowance should be made for the installation of a large flat format TV (provided by the Establishment) to be fitted to a wall and provided with adjacent power and TV aerial sockets. This will be used either as a presentation device through connection to a laptop or for recreation purposes. To facilitate this, an RS232 connector will be sited local to the TV pattress and wired via concealed containment to a paired RS232 connector at an agreed point for presentation purposes. Consideration should be given to a blank face plate with draw wire back to the central data patch panel to future proof for Satellite and Communications.

5.3.22 The furniture will generally be classroom style tables and chairs, however, this may be supplemented with more comfortable seating for recreational purposes. The provision of furniture can be by the Project Team or Establishment. This issue along with type and numbers of fittings to be installed shall be clarified during the early design phase. (It is recommended that the project team is at least involved in the choice of furniture, so that the interior design scheme is developed holistically).



COMMON AREAS



Hints & Tips

- Consider the need for clear sightlines from the offices to dormitories, entrance area and staircase.
- Careful consideration of the use of zoned lighting, colour and accent walls.
- Consider the opportunity for the use of the area outside the Offices for informal demonstration and briefings.
- Ensure all shared facilities and communication spaces are sized to allow for efficient use by all residents at the same time and under considerable time pressure.

Dormitory

5.3.23 Whilst the occupants of these dormitories are only in residence for a number of weeks it is still important that the same design ethos is utilised as with other SLA bedrooms.

5.3.24 The dormitory is principally a sleeping space but the occupants will also use it for limited amounts of personal study and relaxation. The layout of the furniture around each bed space should be such that the occupant can access all the storage with ease without damage to the furniture or surrounding walls. In this type of accommodation all cupboards shall be lockable with mechanisms which are simple, very robust and maintainable (usually padlocks purchased by the occupants).

5.3.25 The room shape, layout of the bed spaces and associated furniture should create a comfortable environment. Consideration should be given to breaking the room into zones which can prevent the space becoming austere and institutional. The use of zoned lighting, carpet tile finishes and accent wall colours will assist in this. The design must not, however, hinder supervision of the occupants or compromise on the need to provide an appropriate duty of care.

5.3.26 The position of all bedspaces shall be carefully considered to maximize the potential for semi-privacy, natural lighting and ventilation. Inevitably each bedspace will have varying opportunities and benefits in this regard. However, designs must avoid bedspaces being located in poorly lit and ventilated internal spaces or being particularly prone to disturbance by others.

5.3.27 Power sockets should be accessible from the bed. The bed head lighting shall be functional but designed and positioned so that one occupant does not cause nuisance or disturbance to others in the room.

5.3.28 The materials, fixtures and fittings have to be robust but of an appropriate quality and the finishes are easily cleaned.

5.3.29 An allowance shall be made within the room for a demonstration area. This area can be utilised, for example, for demonstrating ironing and kit preparation. It can also be used for footwear cleaning, away from the bed space area. As a result the demonstration area shall have a vinyl floor finish and be located close to the entrance doorway. There should be a number of socket outlets in close proximity. This is an ideal area for pin boards displaying instructional literature and mirrors for occupants to check their uniform prior to exiting the room.

5.3.30 Power supplies and circuitry must be adequate; it must be assumed that all or a significant number of the occupants will be ironing at one time. The space should be naturally ventilated through windows with restricted openings. Typically, a 12 man dorm would have a minimum of (3) 32A circuits. (A further 32A circuit should be considered for the demonstration area, depending on



its proposed use).

5.3.31 The entrance door locking strategy shall be agreed with the Establishment, but must ensure that nobody can lock themselves in or be locked in the room. The door furniture must allow for easy access and egress from the room, accounting for the fact that occupants will often be carrying a considerable amount of kit and be in a hurry.

5.3.32 There should be sufficient pin boards in the room and mirrors should be located adjacent to the exit from the room.

Storage

5.3.33 There are two elements to this requirement, storage of individuals belongings and unit (platoon) stores.

5.3.34 Over and above the storage provided in their living space, each individual is also provided with secure storage for suitcases or other personal baggage. These 'kit' cages, as detailed in the JSP scales, are provided in a single secure room per floor. The layout of the cages must make efficient use of space whilst allowing for reasonable circulation. The room should be adequately heated and ventilated to protect the belongings. The design and positioning of cages shall be carefully considered to ensure that it is simple and easy to clean in, under and around them.

5.3.35 In addition to the baggage stores there is also requirement for a platoon store for each floor. This store should be fitted out with adequate shelving.

Ablutions

5.3.36 Ablutions, bath and toilets are contained in a combined facility which will usually serve one dormitory.

5.3.37 It is very unlikely that this accommodation will have

TYPICAL 'X' TYPE DORMITORY



Hints & Tips

- *Consider the need for training staff to have sightlines from entrance area to all bed spaces.*
- *Consider breaking up the room into zones which can prevent the room becoming austere and institutional*
- *Consider the use of zoned lighting, colour and accent walls.*
- *Consider the number and location of socket outlets to individual bedspaces given the increasing use of personal electronic devices.*
- *Consider the potential for maximising privacy.*
- *Avoid layouts where bedspaces are located in poorly lit or poorly ventilated areas.*

mixed male and female facilities. To allow flexibility in the use of the facilities it is recommended that some ablutions should be designed as unisex facilities to allow blocks or floor levels to be used by either sex. The requirement for

and will require a toilet and shower cubicle. This could in some circumstances be a shared facility with the duty of care room.



unisex facilities should be agreed during the early design stages if not specifically defined in the project brief and output specifications.

5.3.38 The various facilities within the ablutions should be zoned to make efficient use of space but take account of the volume of people using them at one time and the considerable time constraints they will be operating within.

5.3.39 The walls and floors should be impervious to water penetration and will preferably be fully tiled. The design of these wet areas must prevent flooding and water damage to other areas of the building. Floor tiles finishes in wet areas must have the correct slip resistance as specified by MOD policy.

5.3.40 Humidity is a key factor in these areas and a combination of natural and mechanical ventilation is likely to be required to provide a suitable environment and to adequately resist the growth of mould and mildew. All materials, finishes and substrates shall be specified to resist damage by high humidity.

5.3.41 This is a highly serviced area and therefore ducts and access panels will inevitably be required for maintenance purposes. IPS (Integrated Panel System) systems, if used, must be robust and impervious to water and inaccessible to the occupants.

Offices

5.3.42 The offices should be centrally located on each floor and on the main circulation route enabling oversight of the movement of the recruits. Provision of office space will be sized and equipped in accordance with the relevant JSP scale with the appropriate level of finishes.

Duty of Care Room

5.3.43 One Duty of Care room shall be provided on each floor and conveniently accessed from the main circulation area and close proximity to the offices. If this is not possible then consideration should be given to providing a small office next door where the Duty officer can meet with a recruit if problems arise out of hours. These rooms shall be fitted out similarly to a Z scale bed sitting room with ensuite facilities, but with a reduced furniture provision and without an in-room store.

Staff Changing Rooms

5.3.44 A changing room may be necessary for training staff who live out. This should be fitted out with lockers

Equalities Act 2010

5.3.45 It is unlikely that there will be a requirement to accommodate disabled trainees. However, consideration will need to be given to the potential needs of disabled trainers and visitors. The Project Team must address this issue with the Establishment at concept stage to ensure the correct access strategy is put in place.

External spaces

5.3.46 The landscaping around the building should be attractive but simple, as recruits will have little recreation time. It is particularly important to consider how the building design and location relates to other key facilities used by the occupants. Access from the accommodation to Junior Ranks Dining facilities and training areas should be as straightforward and speedy as possible. Walkways leading to training areas and dining facilities should be of sufficient width to allow a number (with a typical minimum of 4) people to walk or march side by side.

5.3.47 Each building shall be provided with a forming up area which consists of an area of tarmac in which a body of personnel, numbers to be specified, can be formed up for inspection or instruction. It will also be used for general training purposes. There may be a requirement for vehicles to access these areas, the size of vehicle should be agreed in liaison with the Project Team and Establishment.

5.3.48 Bike racks are not usually provided for recruits, however consideration should be given to the requirements of training staff who may use cycles to move from their accommodation to their place of work.

5.3.49 The Project Team should establish if there is a particular requirement for other external facilities such as weapons cleaning sheds, CBRN suit or external wash down facilities including boot wash and smoking shelters.

