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INVESTOR IN PEOPLE

# SECTION **3a**

## **PRIMARY SCHOOLS BUILDING HANDBOOK**

Edition 1 April 2009

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<b>Edition No</b>	<b>Revision</b>	<b>Date</b>
1	1. Review of Section 3 - Primary School Building Handbook 1992 and subsequent updates through to March 2006, principally addressing changes to the Schedules of Accommodation, changes in the curriculum, teaching methods and construction legislation.	April 2009

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## 1.0 INTRODUCTION

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### 1.1 General

- i. This document provides the general design requirements and room inter-relationships applicable to the design of primary schools.
- ii. This document should be read in conjunction with Section 1 – Procedures (*currently in preparation by DE*).
- iii. This document in conjunction with other relevant design guidance identified herein, is intended both as a general design tool-kit for schools, school authorities and their design teams and as a reference document for the evaluation of design submission by the Department of Education.

### 1.2 Application

- i. This document applies to all primary school construction projects for which capital funding (or grant-aid) whether in total or in part has been approved by the Department of Education in writing.
- ii. Designers are encouraged to be creative and innovative within the well defined guidelines provided in this document.
- iii. The accommodation brief for all primary school construction projects shall be as advised to the school authorities by the Department of Education based upon the Schedules of Accommodation, Section 3b (sample included herein at Appendix 3). Standard Schedules of Accommodation for 4-28 classroom primary schools may also be viewed on the Department's website: [www.deni.gov.uk](http://www.deni.gov.uk)
- iv. Where it is proposed to construct a new school, the guidance provided in this document shall be applied in full. Where construction works are proposed for existing school buildings including extensions, conversions, refurbishments, etc a more pragmatic approach, particularly to the Schedules of Accommodation and associated areas is expected. New build portions of a project shall comply fully with this document.

### 1.3 Current Version

When referring to this document for guidance, it is incumbent upon school authorities, contractors and design teams to ensure that it is the most up-to-date version. The current version may be viewed on the Department's website: [www.deni.gov.uk](http://www.deni.gov.uk)

#### 1.4 Feedback

The Department of Education welcomes feedback, comments and suggestions on how to improve this document. These should be addressed to:-

Grade 7  
Building Branch  
Rathgael House  
43 Balloo Road  
BANGOR  
Co Down  
BT19 7PR

All feedback will be considered when revising the document.

## 2.0 EDUCATIONAL CONSIDERATIONS

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### 2.1 Education Development

The delivery of primary education has continued to develop over the last 10-15 years. Recent changes have sprung from:

- an increased awareness of how young children learn;
- the exponential growth in the availability and amount of learning information, equalled only by the ease with which it can be stored, retrieved and presented;
- the changing patterns in social behaviour;
- the pressures arising from industrial and technological developments;
- improved resources and general educational facilities within the school system;
- economic pressures;
- increased awareness of the impact of environmental change.

It would be wrong to assume that practice within the classrooms of all schools has been dramatically altered by these changes. However, all schools have been affected, at least to some degree, and all schools must accept and meet the new challenges of the continual development of our society.

### 2.2 Educational Environment

The school of today is a place where children and teachers live, work and play for a substantial part of their lives. Its purpose is to enable children to grow and learn, in the fullest sense of those words, in a learning environment both indoor and outdoor that is satisfying, stimulating and adaptable to changing needs.

The learning environment of a primary school refers to the organisation and arrangement of learning resources and opportunities within the classroom, the school and the immediate surroundings. These areas should be stimulating and interesting. The good environment is one that incorporates display, resources and things living and growing, and has been structured and organised not only to attract and hold the attention of the children but to provide opportunities and encouragement for them actively to learn through and in it.

A thoughtfully planned school is at the heart of a good learning environment, and should allow the teachers the facility to:

- encourage children to browse, touch, examine, ponder, and ask questions;
- plan situations/tasks in which children individually/collectively can become actively engaged;
- arrange assignments, problems, experiments designed to capture the imagination of the children;
- plan for movement, noise, and co-operative shared learning, while respecting the rights of others, both inside and outside the classroom;
- create a caring society in which there is mutual trust and understanding.

## 3.0 DESIGN GUIDELINES

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### 3.1 Concept

The design of a primary school building and grounds should be seen as a single resource that should:

- extend, not restrict, the choices that teachers are able to make;
- provide opportunities for the children to learn independently in small groups or as a class unit;
- recognise the increasing use of resources to facilitate the children's learning;
- accommodate the increasing likelihood of community use.

The development of these principles has resulted in the requirement for extended shared resource areas where children, individually or in class groupings, will have opportunities to experience the use of an increasing pool of resources and technology. **However, specialist accommodation for science, technology, computer suites, etc in primary schools is NOT required.**

### 3.2 Design Considerations

The design should take account of the following important factors:

- adherence to the Department's Schedules of Accommodation, Section 3b (sample schedules provided at Appendix 3), including compliance with the Limit of Internal Area (LIA) and budget limits set by the Department;
- provision of resource spaces with direct access and vision to an appropriate number of adjacent classrooms;
- cloakroom/toilet accommodation preferably en suite between pairs of classrooms (as appropriate), and with external access;
- circulation space generally being limited as far as is practical;
- the requirement for limited built-in furniture;

- the need for areas for community and after hours use to be separately zoned;
- the appointment of a Landscape Architect at the initial stage in new schemes, and as otherwise considered appropriate by the Department;
- the likelihood that it may not be feasible or cost effective to provide resource spaces in existing buildings; and
- satisfy the requirements of the Special Educational Needs and Disability (NI) Order 2005.

### 3.3 Exterior Aspects of Design

The external site areas should fulfil several special needs and like the internal vistas of the school, are of critical importance particularly in the education of children in an urban setting. The outside space should be seen as an integral part of the school and an extension of the classroom, and should provide the opportunity for the school, staff and pupils to satisfy the Department's policy on Biodiversity, eg habitat replacement, bird boxes, bat boxes, etc. In this context consideration should be given to the provision of the following facilities:

- areas for small groups of children to meet, sit, play and work together;
- covered area(s) for noisy, constructive activities;
- areas to facilitate learning, especially the study of the environment and the ecology within the school grounds;
- an outdoor enclosed garden area to introduce children to the idea of adapting their environment;
- a designated compost and recycle area.

### 3.4 Accommodation and Gross Target Cost

The recommended Schedules of Accommodation for specific sizes of schools will be provided by the Department of Education, Section 3b, sample schedules are given in Appendix 3. The Department's gross target cost will be based upon the Limit of Internal Area (LIA) plus School Meals Accommodation, within which it should be possible to provide the required accommodation.

**3.5 Extending Existing** The area for an extension to an existing school is not necessarily the difference between the relevant LIA recommended for a new school and the current area.

It is acknowledged that in certain cases; particularly refurbishment schemes; it may not be economically possible to achieve some of the recommendations set out in the Schedules of Accommodation and the Building Handbook. In which case the Department will give further consideration and may provide further guidance.

**3.6 Environmental Assessment** The Department is committed to the Achieving Excellence Initiative for NI and in particular Achieving Sustainability in Construction Procurement. As such design teams on major school building projects are required to measure the impact of their design on the environment using a recognised environmental assessment tool, eg BREEAM:Education or equivalent.

Design teams shall aim to achieve a rating of “excellent” for all new construction projects and “very good” for refurbishment projects.

In order to achieve the highest possible rating and ensure best value for money, the assessment process must be initiated by the school authority and their consultants/contractors at the earliest possible stage of development.

Formal certification will be required by the Department as and when recommended (by the assessment organisation eg BRE) during the design process and upon completion of the school construction.

Further guidance is available in the Environmental Assessment Guide document at Appendix 9 (*currently in preparation by DE*).

## 4.0 THE SITE

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### 4.1 Suitability

The site should preferably be in an open but not unduly exposed situation and have convenient access to a suitable road and all mains services. Site levels, water tables and soil substrate, should be suitable for development, and be such that changes of level and requirements for drainage are minimal and can be achieved in a cost-effective manner. Sites with existing features such as hedgerows, mature healthy trees, a rock outcrop or modest wet meadow area are particularly advantageous/useful.

### 4.2 Size

Appendix 2 indicates the recommended play and site areas for a given size of school. The table is calculated on the basis of single storey construction and excludes any area:

- a. for future extension;
- b. for youth and community provision;
- c. for a lay-by or bus turning circle, or other traffic requirements; and
- d. which because of shape, planning restriction, contours or ground condition is considered unsuitable for educational use.

### 4.3 Site Development

The development should generally make the best use of the site having regard to its particular physical characteristics, such as existing trees, hedges, streams, topography and good views. Where possible the existing physical features should be retained and enhanced so as to ensure that the design harmonises with rather than imposes itself upon the landscape, and that maximum use is made of the existing resource. Particularly careful consideration must be given to the potential impact of the development on the site's existing ecology. In addition, recognition should be given to orientation of the building, its relationship to the open areas, traffic noise, vehicle and pedestrian access, and location of underground services. The creation of useless left-over spaces that are difficult to maintain must be avoided.

### 4.4 Provision for Future Extension

Location of new buildings should where possible be so arranged as to provide for the siting of possible future extension, either permanent or temporary. See also paragraph 4.25.

**4.5 Planting Framework** A planting framework should be provided for the school grounds which would integrate the various outdoor spaces, define and control access, and provide an atmosphere that is conducive to both work and play. Because the main concept is that a landscape scheme will be adopted and adapted by the school, the facilities provided within the building contract will be largely limited to establishing a strong layout and planting framework within which the ideas can develop at a later date. It is imperative that the school authority, management team, Board of Governors or Trustees, etc are in agreement with any landscaping proposals as the school will be responsible for maintenance of these areas.

A boundary shelter belt of native tree whips and bare root shrubs can provide shelter, privacy, quiet play spaces, educational resource and a wildlife habitat. Early establishment of the framework is advisable in order to maximise its success.