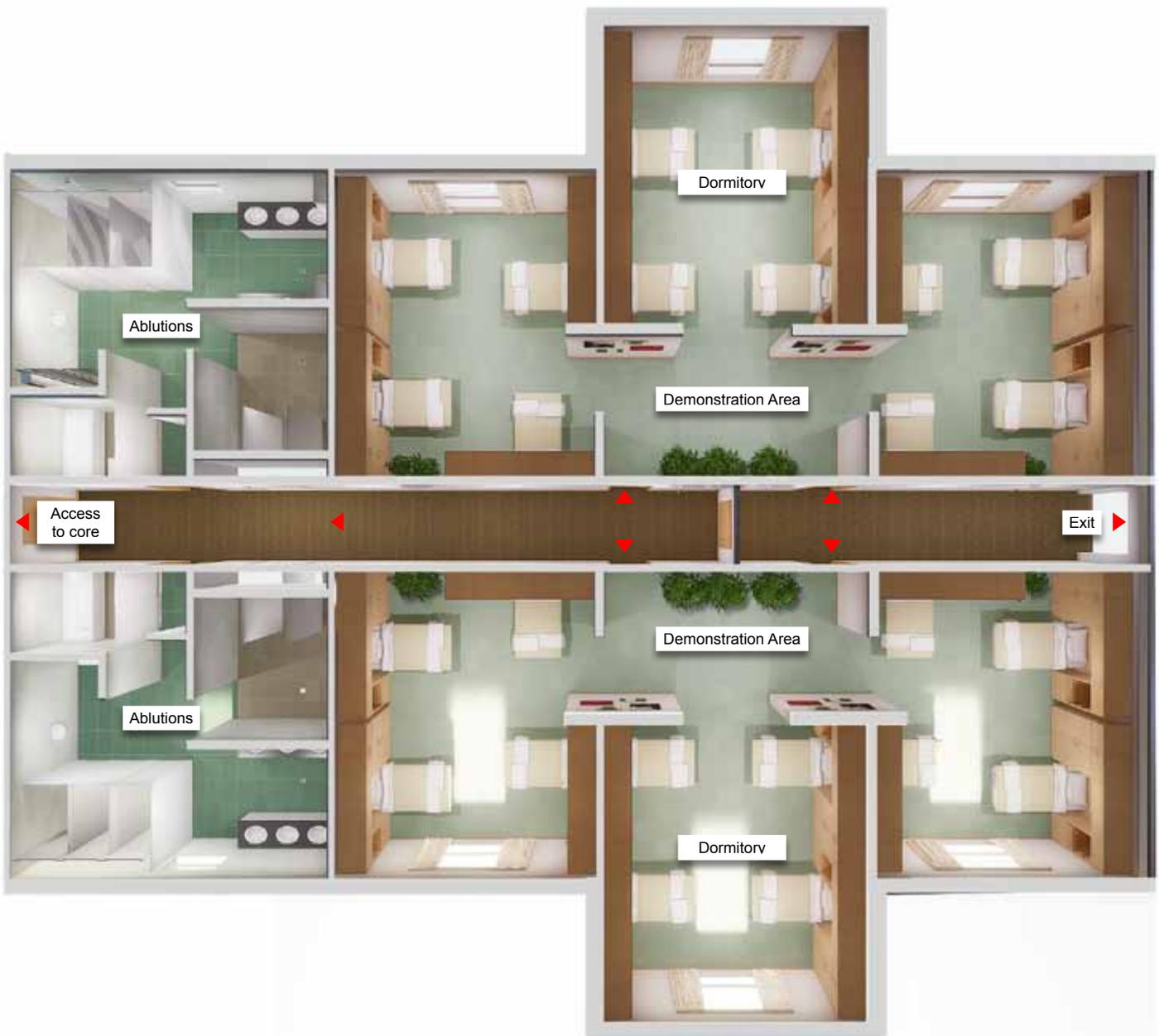
5.3.50 Bin and refuse storage will be in accordance with the Establishments waste management policy.

5.4 Y Type Accommodation

5.4.1 Y scale accommodation is generally used for Phase 2 personnel undertaking trade or role specific training and



TYPICAL 'X' TYPE WING



Hints & Tips

- Consider the need for training staff to have sightlines from entrance area to all bed spaces.
- Consider the use of floor finishes in the dormitory area to define zones, in the example illustrated carpet is indicated to the sleeping areas to provide a more homely environment.
- Consider the use of vinyl or similar hard wearing floor finish to the entrance zone, which is often used as a demonstration area and for cleaning duties, such as boot cleaning and blacking.
- Consider the requirements for the use of the demonstration area and the potential for training aids, for example, notice and white board.
- Consider the use of zoned lighting, colour and accent walls.
- Consider the number and location of socket outlets to individual bedspaces given the increasing use of personal electronic devices.
- Ensure all shared facilities and communication spaces are sized to allow for efficient use by all residents at the same time and under considerable time pressure, for example, morning ablutions.

typically provides dormitory bedrooms for 4 persons with individual study facilities.

5.4.2 The accommodation described here is generic and the principles are generally transferable between Services.

5.4.3 The design shall provide a building which delivers an environment for the Duty of Care, welfare and educational needs of the trainee whilst considering the operational needs of the training staff to supervise and manage the trainees in a safe and efficient manner. The Project Team must therefore engage with representatives of the Establishment and training organisation to ensure the design meets these requirements.

5.4.4 The design principles of a Y scale building are very similar to an X scale building. The following commentary deals with those areas which are particular to the Y scale building.

Snack Preparation Area and Common Room

5.4.5 There is requirement for a snack preparation area in a Y scale building, which is similar in concept to that provided in the Z scale hotel.

5.4.6 The combination of the snack preparation area and common room creates a large area enabling a more efficient and flexible use of space, for example, either as an open plan space or separated by a partial dividing wall. Fixtures and fittings in the snack prep area will need careful consideration to meet the appropriate JSP Scale.

5.4.7 Power and TV aerial sockets should be suitably sited to cater for the provision of a large wall mounted flat format TV (provided by the Establishment).

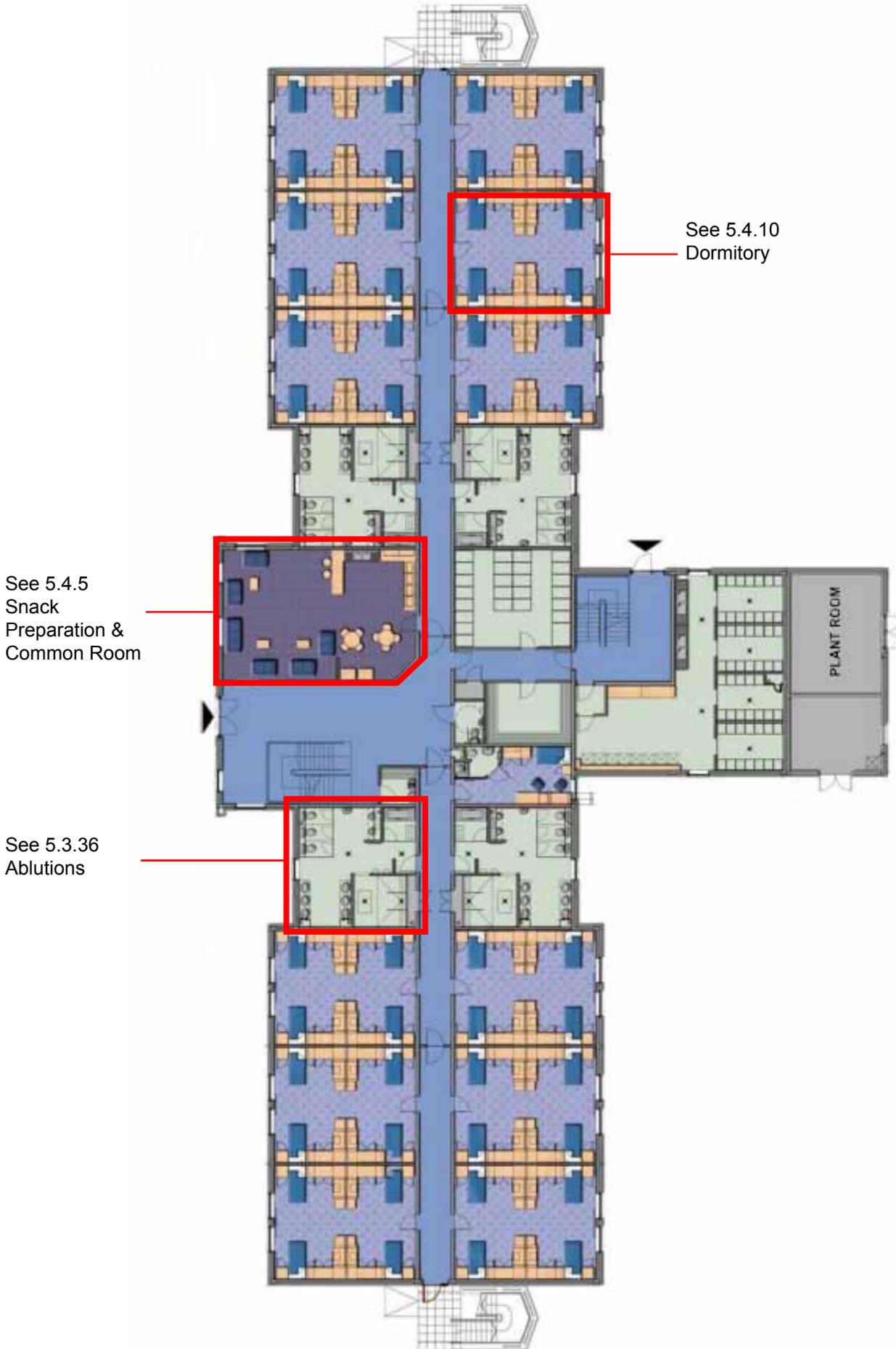
5.4.8 An appropriate mix of furniture including a dining table and chairs shall be provided. The level of provision and mix of furniture should be agreed with the Project Team.

5.4.9 Careful consideration is required to ensure an appropriate level of ventilation is provided to prevent cooking smells and heat build up invading the common room from the snack preparation area.

Dormitory

5.4.10 Whilst these 4 person dormitories are not the permanent residence of the occupant it is still important

TYPICAL 'Y' TYPE PLAN



'Y' TYPE COMMUNAL AREAS

Hints & Tips

- *Careful consideration of the use of zoned lighting, colour and accent walls.*
- *Ensure all shared facilities and communication spaces are sized to allow for efficient use by all residents at the same time and under time pressure.*
- *Consider a combined snack prep and common room and mix of furniture type*
- *Consider the need for lockable storage*



that the design ethos utilized is the same as with other SLA bedrooms.