There may be the opportunity for more formal colourful shrub planting with seasonal interest to offset the building and enhance the sense of arrival.

The planting layout should take into consideration factors such as minimum planting distances of trees from underground services, from buildings and from other trees.

Planted areas should reflect the need for ease of maintenance, and should avoid desire lines, unsuitable junctions of grass to hard surfacing, shrubs or fences. All planting should be adequately protected.

Choice of plants and shrubs should reflect physical features such as exposure, soil type and aspect. Growth habit or form should be suited to a particular location and have all-year round interest. Particularly desirable are those with potential educational value and conducive to wildlife.

**Prickly or poisonous plants should NOT be used.**

**4.6 Outdoor Classroom/ Resource Area** Although the layout and planting of the whole school grounds should be considered as a potential educational resource, a specific area should be allocated for outdoor education. This should be partially paved and located in a sunny, quiet, sheltered position easily accessible from the building. Sloping sites may offer the opportunity to create a modest amphitheatre.

#### 4.7 Potential Educational Uses of the School Grounds

The potential educational value of school grounds should be appreciated. Although it may not be possible or even desirable to provide all of the following facilities in the landscape scheme, the layout should create opportunities for some planting/development to be undertaken by teachers and pupils at a later date.

Some examples of desirable facilities which relate to curricular study and give recognition to the Department's policy on Biodiversity are:

- a. variety of seasonable colour, leaf forms, seeds, etc;
- b. variation in levels and enclosure;
- c. a variety of resources and nature habitats;
- d. areas for future planting;
- e. opportunities for research and data collection;
- f. opportunity for a general study of the environment;
- g. recreation.

Attention is drawn to DfES Building Bulletin No 71, "The Outdoor Classroom" (2<sup>nd</sup> edition 1999).

#### 4.8 Children's Garden Area

A fenced off uniform area approximately 20 m<sup>2</sup> adjacent to the building should be provided for active projects relating to the outdoor environment such as gardening. It should be well drained, have a sunny aspect, good topsoil and be easily accessible to maintenance machinery.

#### 4.9 Hard Play Space(s)

The area required is given in Appendix 2. It should be noted that 2 paved spaces are required for a school of 5 classes and above to provide separate spaces for pupils in Foundation Stage/Key Stage 1 and Key Stage 2. The minimum size of any space should be 350 m<sup>2</sup>. Division between play spaces for different age groups can be made using movable planters or similar artefacts. The shape can be reasonably informal. These spaces should have a smooth, durable, non-slip surface with adequate drainage falls and gullies. Minimum gradients are desirable at the interface between play spaces (both hard and grass types). If possible, hard play spaces should be located to avoid shadows and shading from buildings. Where hard play spaces are adjacent to buildings, designers shall carefully consider the treatment of wall projections, window cills, etc particularly at children's head height.

- 4.10 **Location of Hard Play Space(s)** Hard play spaces should preferably be located in a sheltered sunny position and be readily accessible to both the younger and older age groups in the school.
- 4.11 **Covered Play Space** Large scale and noisy construction activities can usefully be pursued outdoors as can the care of animals and plants. To provide for this it is recommended that 30 m<sup>2</sup> of the total hard play area be covered (but not enclosed) preferably adjacent to the Foundation Stage classrooms in a sheltered and sunny location.
- 4.12 **Outdoor PE Apparatus and Line Markings** Where fixed outdoor apparatus for Physical Education is provided from the school's equipment budget the siting and size should be carefully considered in relation to the age range of the pupils and the layout of the play space. A suitable safe paving or other surface should also be provided (from the school's equipment budget) beneath such apparatus and should comply with the current British Standard or equivalent. Where appropriate, hard play spaces shall be provided with markings for Physical Education play or other activities.
- 4.13 **Informal Grass Play Space(s)** The minimum area required is given in Appendix 2. Steep banks in play areas should be avoided, but gradual changes in level add interest. On larger sites a reasonably rectangular and levelled area is desirable. Low lying sites not easily drained should be avoided; otherwise grass play areas shall have land drainage systems designed to offer maximum use of the area throughout the school year.
- 4.14 **Site Access Generally** Careful consideration needs to be given to the location of exits and entrances to the site. The entrances, driveways and delivery areas for service vehicles must be planned so as to avoid risks and hazards to pupils, parents, staff and visitors.
- 4.15 **Vehicular Access** Entrances, driveways and turning spaces should be provided which are suitable for large long vehicles such as mobile dental clinics, fuel tankers, goods and refuse vehicles, grounds maintenance machinery and, as necessary, school buses. Where appropriate, suitable set down/pick-up lay-bys shall be provided. Access to all areas of the building perimeter for emergency vehicles is desirable.
- 4.16 **Planning Authority Requirements** The Planning Authority in consultation with Roads Service may stipulate conditions governing the design of the entrance such as road width, drainage, set back of gates and sight lines. Their guidance should be sought as early as possible in the design process.