5.4.11 The dormitory is principally a sleeping space but the occupants will also use it for personal study and relaxation. The layout of the furniture around each bed space should be such that the occupant can access the desk and storage with ease without damage to the furniture or surrounding walls. In this type of accommodation all cupboards shall be lockable with mechanisms which are simple, very robust and maintainable (usually padlocks are used and purchased by the occupants).

5.4.12 The room shape, layout of the bed spaces and associated furniture should create a comfortable environment. The use of zoned lighting, the use of carpet and accent wall colours will assist in this. The design must not, however, hinder supervision of the occupants or compromise on the need to provide appropriate duty of care.

5.4.13 The position of all bedspaces shall be carefully considered to maximize the potential for semi-privacy, natural lighting and ventilation. Inevitably each bedspace will have varying opportunities and benefits in this regard. However, designs must avoid bedspaces being located in poorly lit and ventilated internal spaces or being particularly prone to disturbance by others.

5.4.14 Power supplies and circuitry shall make due allowance for ironing in the rooms and computers used for study. There must be adequate power sockets appropriately distributed such that they are accessible from the bed and the study space. The bed head lighting shall be functional but designed and positioned so that one occupant does not cause nuisance or disturbance to others in the room.

5.4.15 The space should be naturally ventilated through windows with restricted openings.

5.4.16 The entrance door locking strategy shall be agreed with the Establishment, but must ensure that nobody can lock themselves in or be locked in the room.

The door furniture must allow for easy access and egress from the room, accounting for the fact that occupants will often be carrying a considerable amount of kit and be in a hurry.

5.4.17 There should be sufficient pin boards in the room and a full length mirror should be located adjacent to the exit from the room.

Offices

5.4.18 Offices are not usually provided in a Y scale building.

Equalities Act 2010

5.4.19 It is unlikely that there will a requirement to accommodate disabled trainees. However, consideration will need to be given to the potential needs of disabled training staff and visitors. The Project Team must address this issue with the Establishment at concept stage to ensure the correct access strategy is put in place.

External Spaces

5.4.20 Bike racks are not usually provided as recruits will not bring bicycles with them, however consideration should be given to the requirements of training staff who may use cycles to move from their accommodation to their place of work.

5.4.21 The Project Team should establish if there is a particular requirement for other external facilities such as weapons cleaning sheds, CBRN suit or external wash down facilities including boot washes and smoking shelters.

5.4.22 Bin and refuse storage will be in accordance with the Establishments waste management policy.



TYPICAL 'Y' TYPE DORMITORY



Hints & Tips

- *Consider the need for training staff to have sightlines from entrance area to all bed spaces.*
- *Careful consideration of the use of zoned lighting, colour and accent walls.*
- *Consider the number and location of socket outlets to individual bedspaces given the increasing use of personal electronic devices.*
- *Consider the potential for maximising privacy.*
- *Avoid layouts where bedspaces are located in poorly lit or poorly ventilated areas*



5.5 Senior Officers, Junior Officers & SNCOs SLA

General

5.5.1 Officer and SNCO SLA can be provided as separate living accommodation specific annexes or integral with a Mess facility which also includes dining and recreational functions. This Guide focuses purely on living accommodation areas.

5.5.2 Messes whether, existing or new build, are of high status in the architectural hierarchy of any Establishment. Existing buildings are often of historic interest and may well be listed. Any proposed development, whether refurbishment or new build must therefore involve appropriate design considerations.

5.5.3 A mess annex where practicable, shall be in close proximity to the existing Mess and must reflect the status and character of the Mess building and its surroundings. The main entrance and its approach should reflect this intent. It may be necessary to provide a secondary exit where the front entrance is not convenient for accessing other areas of the Establishment.

5.5.4 The design principles and specifications for the accommodation interiors are generally the same as for Junior Ranks Z type SLA, the key difference being the larger spatial and furniture allowances as identified in the relevant JSPs.

Entrances, Lobbies, Cores and Corridors

5.5.5 The entrance hall and foyer forms the 'gateway' to the accommodation and shall be well illuminated, attractive and inviting. The choice of materials, colours and finishes must reflect this approach but acknowledge the particularly heavy usage these areas receive. The use of accent colours is to be encouraged to provide visual interest and identity.

5.5.6 The stair is often the focal point to a lobby and core and therefore the design and construction of the staircase, handrails and balustrades must reflect this. The stair width should be sufficient for 2 people to pass with ease, allowing for each carrying a backpack or shoulder kit bag.

5.5.7 There is also opportunity to display Unit memorabilia in this area, and this requirement should be considered at an early stage in the design process in order for appropriate mounting arrangements and lighting schemes to be developed.

5.5.8 When planning the accommodation, careful consideration of the design and layout of the circulation and ancillary spaces is required to avoid long and featureless corridors that create an institutional effect.

5.5.9 Sufficient directional signs will be required in lobbies, etc to clearly indicate which bedrooms are in which direction. Internal doors will also need name and or number plates, identifying a room by its use or number, or allowing individuals to insert their name plate on sleeping quarter doors. The room numbering convention should be developed at an early stage with the Establishment.

5.5.10 All other design considerations for the entrance and core areas are similar to the JR Z type accommodation

Utility and Snack Preparation

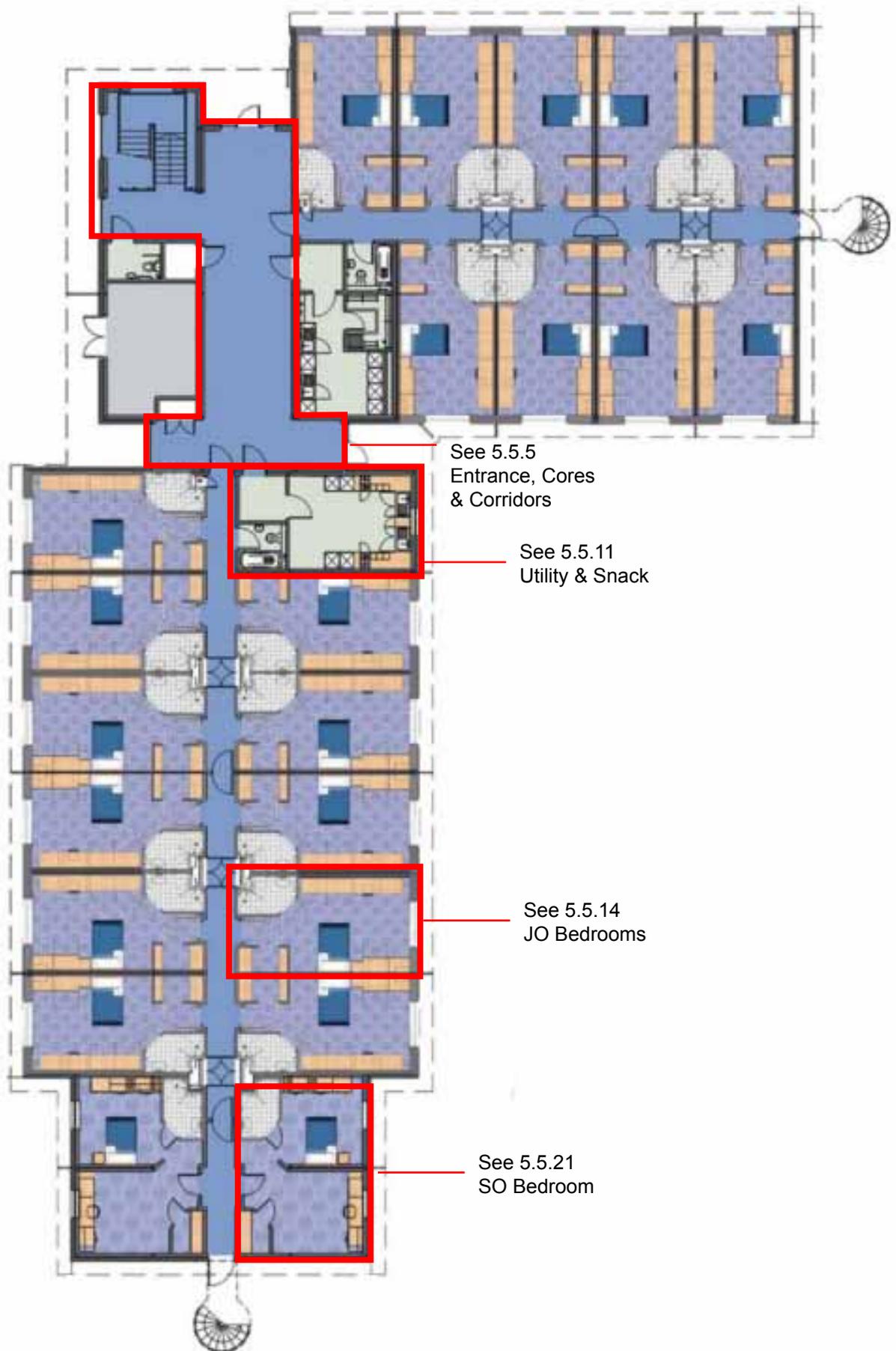
5.5.11 There is no requirement for a common room within the SLA as both Senior, Junior Officers and SNCOs are expected to socialize and dine in the Mess facilities. There is however a requirement to provide a utility and snack preparation area within the accommodation.

5.5.12 The design of the utility and snack preparation will largely be dictated by the numbers of occupants they serve. In a small building a combined facility on each floor will suffice similar to that of the JR Z flats. Where there is a large number of occupants on a floor, separate utility and snack preparation areas may be more appropriate, and should be located for easy access by the occupants. The design principles for these rooms are the same as JR Z Hotel.

5.5.13 Washing machines and tumble dryers, suitable for heavy duty use, shall be provided to a ratio identified in the appropriate Scales. The snack preparation area will be equipped with commercial grade microwave ovens (designed for heavy duty use) and refrigerators and hob. Quantities to the appropriate scale.



TYPICAL SENIOR OFFICER & JUNIOR OFFICER



See 5.5.5
Entrance, Cores
& Corridors

See 5.5.11
Utility & Snack

See 5.5.14
JO Bedrooms

See 5.5.21
SO Bedroom

Bedrooms

5.5.14 In Messes, these rooms should be separated from facilities which generate noise, i.e. Dining area, bars and kitchens. Planning of ventilation systems and other noise generating plant associated with back of house facilities is critical to prevent disturbance. In addition to this the detailing and specification of en-suite extracts requires careful consideration to avoid nuisance through noise transference.

5.5.15 Ventilation systems should be designed such that ductwork is not visible in habitable spaces. The installation of boxed ductwork running across ceilings or down walls in such spaces is unacceptably visually intrusive.

5.5.16 JSP 315 Scales 30 and 35 identify the particular accommodation requirements for Officers and SNCOs, the Junior Officers and SNCOs having the same entitlements in bed sitting rooms.

5.5.17 Junior Officers accommodation is provided for those officers below the rank of Lieutenant Commander, Major and Squadron Leader, and in training Establishments for all officers, irrespective of rank, on courses of short duration.

5.5.18 The design principles for Officers' and SNCOs' accommodation shall generally follow that of the Junior Ranks Z bed-room and en-suite but acknowledging the larger spatial and furniture entitlement.

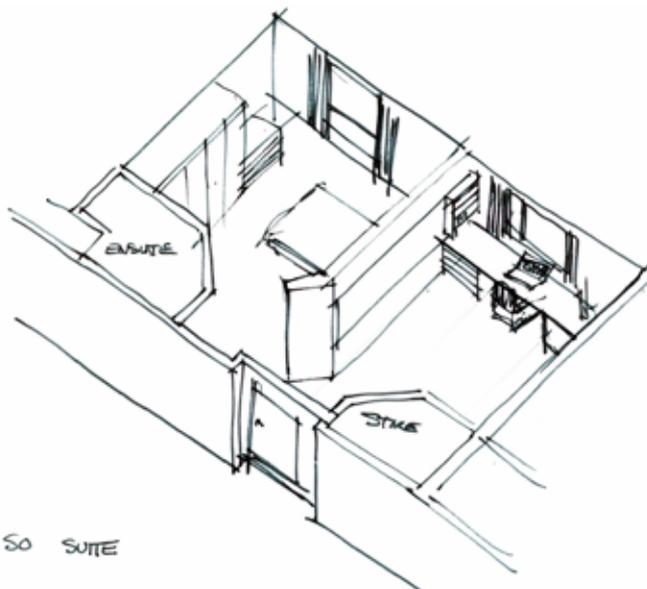
5.5.19 It is important that the relationship of the desk, bed, power sockets, telephone and TV points are carefully considered to ensure that the occupant has a reasonable level of flexibility in locating furniture, and in particular the ability to view the TV from the alternative bed locations.

5.5.20 In designing the Senior Officers rooms it is important to properly address the requirement for two spaces, a sitting room and a bedroom.

5.5.21 If designing the sitting room and bedroom as two distinct rooms there is a need to create a lobby off the corridor from which the two rooms can be accessed. This approach can result in two small and claustrophobic rooms and a lobby that offers no real functional benefit to the user. As an alternative consideration can be given to an open plan format which will address the issue of means of escape and make more efficient and beneficial use of space. Even when using this approach it is important to provide a level of separation between the sleeping area and bedroom by careful use of screening and to provide the bedroom area with privacy from the entrance.

Ceremonial Units

5.5.22 A special case is to be made for additional furniture for ceremonial units and others having specialist uniform storage requirements.



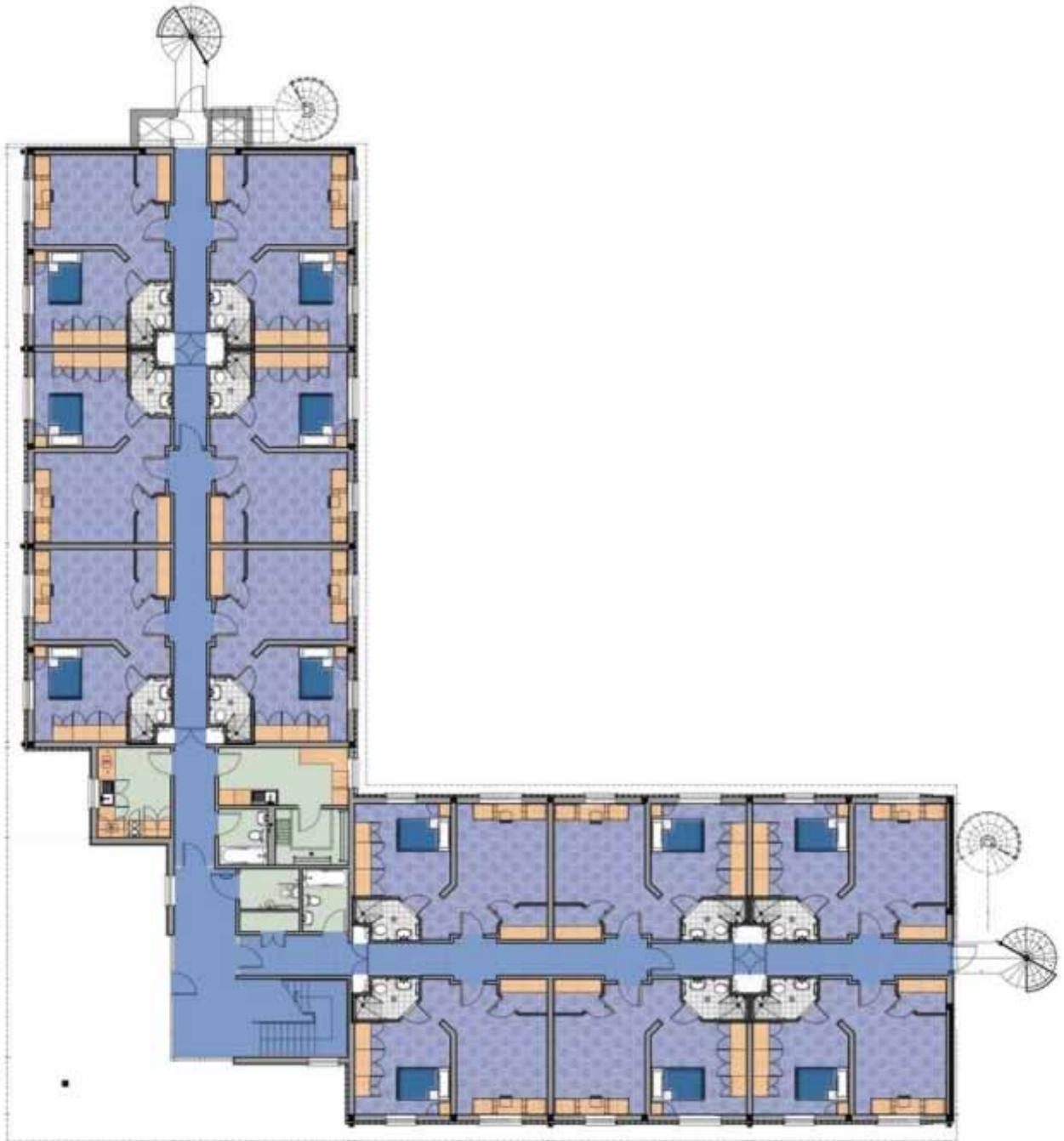
TYPICAL JUNIOR OFFICER and SNCO BEDSIT

Hints & Tips

- *Careful consideration of the use of colour and accent walls in a small room.*
- *Consider adding a socket outlet in the storeroom.*
- *Consider providing moveable shelving, including a deep shelf with a hanging rail underneath to increase the clothes storage capacity.*
- *Location of socket outlets and tv points should be carefully planned so the tv can be seen from the bed position*
- *Adequate socket outlets should be provided at the desk location*
- *The routing of ensuite extract ventilation pipework should be carefully considered to avoid unsightly features in rooms.*
- *See also JRZ room for additional information*



TYPICAL SENIOR OFFICER LAYOUT



TYPICAL SENIOR OFFICER'S ROOM

Hints & Tips

- *The individual components of the Senior Officer's room are small spaces so consider opportunities to create visual interest and flexibility which will allow the space to be personalised.*
- *The illustrated example is designed in a 'studio' open plan format thus maximising the use of space.*
- *In the example the bedroom is separated from the sitting room by a short partition. The partition is 'dog legged' at the end to provide screening to the bedroom area from the doorway.*
- *Avoid the use of a short 'hallway' immediately inside the room. This can result in the usable element of the room feeling small and claustrophobic, effectively it is a waste of space.*
- *Careful consideration of the use of colour and accent walls in a small room.*
- *See also JRZ room for additional information*



5.6 Disabled Provision

5.6.1 Each site will have different requirements and it is therefore important to establish these at the outset of the project. On commencement of a project, the team should aim to determine the use of the site, and the likely requirement for legislatively compliant disabled accommodation with the relevant stakeholders. They should establish if there is a requirement to house injured or physically disabled Service personnel and the likely numbers to be accommodated. This should therefore be checked against the number of existing available compliant rooms on the site or available at the Establishment.

5.6.2 Within JSP 315 there is no specific guidance on the provision and design of disabled accommodation. The furniture and services provision should therefore be considered when developing the design.