- 4.17 **Road Widths** A width of 3.7 m is usually required for fire-fighting vehicles, and 4.8 m is considered adequate for two-way traffic.
- 4.18 **Pedestrian Access** Safe pedestrian access for pupils' parents, staff and other visitors should be provided preferably separated from vehicular driveways.
- 4.19 **Entrance Locations** Where a choice of location is available, the entrance should be onto a quiet roadway. All entrances should:
- be carefully sited with regard to traffic hazards;
  - be clearly visible to vehicular traffic;
  - be provided with barriers or other means of controlling pupils as considered necessary; and
  - comply with any other conditions specified by the Planning Authority.
- 4.20 **Access for Persons With a Disability** Access to the school building for persons with a disability should be provided from the point of entrance at the boundary and from a convenient vehicle setting-down point with a dropped ramped footpath kerb and level access at the main entrance to the building(s) as necessary. All to be compliant with the relevant part of Technical Booklet R of the Building Regulations (NI) 2000.
- 4.21 **Staff and Visitors' Parking** Provision for parking should be made on the basis of 1 bay per member of teaching and administrative staff, 1 bay per 2 ancillary staff and half of total staff provision for visitors plus a few additional bays for school meals staff (3 minimum), subject to any overall minimum required by the Planning Authority. A minimum of 1 bay, compliant with the relevant part of Technical Booklet R of the Building Regulations (NI) 2000, should be suitably located and designated for the use of persons with a disability.
- Where community use out-of-school hours is envisaged and for parents' meetings, school concerts, etc, consideration should be given to the use of a hard play space for additional parking. This area should therefore be suitably constructed with appropriate access. Collapsible bollards or other means should be used to secure the area during school hours.
- 4.22 **Bus Lay-by or Turning Circle** Either of these facilities should be provided if part of the Planning requirement.

- 4.23 **Turning Circle** A turning circle should be of adequate radius to accommodate buses. It should be located as near the entrance gates as possible, but in order to meet the facility with the least use of school grounds, a “half moon” layout at the entrance should be considered as an alternative.
- 4.24 **Site and Building Security** Depending upon circumstances, adequate site security in the form of suitable fencing and gates should be provided to protect the building and the site generally. The design of fencing and gates shall be such that they do not create a climbing frame. Consultation with the PSNI Crime Prevention Design Adviser/Architectural Liaison Officer on all aspects of site and building security is recommended at an early stage of development.
- 4.25 **Temporary Accommodation** Temporary accommodation should be located conveniently to the permanent school building; it should be visually acceptable, and, if possible be sited in areas which do not significantly reduce the hard play spaces below the recommended figures, or impede future development plans.
- 4.26 **Secure Bin Storage Area** A suitably hard surfaced area shall be identified on the site for location of the bin storage area. It shall be situated 6.0 m minimum from the school building, fenced all around 1.8 m high and have secure, lockable gates.
- The area shall be of an appropriate size to accommodate separate space for general waste storage and for recyclable materials. Location and layout to facilitate ease of collection by the local authority.

## 5.0 THE BUILDING

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### 5.1 Building Form and Economics

Primary schools should be planned as compactly and economically as possible, consistent with the need to achieve a pleasing environment. Efforts should be made to restrict to a minimum the amount of space devoted solely to circulation.

They should in general be of single storey construction but for reasons of economy in large schools, or due to site restriction, part 2-storey construction should be considered. In such cases the younger children should be accommodated on the ground floor. Any change in level should, where possible, be ramped. If stairs and a lift(s) are provided, the LIA will be increased to take into account the area required to accommodate these spaces (within reason).

Where possible, provision should be made for extensions to the permanent construction without necessarily involving wasteful planning initially. Extensions should normally be horizontal as vertical extensions are not generally considered to be cost effective.

### 5.2 Building Scale

The school building in detail should be in scale with children and promote feelings of warmth and intimacy, almost of domesticity. While internal changes of floor level are discouraged except where necessitated by site conditions, some variation in the ceiling height and volume of the spaces can lead to interest.

Consideration may be given to the introduction of some variety of texture such as natural wood, brick, fabric, etc. Muted tones should be used so as not to detract from children's work displays. Colour schemes should take account of good practice guidelines with regard to the visually impaired (BS8300:2009). The building generally should reinforce and not detract from the teaching being offered in the different spaces and should encourage the fullest use by teachers and children.

### 5.3 Safety

Safety is paramount. Particular attention should be paid to the appropriate height of vision panels in doors and the omission of sharp edges and projections, including windows, particularly at head height. **Double-action double-leaf doors should NOT be provided except where regarded as essential.**

Any glazing below the level of 800 mm and elsewhere as considered necessary should be in accordance with the requirements of the current British Standard Code of Practice or Building Regulation or equivalent. The BS or equivalent

marking should be indicated on all safety glass. Additional protection may be provided if the circumstances make this desirable.

In all cases the top glass line should be not more than 300 mm from ceiling level.

It is essential that opening lights should not project at heights likely to cause injury to children or persons outside the building. Restriction on the extent of opening will assist in this respect as well as improving security.

**5.4 Scheme Evaluation** In addition to specific quantitative requirements schemes should be designed and will be evaluated in terms of the educational value achieved.