5.6.3 There is a range of legislative, regulatory and guidance documents which can assist the designer in respect of designing for disabled people and in seeking to assist building operators in addressing their liabilities.

5.6.4 Where necessary the Project Team should consider engaging an Access consultant to advise on delivering an appropriate solution and consult with MoD Building Standards team.

5.6.5 As a minimum the accommodation shall be designed to allow for access and egress by disabled visitors who will generally be accompanied by a resident or under escort; this will include provision of a disabled toilet.

5.6.6 Where there is a requirement for disabled bedrooms the design should meet the general mobility needs of reasonably fit resident wheelchair users and those with ambulant disabilities living independently. The need for disabled facilities shall be considered for all relevant areas of the building, including the bedroom, common room, kitchen and utility facilities and all access and egress routes.

5.6.7 It is important that any approach provides spaces which are “inclusive” such that they can be used by disabled and able bodied personnel alike.

5.6.8 At the outset the Project Team must establish whether the design is to cater for a specific occupant or anticipating some future requirement.

5.6.9 Should a particular occupant be identified then their Occupational Therapists will be able to advise the Project Team on the appropriate measures to be taken.

5.6.10 Generally this will not be the case and the Team will have a number of options to consider, for example:

a. No Provision. The project meets the Equality Act and Part M of the Building Regulations for areas of supervised access for visitors (in the case of Messes) with no provision of Accessible or Inclusive Living Rooms. This option is expected to be by exception, such as X-Type SLA for training Establishments or new build Z-Type SLA blocks where sufficient disabled accommodation already exists at the Establishment.

b. Minimum Provision. Where there may be a current or future need, a minimum of two “Accessible Rooms” are provided with the access and circulation requirements to Part M. These rooms will be dimensionally compliant with the en-suite fitted out to Part M. Unless there is a requirement to accommodate a specific occupant it is recommended that rooms and spaces, in particular the bedsit should be dimensionally compliant with a basic provision for disability.

c. Enhanced Provision. Provision of as many “Accessible Rooms” as determined by the stakeholders. The design should be such that it facilitates a cost effective retrofit to accommodate an occupant with a specific disability through the provision of appropriate builders work and infrastructure. The building should be fitted with the containment wiring to enable powered doors for access. Living areas, food preparation areas and utility areas should be accessible to reasonably fit wheelchair users and include the potential to retrofit soft infrastructure (such as grab rails, window opening devices), to allow for the generic mobility needs of reasonably fit wheelchair users.

d. Inclusive Living Standard. The number of bedrooms to be determined by the stakeholders, but bedrooms and access to public areas fully fitted out with all necessary equipment.



6.0 Building Services

6.0 Building Services

6.1 Introduction

6.1.1 Whilst SLA projects may include a large number of accommodation units, the level of building services required are essentially of a domestic scale. The users of SLA are transient, staying in some cases for only a few weeks and in others for several years. The occupation will also change, as personnel or units move on. In addition long stay occupants can be away from their accommodation for weeks and months at a time due to deployment or training.

6.1.2 All facilities must provide a built environment at an appropriate level that is conducive to the function of the facility.

6.1.3 The design shall provide the most cost effective energy efficient installations. All services in all buildings are to be metered separately so that records of the energy efficiency and cost-in-use of the SLA can be compiled. Where appropriate consideration should be given to sub-metering in the building.

6.1.4 All installations shall be designed to provide for the ease and cost effectiveness of their maintenance, all in accordance with relevant legislation and industry best practice.

6.1.5 The Project Team shall consult the Establishment to ensure that designs and installations will be compatible with existing Establishment systems and infrastructure including Building Management Systems (BMS).

6.1.6 The Project Team is to consider the cost effectiveness of incorporating energy saving measures such as:

- Improved insulation.
- Time-related or movement-activated light switches.
- Energy efficient mechanical and electrical installations.
- Renewable energy systems for space-heating, hot water or electricity to SLA facilities.
- Upgrades to the existing site BMS, software or provision of new hardware.

6.1.7 In addition to connecting and facilitating a fully operational BMS front end (where one exists,) the Contractor will ensure that each plant room includes a warning beacon activated by the BMS to indicate when the system is in fault.

6.1.8 All above-ground foul drainage shall be run inside the building envelope.

6.1.9 All designs, particularly those for the water supply, shall consider the implications of accommodation being left unoccupied for extended periods, for example: at training Establishments, when operational units are on deployment, exercise or due to individual or block leave.

6.1.10 Mechanical and Electrical services and space requirements are to comply with current relevant Specifications and Standards, whilst also meeting the requirements of JSP Scales and industry best practice.

6.2 Mechanical Services

6.2.1 Typically, boilers will be high efficiency, gas fired, Low NOx sized to meet the peak demand. The selection of boiler modules will be such that in the event of an individual boiler failure the system will be able to support peak demand from the remaining boilers. Heating pumps will be selected for duty and standby with auto change over controls. The heating and hot water systems should include timed, optimised and compensated control systems. Timers should be programmable and have at least three on and off periods per day and account for changes in daylight saving. The designers should also consider hot water prioritisation as a means to assist with meeting calorifier supply temperature criteria.

6.2.2 Temperature levels required to be met within individual rooms, are given in the Chartered Institute of Building Services (CIBSE) Guides. SLA is essentially of a domestic scale and space heating will generally be provided by a low temperature hot water system, feeding radiators fitted with individual thermostatic valves. This will typically be 21°C for living spaces and 19°C for circulation areas all based on a maximum external temperature of -4°C, although a greater range of external temperatures may need to be applied on a regional basis or where accommodation is located overseas.

6.2.3 Zoning of SLA blocks is required to ensure energy efficient operation and to allow flexibility in the servicing of the accommodation. If a unit or sub unit or lower organisation are absent from their flats for a period, the zoning can be used to reduce the heating to a background level within the vacant rooms, while still providing normal heating to adjacent areas. Thermostatic radiator controls are to be provided to each individual radiator (excluding relief circuits) to provide automatic regulation against local variations in temperature.

6.2.4 The domestic hot water secondary return pump will typically be a single pump plus the provision of a spare. The secondary return pipework is to be optimally sized according to the heat losses from the associated pipework to maintain not less than 50°C throughout the system. To avoid short circuiting, sub-legs of the secondary return will be fitted with balancing valves to allow commissioning.

6.3 Plant room

6.3.1 Where practical plant rooms shall be located on the ground floor either remote from or integral to the building. Plant rooms must have secure, external doors, allowing access for authorised personnel only. Doors should be louvred and include an insect guard to allow natural ventilation and be sized to allow installation and replacement of the plant within. The plant room must be serviced by paths or roads which are sufficient to allow maintenance vehicles to gain access.

6.3.2 Reference should be made to CIBSE Guide M and DMG-08 for space requirements for plant access, operations and maintenance.

6.4 Ventilation

6.4.1 Ventilation within bed sitting rooms is via openable windows and the natural flow of air. Consideration may be given to the use of additional trickle mode options to help control maximum summertime temperatures. Any solution would include mitigation of noise disturbance.

6.4.2 Within the utility room, ablutions, toilet and ensuite shower areas, mechanical ventilation will be required, via supply duct and extract fans.

6.4.3 The operation of the extract system must be linked to the room's light switch. Consideration may be given to humidity hold-on override where appropriate. The selection and control of this equipment is important in order to prevent disturbance to neighbouring occupants through noise. It is also essential these devices cannot be isolated by the residents as the failure of these devices to operate can lead to damage to finishes and fabric of the building.

6.4.4 The Snack Preparation area will require local extraction of cooking smells above the hob, where provided. This should be linked to the operation of the electric hob, with an overrun to ensure adequate extraction.

6.4.5 The heat source for drying clothes within the drying room needs to operate in tandem with the ventilation system. Operation of the ventilation system should not be linked to occupation of the drying room by personnel, but should run at all times clothes are being dried. Some form of space heating, independent of the ventilation system, may be required to provide background heat, in the event of the building remaining unoccupied over the winter.

6.5 Hot and Cold Water Services

6.5.1 The demand for hot water in SLA at peak times can be considerable. The Project Team should give careful consideration to the quantity of water stored and the ability of the system to refresh the supply of hot water to meet these peak demands. As a general rule Z type buildings should be not less than 35l per person hot water storage whilst X type buildings not less than 45l per person. In each case the hot water bundle should be sized for a minimum static recovery through a temperature change of 55°C of not less than 2 hours. In all cases the system design is to comply with the L8 Approved Code of Practice and particular attention is drawn to the need for hot water

supply of at least 60°C at all times including peak demand.

6.5.2 All domestic hot and cold water pipework is to be sized in accordance with BS 6700 including due allowance for 'high peak demand'.

6.5.3 All domestic hot and cold water outlets shall be fitted with suitably rated flow restrictors in accordance with CIBSE guidelines.

6.5.4 The storage capacity and recovery rate of the calorifier should be selected to meet the normal daily fluctuations in hot water use without any drop in the supply temperature.

6.5.5 Where more than one calorifier is used, they should be connected in parallel and if temperature is used as a means of control, each should deliver water at a temperature of at least 60°C.

6.5.6 Following the commissioning of a new hot water system, the water temperature should be measured continuously at the bottom and the outlet of the calorifier over a typical day. If the storage vessel is big enough to deal with the demand, the outlet temperature will be constant throughout the day. If the calorifier is too small, the outlet temperature will fall during use and remedial action may be required, particularly if temperature is used as a control method. If the system changes from the original specification, this procedure will need to be repeated.