**5.5 The Educational Concept** To allow for flexibility in teaching styles and to maximise the use of the full range of available resources, a direct relationship between each classroom and a central resource space are physical characteristics of such a school. This is best achieved by a resource area serving a small/modest number of classrooms relating to children of similar age groups.

Foundation Stage refers to years 1 and 2, Key Stage 1 refers to years 3 and 4, and Key Stage 2 to years 5 to 7. It is desirable that where practicable the accommodation for each Stage is kept together.

Multi-Purpose Rooms and a small group room for specialist small group teaching (where these are scheduled) do not require the above flexibility or resource space access.

**5.6 The Relationship of Spaces** The way in which teaching spaces relate to one another and to the shared facilities (resource areas) of the school bears very much on the usefulness of the space. If children based outside a space must use it for circulation without otherwise using it, then its usefulness is diminished. Appendices 4 and 5 show the relationship of rooms generally.

**5.7 Circulation** The degree to which spaces are to be regarded as self-contained must be carefully considered in their relationships to other parts of the school, particularly in terms of circulation. It is acknowledged that some circulation will take place through resource areas although this must be very limited.

## 5.8 Resource Areas

To reflect greater emphasis on activity-based learning there are strong educational advantages to be gained by providing large shared resource areas external to the standard class space. The effectiveness of resource areas depends largely on achieving the usefulness referred to in paragraph 5.6 and other related characteristics such as visual links and the general environment provided, including good natural lighting. Depending upon the activities in hand at any time, the number of children using this space will vary.

The effectiveness of the use of resource areas depends therefore on such aspects as the reduction of continuous traffic through the area. This is helped considerably if toilet and cloakroom accommodation associated with pairs of classrooms is located on the exterior walls. Direct access to and from the outdoor play spaces can be facilitated by this arrangement, which with class management will help maintain the effectiveness of the area. See Appendices 4 and 5.

Depending on the size of the school, the shared resource area may include provision for a very wide range of activities such as the use of audio-visual equipment, project, library, role play and computer-related work. Where Multi-Purpose Rooms are scheduled, some of the audio-visual work may take place there.

Strong visual links between the general teaching spaces and resource areas are not only essential to facilitate supervision, but also to provide vistas extending into other areas of the school.

## 5.9 Security Generally

Internal doors should be lockable and master keyed as considered necessary by the school. Of particular importance are the office(s), secure stores, Multi-Purpose Rooms (where provided) and other areas where valuable or hazardous equipment is used or stored. See also paragraph 5.19 Community Use.

An intruder alarm shall be provided. For further detail see Room Data Sheets 6.1-6.29.

## 5.10 Secure Store

In schools of 7 classrooms or more, secure document storage shall be provided in the form of a Central Store preferably located convenient to the admin accommodation.

Resource area stores shall be provided opening directly onto the respective resource area.

### 5.11 Acoustics

Not only movement but sound can intrude upon the working arrangements preferred by the teachers in each teaching space. Ways of absorbing sound should always be considered both in the basic design of buildings and in the materials used. It is recommended that the acoustic performance of the school shall be broadly in accordance with the DfES Building Bulletin 93. For the purpose of designing in accordance with BB93 and to permit the adequate provision of vision panelling in the wall and door in the wall common to a classroom and its resource area, the spaces should be considered as open-plan and the performance standard for airborne sound insulation between rooms should be reduced to  $30 \text{ DnT(Tmf,max)w}$ . With regard to noise survey referred to in section 2.3 of BB93, the schools hours during which measurements are to be taken are between 9:15 and 16:00. In accordance with sections 1.3 and 1.3.1 of BB93 an acoustic test shall be carried out on the completed school to demonstrate that the requirements of BB93 have been met. (For more detail, refer to the ACOUSTICS section of the Room Data Sheets Items 6.1-6.29 inclusive.)

### 5.12 General Classrooms

The floor area of all classrooms shall be  $60 \text{ m}^2$ . The space should create an identifiable zone for the whole class but also provide an area(s) where pupils can also be taught in smaller groups or as individuals in the range of activities appropriate to the primary curriculum. (For further detail, refer to the Room Data Sheets at Item 6.1.)

The shape of the classroom should preferably be rectangular and there are advantages in having all of the classrooms the same shape. It should also be noted that the shape, colour scheme of the walls, layout of furniture and flooring, amount of daylight and the room arrangement will all influence how pupils learn. Careful consideration of room depth is necessary in relation to daylight level, natural ventilation and view out.

### 5.13 Classroom Sequence

There are advantages in the provision of class spaces being arranged sequentially from the youngest to oldest age groups and this should be carefully considered by the designers in association with the school.

### 5.14 Door Locations

The location of doors and sinks affects pathway patterns which are crucial in the use of a space and careful consideration should be given to their siting to allow flexible choices of use of the space. Corners of teaching spaces are of value to children educationally and where possible usable corners should be free of doorways.