6.5.7 In a hot water system, cold water enters at the base of the calorifier with hot water being drawn off from the top for distribution to user points throughout the building. A control thermostat to regulate the supply of heat to the calorifier should be fitted at a height just above the calorifier bundle and adjusted so that the outlet water temperature is constant. The water temperature at the base of the calorifier (ie under the heating coil) will usually be much cooler than the water temperature at the top. Arrangements should therefore be made to heat the whole water content of the calorifier, including that at the base, to a temperature of 60°C for one continuous hour each day.

6.5.8 However, it is noted that calorifier manufacturer's recommend the location of the control sensor at a lower location within the calorifier. The lower position has been shown to provide a more responsive solution and should be used. However, to allow data logging of the calorifier water temperature BMS temperature sensors should be located on each outlet and secondary return leg. The temperature at the outlet should not exceed 62°C. Warning signage will be required for all hot water outlets which are not fitted with anti-scald blending valves.

6.5.9 Calorifiers should be fully insulated in accordance with the manufacturers and regulatory requirements, including access hatches and bundle housings which are expected to have a hot surface temperature during normal use.

6.5.10 Cold water should not gain more than 2°C above the point of entry and should not exceed 20°C following a period of 2 minutes of full flow. Therefore, it is important that the designer considers natural ventilation of service risers and voids within their design, ensure that appropriate insulation is properly applied and to avoid dead-legs where

ever practicable.

6.5.11 Where expansion vessels are used for Domestic Hot & Cold Water Systems they will be of the Flow Through type and will typically be fitted on the cold side of the calorifier. The designer is to include pressure gauge and failure alarm connected back to the BMS.

6.5.12 The Project Team should ensure Table X copper pipework is specified for all domestic hot and cold water services.

6.5.13 The hot and cold water system shall be served by a triple booster pump set. Each pump is to be capable of 50% of the peak demand. Consideration should also be given to an additional half sized pump to avoid over pressure and inefficient pump operation during periods of low usage.

6.5.14 Hot and cold water supplies are required to the ablutions, toilet area, utility room, cleaners' room and single bedrooms. Drinking water is required to all SLA buildings, to the snack preparation sink, utility room, and to all wash hand basins in the ablution areas and single bedsitting rooms. As a general note, cold water storage for a Z type should be not less than 70l per person actual capacity whilst an X type should be not less than 100l per person actual capacity.

6.5.15 Tanks will be equipped with internal and external access ladders, hand rails, delayed action high flow valve, anti-siphon outlet and will be arranged to avoid the build up of silt or promote dead-legs.

6.6 Water Quality

6.6.1 The Project Team should be conversant with the various roles and responsibilities set out in the L8 Approved Code of Practice, JSP375 Vol 2 Leaflet 19 and DIO Practitioner Guide 07/10.

6.6.2 Consideration should be given to future proofing the plant room to allow space for chemical water treatment. In the event that satisfactory Legionella control cannot be effected through a temperature regime then a water treatment system should be considered.

6.6.3 Pre-flush or self purge type showers have been seen to provide control of legionella at the shower head and should be considered wherever practicable.

6.7 Water Conservation

6.7.1 The Project Team shall use appropriate means of reducing the consumption of water, particularly potable water. Potential water-conservation measures include low flush WCs, percussion taps, low flow showers, water harvesting, grey water systems and waterless urinals. These measures should be comparable with the quality (including hardness and softness) of the water supply.

6.7.2 Large boosted water systems can often lead to excessive flow when individual outlets are operated. Flow restrictors are to be fitted to all outlets to suit CIBSE guidelines for the various outlet types. To allow system

performance checking a commissioning station will be fitted down stream of the flow side of the booster pump set.

6.7.3 Leakage from WC cisterns, taps and showers can often go unnoticed and unreported for long periods of time. The designer shall provide dynamic leak detection which monitors water consumption between 0100 & 0400. If water consumption exceeds a set parameter an alarm will be triggered within the BMS to instigate a building check.

6.8 Electrical Services

6.8.1 Power

6.8.2 The numbers of electrical sockets required within SLA rooms are detailed within the JSP315 scales. They are to be generally double, 13A flush switched socket outlets, in white plastic.

6.8.3 The design of power circuits should ensure that nuisance tripping is kept to the minimum. Consider the use of the space and whether there is a potential to overload circuits by the quantity of appliances being used in any one location. Particular areas of concern are Z type bedrooms and X & Y type multi-man bedrooms.

6.9 Electrical Appliances

6.9.1 All electrical items, including personal items, are required to be registered and tested in accordance with the Electricity at Work Regulations 1989, to which DEO (W) Technical Bulletin 95/03 refers.

6.10 Lighting

6.10.1 The lighting levels required are indicated within the JSP315 scales, and are given as the average maintained illuminance at working plane or floor level. The choice of light fittings should be sympathetic to the room use, providing comfortable levels of light within bedrooms, and avoiding 'institutional' strip lighting.

6.10.2 Consideration should be given to wall-mounted lights, recessed or circular fittings, particularly within corridors, to avoid long lines of fluorescent strip lighting. Dimmable LED panel lighting may be considered as an energy efficient, long life solution.

6.10.3 Where practical, energy efficient light fittings should be specified in all areas. Consideration shall be given to preventing energy wastage through the use of motion detection and timing devices. In rooms where this is not practical switching of individual light fittings should be considered to allow occupants to dim the lighting levels.

6.10.4 Luminaires within wet areas shall be to the appropriate index of protection (IP) rating.

6.10.5 Avoid the use of emergency light fittings with bright indicators in bedsitting rooms

6.11 Communication and Alarm Systems

6.11.1 Provide an electric fire alarm system in compliance

with BS 5839 Part 1. The audibility level in sleeping areas is to be 75 dB(A) at the bedhead with all doors shut. Provide an automatic fire detection system connected to the fire alarm system, to comply with BS 5839 Part 1. The detection system is to be an L3 standard to cover all escape routes and it is to be extended to all rooms used for sleeping purposes. To reduce the risk of false alarms due to smoking, ionisation chamber smoke detectors should be installed.

6.11.2 The siting and sensitivity of the fire detection units within SLA should be carefully considered to avoid nuisance false alarms.

6.12 Telephones, TV and Multimedia

6.12.1 Whilst JSP 315 Scale 1, serial 9 sets out provision of TV and FM reception systems. This may well be inadequate due to the constant advances in service provision and technology. The Project Team therefore need to consider carefully any requirement for, and delivery of telephone, TV and Multi-media services to bedrooms and common rooms and the ability to future proof the building against further changes. The requirement and solution shall be discussed and agreed with the Establishment.

6.12.2 MOD Telephone connections should be provided within the entrance areas of JRSLA buildings. Where a Duty Room is required, provision of a telephone point within the bedroom and office of the duty officer should be provided.

6.12.3 In addition, ducts and cabling are to be provided to allow for the later addition of a communal satellite dish to each accommodation block, to avoid the ad hoc installation of individual dishes.

6.12.4 It is important for early engagement with the local Telecommunications Service Provider when considering bringing onto the network new builds or previously unconnected refurbished buildings as this will identify early-on any capacity problems.

6.12.5 If the building has a lift then there is a need for an external line to the lift car for emergency use. This is usually fitted with an autodialer connecting to a 24 hour manned helpline or guardroom location. This telephone should be sited such that it's use does not cause nuisance to other building occupants.

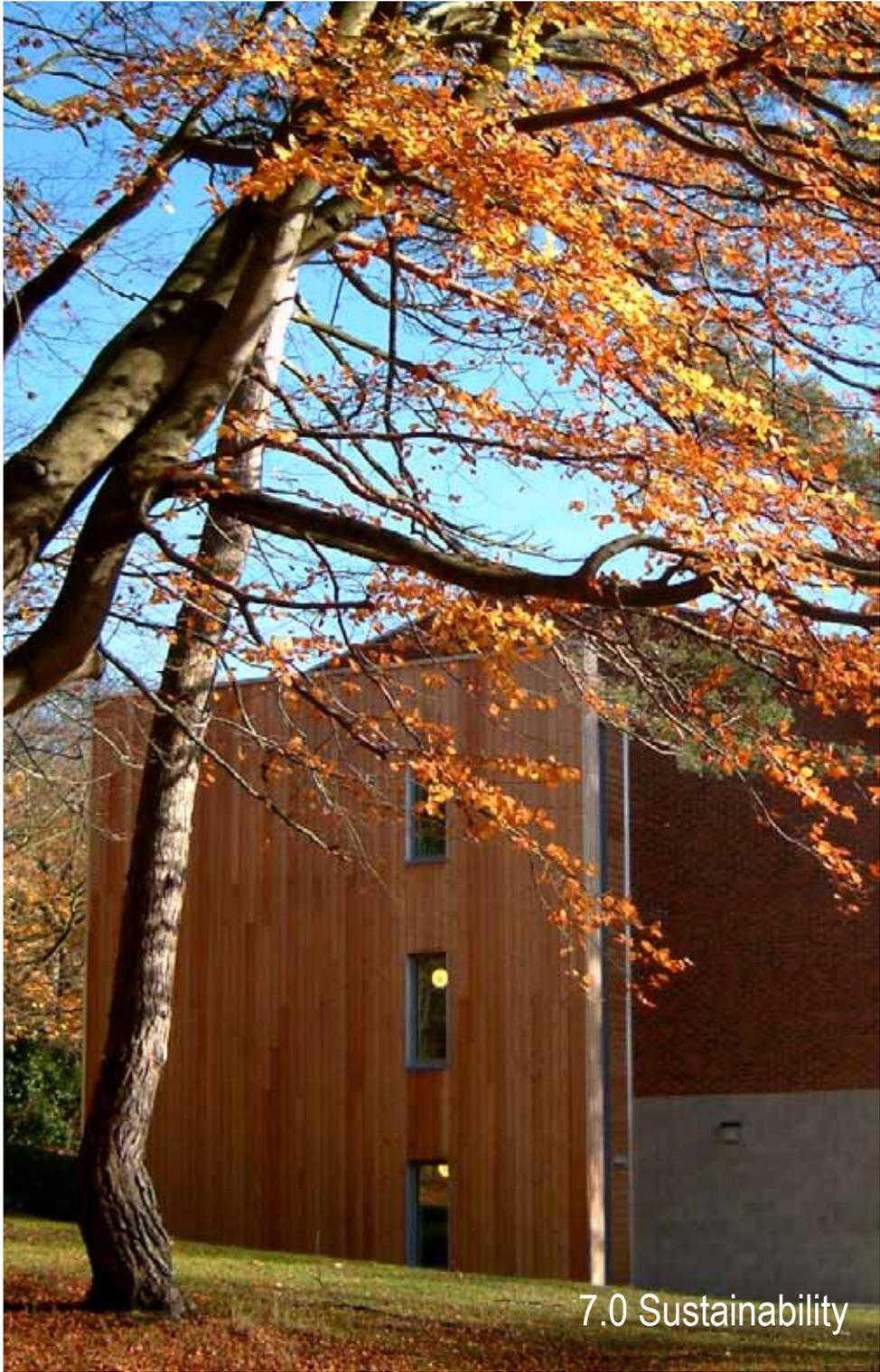
6.13 Emergency Supplies

6.13.1 Emergency lighting is required to stairways and entrance corridors. These areas are required to have a separate electrical installation from the rest of the building (MOD Fire Standard E3). The minimum level of illuminance on escape routes is not to be less than 1 lux.

6.14 Lightning Protection

6.14.1 The provision of lightning conductors is dependent on a risk analysis, carried out in accordance with relevant standards.





7.0 Sustainability

7.0 Sustainability

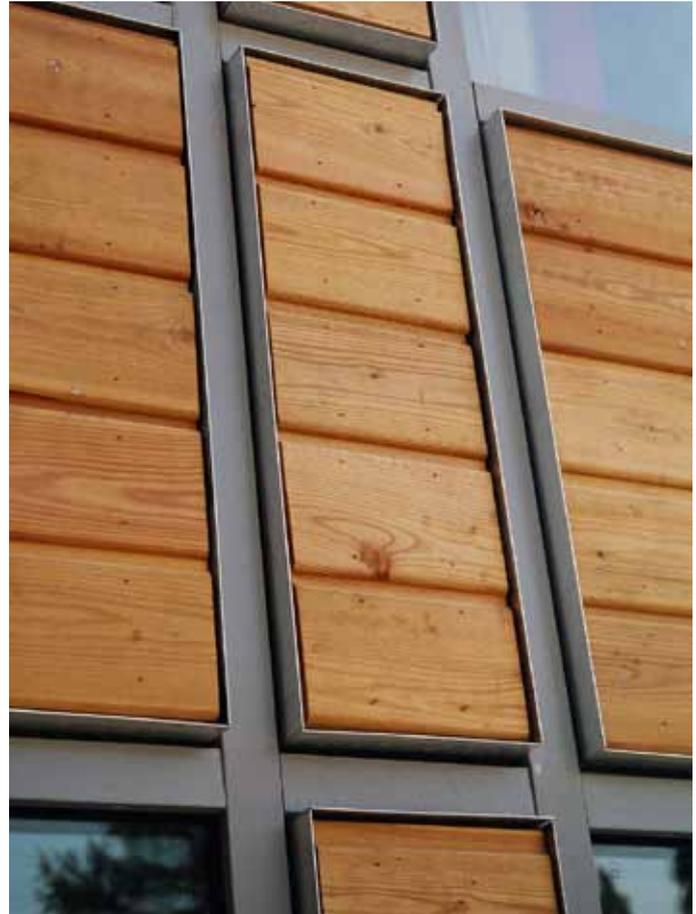
7.1 Sustainability

7.1.1 Government policy and legislation requires that sustainable development is at the heart of all construction projects across the public sector. Central to this are the clear business benefits of through-life financial savings, resilience to changing climates, an improved quality of life for defence personnel, and achieving long-term value for money through the construction, maintenance and operation of defence facilities.

7.1.2 Projects shall comply with all relevant environmental legislation and MOD policy to promote these objectives and minimise adverse environmental effects. Detailed SD guidance can be found in the Practitioner Guide 01/11 (Sustainable Development Minimum Standards: Core Works), but the broad objectives to embed in SLA design and construction are to:

- Use tools such as Sustainability Appraisal, Environmental Impact Assessment, and the Defence-Related Environmental Assessment Methodology (DREAM)) to identify SD risks and opportunities from an early stage;
- Minimise energy consumption during construction, the embodied energy of materials used, and maximise energy efficiency in the design (via layout and technology);
- Minimise waste during construction, and use recycled and recyclable materials;
- Minimise water use during construction and design in water efficient technology;
- Minimise environmental impacts of materials and components, e.g. by
 - Using components that comply with Government Buying Standards (minimum environmental performance standards);
 - Only using timber from verifiable sustainable and legal sources;
- Avoiding use of materials that are potentially hazardous to health or the environment.

7.1.3 Project teams must be able to demonstrate how they are meeting these objectives, by using good quality design and construction to help MOD meet current and anticipated targets. The environmental performance of the design and construction phase of each project shall be assessed using DREAM, and buildings are to achieve the target rating of “excellent” for new build projects and refurbishments (PI 06/11 refers).



“ Government policy and legislation requires that sustainable development is at the heart of all construction projects across the public sector ”

8.0 Statutory Compliance And MOD Policy

8.1 General

8.1.1 The design shall comply with all Statutory Instruments, Regulations and bylaws, MOD Policy, Health & Safety, Fire and Environmental Legislation, both current and those introduced during the design period. In respect of the latter the Design Team should seek guidance from the Project Team before implementation.

8.1.2 Where European (EN) and British Standards (BS) are relevant, these are to be taken as the MOD's minimum requirement and 'kite marked' (or EC equivalent) products are preferred wherever they are available. Where commercial alternatives are specified or considered, they shall meet or better these standards.

8.1.3 In overseas locations and USAF sites other guidance and legislation may also apply.

8.2 Health and Safety

8.2.1 It is MOD policy that all works be planned and executed in compliance with the appropriate Health and Safety Regulations. All aspects of the project shall comply fully with all relevant Health and Safety Legislation. In addition to the safety of activities on site, this also includes ensuring that both the design and the completed works provide a safe accommodation facility.



8.3 Town Planning Legislation

8.3.1 The MOD no longer has Crown Immunity. Consultation with Local Planning Authorities (LPAs) is therefore essential. In some circumstances a project may be a Permitted Development, so early consultation with the MOD Project Team and the LPA is essential to establish whether the project is likely to fall into this category.

8.3.2 The Local Defence Land Agent (DLA) should be contacted at an early stage to determine if there are any sensitive planning issues relating to the proposed site, or nature of the development. Copies of the Planning drawings must be sent to the DLA, before submission to the LPA, to determine whether the DLA wants to undertake the process of consultation himself.

8.3.3 The requirements under Town Planning and Historic Building Legislation can, in certain circumstances, have a significant bearing on the design and siting of a building e.g. the size of the project, its proximity to civilian public areas, refurbishment work on a historic building, or a proposal involving significant loss of trees or landscaping.

8.4 Building Regulations

8.4.1 All works must be designed and constructed fully in accordance with current Building Regulations using the Approved Documents (or equivalent in Scotland and Northern Ireland) as mandatory design solutions.

8.4.2 The MOD's current mandated policy is that all building designs and subsequent work on site must be certified by a suitably qualified and experienced Building Control professional with certificates provided to the Defence Infrastructure Organisation (DIO) Building Standards team at designated stages of the contract. The Project Team must follow the procedures detailed within Policy Instruction 02/10 MOD Building Compliance System.

8.4.3 In order to seek Determinations against the design details contained within the Approved Documents (or equivalent) the Project team must consult with the DIO Building Standards Team who are sole Technical Authority for Building Regulations on the Estate. Determinations must be sought at design stage and will not be granted retrospectively for completed works.

8.5 Equalities Act 2010

8.5.1 The requirements for disabled SLA on the estate is uncertain. The Equalities Act 2010, builds upon the various equalities legislation, placing an Equality Duty on employers. There are exemptions for the Army to operate a discriminatory policy for the recruitment of uniformed personnel, as such there is no generic requirement for SLA to be compliant with the Disability Discrimination Act 1995 (DDA). However, where a service person is injured in service, there is a legal obligation and a duty of care to provide accommodation and working conditions which are not prejudicial to his or her welfare and ability to conduct a unimpeded life, even if during a recovery phase following injury.

8.5.2 It is unclear how many injured soldiers will remain in service following discharge from the Personnel And Rehabilitation Centres, and therefore the likely demand for disabled SLA. A balance must be struck between over-provision of a potential requirement pushing up project costs, and efficient provision of infrastructure that is capable of being upgraded to accommodate disabled soldiers. The overarching principle is that each garrison or single unit barracks, as part of projects to provide refurbished or new SLA, should be provided with a number of SLA, compliant with Part M which are capable of being upgraded to accommodate disabled soldiers.