- 5.15 **Classroom Storage** Storage should be provided to achieve an optimum compromise between ease of access and capacity. Classroom stores shall be en suite to their respective classroom with doors opening outward. (For further detail, refer to the Room Data Sheets at Item 6.11.)
- 5.16 **Small Group Room Medical Inspection** Where scheduled, such a space is required to accommodate a small group either separately or in conjunction with other specific facilities. These could include a quiet room, or a room for a peripatetic teacher possibly combined with the Medical Inspection facility. (For further detail, refer to the Room Data Sheets at Item 6.5.)
- 5.17 **Multi-Purpose Rooms** Multi-Purpose Rooms 1, 2 and 3 where provided are intended to serve a wide range of functions. This will include small group tuition, music tuition, peripatetic support, special needs tuition (SEN), occupational therapist and healthcare visits, etc. They may also be used by more senior pupils or parents (whether in small groups or as individuals) to follow more specialist study and develop certain skills. The smaller rooms may be informally furnished and used for parent or staff interviews. (For further detail, refer to Room Data Sheets at Item 6.6.)
- 5.18 **Multi-Purpose Hall** All schools should have a Multi-Purpose Hall. The main uses are for assembly, Physical Education, performing arts activities/presentations involving large school groups, and, in all but the larger schools, dining. Preferably the hall should be isolated from the classrooms and related spaces for reasons of sound transmission and the potential use by external groups. (For further detail, refer to the Room Data Sheets at Item 6.3.)
- 5.19 **Community Use** Where possible the hall and access to staff and disabled persons' toilet accommodation should be located so as to enable convenient out-of-school hours' use. Provision should be made for the zoning of the heating installation, and for ensuring the security of the remainder of the building.
- 5.20 **PE Equipment Store(s)** Access to the store(s) should be only from the hall, and should conform to Northern Ireland Fire Authority requirements. (For further detail, refer to the Room Data Sheets at Items 6.13-6.16 inclusive.)
- 5.21 **Cleaner's Store(s)** A store(s) of sufficient size for the storage of bulk order materials and all cleaning equipment should be provided. Shelving, a large sink, a brush rack and a suspended mop drying rack are required. (For further detail, refer to the Room Data Sheets at Item 6.18.)

- 5.22 Caretaker's Office** In addition to the storage requirements of cleaning staff, it is recommended that in schools of 7 classes and above, a small room be provided as a base for the school caretaker. If feasible, this should be located adjacent to the main entrance (with a vision panel), permitting some supervision of this area. The room should preferably have natural light and be equipped with some display boarding. It should be separate from any bulk goods storage. (For further detail, refer to the Room Data Sheets at Item 6.24.)
- 5.23 School Meals Accommodation** This comprises the kitchen (or servery only if meals are prepared elsewhere), Chair and Table Store, and a separate Dining Room (provided for schools of 12 classes or more).
- Areas and other general guidance on School Meals Accommodation are given in Building Handbook Section 5.
- 5.24 Fire Fighting Appliances** Suitable appliances should be installed as recommended throughout the school.
- 5.25 Future Maintenance** For possible future maintenance, the storage of a few ceiling tiles or other useful items within the school after completion of the contract should be considered.
- 5.26 Telephone Installation** Schools up to 10 classrooms shall have a minimum of 2 external lines, schools with 11 classrooms or more shall have a minimum of 4 external lines. These shall be in addition to the dedicated telephone lines required for the various building services systems eg intruder alarm, lift, etc. Extensions to be provided in all rooms where noted in the Room Data Sheets at Item 6.1-6.29 inclusive.
- 5.27 Lift** A lift must be provided if site constraints/numbers of classrooms necessitate a split level or a design of 2 or more storeys.
- 5.28 Hygiene Room** To be provided in all new schools and will include toileting, showering and changing facilities. This room will also serve as the disabled toilet provision in smaller schools; however as the size of the school increases it will be necessary to provide both Hygiene Room and Wheelchair Accessible Toilet(s) to comply with Building Regulation requirements in relation to maximum travel distances. (For further detail, refer to the Room Data Sheets at Item 6.23.) See also drawing at Appendix 6.
- 5.29 Plant Rooms** A separate space must be provided for boiler/heating plant room and the electrical switch room. These spaces shall be adjacent and have separate (double) doors opening to outside.

- 5.30 Stage Store Access to the store shall be directly from the Multi-Purpose Hall, and should conform to Northern Ireland Fire Authority requirements. Funding for the portable staging will be from the school's Furniture and Equipment budget. (For further detail, refer to the Room Data Sheets at Item 6.16.)
- 5.31 External Play Store Access to the store shall be directly from outside. The store shall be located adjacent to Foundation Stage/Key Stage 1 classrooms and external hard play area as it is provided for storage of play equipment associated with the enriched infant curriculum. (For further detail, refer to the Room Data Sheets at Item 6.17.)
- 5.32 Department of Children Schools and Families Publications Whilst they do not apply directly to the design of Northern Ireland schools, a good reference to define satisfactory provision is available from the Department of Children Schools and Families through their DfES Building Bulletins, especially BB87 – Environment, BB90 – Lighting, BB93 – Acoustics and BB101 – Ventilation. However it should be noted that where specific technical guidance is provided in this document it shall take precedence.

## 6.0 ROOM DATA SHEETS

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- 6.1 - CLASSROOMS
- 6.2 - RESOURCE AREAS
- 6.3 - MULTI-PURPOSE HALL
- 6.4 - LIBRARY FACILITIES
- 6.5 - SMALL GROUP/MEDICAL INSPECTION ROOM
- 6.6 - MULTI-PURPOSE ROOM
- 6.7 - STAFF ROOM
- 6.8 - PRINCIPAL'S OFFICE
- 6.9 - GENERAL OFFICE
- 6.10 - VICE-PRINCIPAL'S OFFICE
- 6.11 - CLASSROOM STORE
- 6.12 - RESOURCE AREA STORE
- 6.13 - PE EQUIPMENT STORE
- 6.14 - MAT STORE
- 6.15 - ADULT CHAIR STORE
- 6.16 - STAGE STORE
- 6.17 - EXTERNAL PLAY STORE
- 6.18 - CLEANER'S STORE
- 6.19 - CENTRAL STORE
- 6.20 - REPROGRAPHICS ROOM
- 6.21 - CLASS TOILETS AND CLOAKS SPACE
- 6.22 - STAFF TOILETS
- 6.23 - HYGIENE ROOM
- 6.24 - CARETAKER'S OFFICE
- 6.25 - PUPIL CHANGING AT MULTI-PURPOSE HALL
- 6.26 - PUPIL TOILETS AT MULTI-PURPOSE HALL
- 6.27 - COMPUTER HUB ROOM
- 6.28 - ENTRANCE/CIRCULATION/CORRIDOR
- 6.29 - MULTI-PURPOSE 1 STORE

## 6.1 CLASSROOMS

Planning	Requirements
<b>Room Activities</b>	<p>This space should create an identifiable zone for a whole class. It should provide an area where the children can be taught and have opportunities to work, either as a whole class, in groups or as individuals, in the range of activities appropriate to the primary curriculum.</p> <p>The rooms need not always be 4-sided, as the inclusion of a recess for story-telling, or an additional play space or a work area as appropriate is acceptable. Corners of classrooms are natural work spaces and where possible should be kept free of door ways.</p> <p>Each classroom shall have a wet play area in the immediate area of the sink unit with a designated floor area of circa 12-15 m<sup>2</sup>.</p>
<b>Size</b>	Generally the floor area of all classrooms shall be 60 m <sup>2</sup> exclusive of storage. Ceiling height shall be set at a minimum of 2.9 m above floor level.
<b>Location</b>	Classrooms serving adjacent age groups clustered together and associated with the relevant resource area. See also 6.2 RESOURCE AREAS: LAYOUT.
<b>Layout</b>	<p>Generally the shape should be rectangular, bearing in mind the distance from natural light and view out. For classes in Foundation Stage and Key Stage 1 flexibility in use of space is desirable and a more square shape may be advantageous.</p> <p>A good relationship between pupil and the whiteboard is necessary in the formal teaching situation. The whiteboard should preferably be located near the door to facilitate better supervision, particularly when a resource area outside the classroom is provided.</p> <p>Consideration should be given to the relationship of the whiteboard to natural light to avoid glare and reflection for both pupils and teacher. See also FIXTURES and FITTINGS.</p>
<b>General Guidance</b>	Good guidance on design approach is available from the DfES Building Bulletins, especially BB87 Environment, BB90 Lighting, BB93 Acoustics and BB101 Ventilation. This is in addition to publications from professional institutions associated with building design, construction and specification: eg CIBSE, RICS, RSUA and RIBA.
Internal Environment	Requirements
<b>Acoustic Performance</b>	It is recommended that the acoustic performance of classrooms shall be broadly in accordance with the DfES Building Bulletin 93. For further detail refer to Item 5.11.
<b>Daylighting</b>	<p>See also WINDOWS. It is undesirable that pupils should spend long periods in rooms which receive little or no direct sunlight. A south or south-east aspect is preferable for classrooms having regard to the time of day they will be in use. It is appreciated however that this orientation will not be possible in all situations. Suitable dim-out curtains or blinds should be provided to windows likely to receive direct sunlight during school hours. Full black-out is not required.</p> <p>The level of daylight should be as good as possible with as even distribution as possible throughout each room. Excessive glazing can occupy useful wall display space and can be responsible for the discomforting effects of glare, heat loss and solar gain.</p> <p>For guidance purposes a preferred minimum daylight factor shall be 3% with a uniformity ratio better than 0.4.</p>