8.5.3 There may also be circumstances where there is a requirement to provide accommodation to contractors or members of other government departments who may

have disabilities in Officer's and WO & Sgt's. This drives the requirement to ensure that where necessary, new build or refurbished accommodation is both compliant with Part M and capable of being changed to accommodate service personnel with physical disabilities. This policy applies only to SLA and Messes, all other new buildings (such as office or technical infra) are required to comply with Part M.

8.5.4 Each site will be different. The first step in evaluating the need will be to establish the requirement for the site. On commencement of a project, the Project Team should aim to determine the use of the site, and the likely requirement for legislatively compliant disabled accommodation with the stakeholders, and the relevant MOD policy guidance.

8.5.5 The Project Team should establish if there is a requirement to house injured or physically disabled service personnel, and the likely numbers to be accommodated. This should be checked against the number of existing available rooms on the site or in the garrison.

8.5.6 Once the requirement has been established then the Project Team can evaluate the most appropriate options which will satisfy the need.

8.6 Crown Fire Safety Standards

8.6.1 In addition to complying with the appropriate



Building Regulations, building designs must conform to the MOD's own mandatory and current Fire and Safety Standards.

8.6.2 Early and continued consultation with the MOD Project Fire Officer is essential, particularly at the preliminary design stages of a project, to ensure that the MOD's mandatory standards are fully understood and complied with and any potential deviations from these regulations are to be formally agreed at the design stage by the Project Fire Officer.

8.7 Counter Terrorist Measure

MoD Policy

8.7.1 It is MoD policy that reasonable & practicable Counter Terrorist Measures (CTM) are applied to all MoD owned or occupied buildings. The purpose of this is to limit damage to the building fabric and injury to occupants in the event of a terrorist attack.

8.7.2 The philosophy of protection is to minimise the consequences of an event by using a reasonable stand-off (distance) to buildings. If the recommended minimum distances in the references below cannot be achieved, then the deficiency in distance needs to be compensated for by providing more robust construction.

8.7.3 The Defence Manual of Security divides sites & Establishments into three 'Categories of Risk' or 'Site Vulnerabilities' depending on their value as an 'asset' and their attractiveness as a target. It is the responsibility of the MoD Project Security Authority to define the Site Vulnerability as either HIGH, MODERATE or LOW. This drives the CT Measures that are required on a particular site.

Overview of Standard Measures

8.7.4 Good site planning can minimise the cost of providing protection to buildings and their occupants. The minimum stand-off ranges to buildings are set out in the reference documents noted in this section.

8.7.5 The purpose of construction measures is to try to limit the likelihood of disproportionate and progressive collapse of a structure in the event of an accidental occurrence or terrorist attack. This generally involves ensuring the use of an appropriate structural form (i.e. a framed structure rather than load bearing masonry) and that the structural elements are properly tied together. All structures are to be designed in accordance with the standard design codes and the additional measures given in the references listed in this section.

8.7.6 It is required that the building cladding & roofing have a degree of resistance against both the applied blast loads and the fragments & debris that can be projected by the explosive device. If the cladding fails, this will also pose a hazard to occupants, so this potential effect also needs to be taken into account.

8.7.7 Projected glass fragments from both external and internal broken windows pose the highest hazard to occupants in the event of a terrorist attack. In order to limit this hazard, the extent of glazing should be minimised to that necessary to meet the functional requirements for building occupation and use. Glazing protection is also achieved by reducing (but not necessarily eliminating) the production, projected velocity and hazardous nature of the fragments by using appropriate materials (e.g. laminated glass for a new window or by applying anti-shatter film on an existing non-compliant window), and an appropriate frame design for higher levels of protection.

8.7.8 Where possible, the space planning of buildings must reflect the need to avoid concentrations of personnel in vulnerable locations. Consideration should be given to providing a better level of protection where there are large concentrations of personnel.

8.7.9 In the event of a bomb threat warning, contingency measures must be in place for properly dealing with the potential impact. These may be procedural or involve construction (e.g. the use of protected spaces or Bomb Shelter Areas's), or both.

8.7.10 The minimum construction requirements relative

to the stand-off range achieved to a building is set out in the references below.

8.7.11 For HIGH vulnerability sites the CT measures to be determined on a case by case basis depending on the client and user requirements. The measures should not, however, fall below the minimum measures set out in the document Construction Standards for MoD Buildings Subject to Terrorist Threat.

8.7.12 For MODERATE vulnerability sites the minimum measures set out in the document Construction Standards for MoD Buildings subject to Terrorist Threat should be used without modification.

8.7.13 For LOW vulnerability sites, the requirements of the document - Counter Terrorist Measures Guidance Note 3 Construction Counter Terrorist Measures (CTM) for LOW Vulnerability Sites, shall be followed.

8.8 Crime Prevention

8.8.1 Early consultation with the local Service Police Crime Prevention Officer is recommended at the preliminary design stages of a project to identify likely crime risks and ensure that appropriate measures are understood and considered.

8.8.2 The crime risks associated with SLA buildings include the theft of personal belongings and equipment stored within bedsits and store rooms. The provision of locks and anti theft fittings on fitted furniture, bedsit doors and windows, allows individuals to protect their belongings.

8.8.3 Access into accommodation blocks should be controlled and openable by residents of that block only. Consideration may be given to providing a bell and intercom system at main entrances for flat occupants to permit visitors to enter.

8.8.4 Access control and locking strategy should be discussed and agreed with the Establishment at the earliest opportunity, and ideally included in the URD.

8.8.5 The need for external security lighting and surveillance equipment should be established during design. The site layout and design of the building groupings should allow effective patrolling of SLA sites by security staff. Dead-end courtyard spaces without pedestrian through-routes are not recommended.



9.0 Design Life & Maintenance Durability

9.0 Design Life and Maintenance Durability

9.1 General

9.1.1 All elements of the completed facility are to be suitable for their intended purpose, aimed at ensuring each facility is capable of fulfilling its required function and complies with all relevant legislation, statutory regulations and capable of withstanding robust usage on a regular basis.

9.1.2 As employers, the Services have a 'duty of care' to ensure that the facilities and furniture provided are safe for the employees. The deliverables of any project need to meet this requirement, so as to ensure that employers' responsibilities are safeguarded.

9.1.3 There shall also be adequate integrity of completed facilities, so that the fabric of the building does not deteriorate excessively or disproportionately whatever the performance requirement. Amongst others, this includes care in the design, product selection and workmanship of:

- Items subject to repetitive or heavy usage, or both.
- Items in prominent view, requiring a good finished appearance to prevail, and where visible damage cannot be tolerated. In general, finishes shall be durable, hard-wearing and easily cleaned, but at the same time be comfortable, homely and similar to those found in a typical home environment.
- Surface finishes in potentially damp areas such as en-suites and utility rooms, to prevent damp ingress or leakage to other areas.
- Adequate durable protection to hidden or exposed building fabric susceptible to damp ingress, mildew, rot, corrosion, damage or other deterioration.
- Items whose degeneration may create health and safety hazard for users.
- Items whose degeneration may compromise their performance or that of adjacent components.

9.1.4 Designs shall provide an economic whole life performance considering the inspection, cleaning and maintenance requirements.

9.1.5 All selected materials together with all design, detailing, specification and workmanship shall give rise to a finished product meeting these requirements.

9.1.6 These requirements do not just apply to internal fittings and fabric of the building but also the entire external envelope, which must be sufficiently weatherproof to ensure no wind or water penetration in the life of the building.

9.1.7 The overall operational requirement for the buildings is 60 years (unless stated otherwise in the Project Brief and URD) and the design shall be based on this timeframe. Within this timeframe the design of all elements should provide the MOD with the best value for money, as demonstrated by the Whole Life

Cost Model which shall be for a period of 35 years (unless stated otherwise in the Project Brief and URD). Buildings with a design life exceeding 35 years would provide a degree of residual value in the Whole Life Cost Model.

9.1.8 For each individual project and in support of the Whole Life Cost model, details should be provided to populate a Design Life Schedule of the major elements, including but not limited to:

- Structure.
- External walls & cladding.
- Internal walls.
- Roof.
- Windows.
- External & internal doors.
- Floor & wall coverings.
- External & internal decoration.
- Sanitary ware.
- Bedroom furniture (fitted and loose).
- Common room furniture.
- Utility fitted furniture, cupboards, etc.
- Mechanical & electrical plant.
- M & E installations and fittings, including plumbing, pipework, wiring & light fittings.
- Services Infrastructure.
- Rainwater goods.
- External paving and hardstanding.

9.1.9 Projects will involve the installation of a variety of manufactured products, many of which are often accompanied by a guarantee. Guarantees shall not be totally relied upon to judge the quality of a product. A better indication as to the durability of a product can be demonstrated through accreditation by an independent testing house, such as the British Board of Agrément or other European equivalent.

9.1.10 Where a guarantee is regarded as appropriate, it shall be fully underwritten and insurance-backed. For building systems comprising a number of products such as roofs or windows, guarantees shall cover a whole system as installed including workmanship and all fixings, sealants, glues, jointing systems, cut edges or any other treatment to the materials necessary for installation.

9.1.11 Any installed system shall avoid items that require onerous inspection, maintenance or cleaning liabilities throughout the life of the building. In selecting a product, the extent, frequency and cost of any future inspections or maintenance necessary shall be considered. These liabilities shall be minimised and wherever practicable, shall not require a higher level of in-life maintenance to ensure continued validity of any guarantee.



This Guide has been produced in collaboration by Peter Hughes (Defence Infrastructure Organisation), Colin Holloway (Lend Lease), Leigh Lenaghan and Christopher Liddle (HLM Architects).