Building Fabric	Requirements
<b>Walls</b>	Plaster, smooth surface and capable of being easily cleaned. Wall structure capable of accepting fixings for shelves and fittings. Tiled splash-back to sink unit.
<b>Floors</b>	Non-slip, warm, resilient and easily cleaned. Generally a non-woven anti-static carpeted finish is considered suitable; however school authorities should also consider the use of non-slip acoustic vinyl in Foundation Stage and Key Stage 1 in lieu of carpet (spillages, etc are more easily cleaned). Maintenance must be minimised by careful choice of colour. It is recommended that the immediate area around the sink and, depending upon location, the doorway to the cloaks area, should be a continuous section of non-slip vinyl finish, ideally extended to skirting height, total area 12 to 15 m <sup>2</sup> .
<b>Ceiling</b>	Light in tone. Minimum floor to ceiling height = 2.9 m. Where the profile of the ceiling is sloped, the minimum may be reduced. Consideration should be given to the scale of the room and energy usage.
<b>Doors</b>	All classroom doors should have a large glazed panel(s) at suitable height for both pupils and teachers. Glass should be clear and to appropriate safety standard.
<b>Windows</b>	Windows should provide adequate and even daylighting and dark corners should be avoided. Where possible window size should allow for good use of the wall between for shelving or display. The provision of high and low level opening sashes will optimise natural ventilation. See also DAYLIGHTING and paragraph 5.3 Safety. Rooflights may be provided to supplement side-lighting as required. A window should not be placed adjacent to or above a whiteboard. Vision panels should be provided in walls between classrooms and resource areas. Cill height should be appropriate to the age group so that activities beyond do not disturb children seated within the classroom, yet enabling satisfactory supervision of the resource area.
<b>Ironmongery</b>	Doors lockable and windows lockable with stays or restrictors used on all opening sashes both high and low level. Operation of opening windows must be safe for occupants.
<b>Fixtures and Fittings</b>	Interactive Whiteboards – a minimum board area of 2.1 m <sup>2</sup> should be provided in each classroom. The lower edge should be not more than 750 mm from the floor. The location of the whiteboard is very important, the design team and school authority shall liaise closely to ensure everyone in the classroom is able to see and interact with it. Display Boarding – a generous area of display boarding should be provided. Soft wall board suitable for drawing pins and preferably unframed may run from skirting level or work top height to top of door frame height. Display boards should be painted or covered with fabric. Sinks – a sink unit with hot and cold water supply and drainer/laying space on both sides should be provided. Height should be appropriate to the age of the pupils. The sink should preferably be positioned at the whiteboard end of the room, on or near the outside wall of the classroom. <b>Taps should be within reach of small children, and spring-loaded press-down taps should NOT be used.</b> Cupboards may be provided under the sink unit. <b>A small cupboard unit and worktop may be provided as an extension to the sink unit, but extensive built-in furniture should NOT be provided.</b> Shelving - shelving should be adjustable for height and with an overall length of 3.0 linear metres (this may be split to suit specific needs).

	<p>Materials and construction should be sufficiently robust to prevent sagging. In the interests of safety, wood cladding should be provided for the exposed ends of all shelving.</p> <p>Average interval between shelves - 300 mm                  Minimum space below bottom shelf - 750 mm                  Depth of shelves - 300 mm                  Number of shelves per wall - 5 No</p>
<b>Storage</b>	Refer to separate Room Data Sheet, 6.11 Classroom Store.

<b>MECHANICAL AND ELECTRICAL SERVICE PROVISIONS</b>		<b>6.1 CLASSROOMS</b>
<b>Electrical</b>	<b>Requirements</b>	
<b>General Lighting</b>	<p>A lighting intensity of 300 lux shall be provided at the working plane. A combination of up/down lighting may be considered in order to create an evenly lit environment conducive to learning.</p> <p>The need to avoid glare should be considered when selecting and placing fittings. The fittings should be circuited and switched in such a manner as to provide flexibility.</p> <p>Light fittings should incorporate high frequency control gear and lamps which provide good colour rendering properties.</p>	
<b>Lighting Control System</b>	Lighting control system with movement and dimming detectors is required.	
<b>Emergency Lighting</b>	Not required unless part of a defined emergency escape route, local Building Control recommendation or deemed necessary by a risk assessment.	
<b>Small Power</b>	<p>1 double cleaner's socket.</p> <p>8 double computer socket outlets.                      (1 at skirting level at the teacher's end of the room.)                      (7 at dado level elsewhere at positions agreed with the school authority.)</p>	
<b>ICT Provision/Data Outlets</b>	<p>8 single data points (RJ45) shall be provided.</p> <p>1 single data point shall be located beside each double computer socket outlet at positions agreed with the school authority.</p>	
<b>ICT Provision/Voice Outlets</b>	<p>1 single voice point (RJ45) (telephone extension) shall be provided.</p> <p>Location - teacher's end of the room.</p> <p>Wall mounted standard analogue telephone handset shall be provided.</p>	
<b>Dado/Skirting Trunking</b>	Aluminium (standard colour).	
<b>Fire Alarm</b>	Fire alarm system extended into this area if deemed necessary and required by fire risk assessment, overall fire strategy or local Building Control requirement.	
<b>Intruder Alarm</b>	Intruder alarm system extended into this area if deemed necessary and required by security strategy.	
<b>Class Change</b>	Class change system extended into this area if deemed necessary and required in order to achieve necessary sound level.	
<b>TV Terminal</b>	<p>1 television aerial point shall be provided.</p> <p>Exact position to be agreed with school authority.</p>	
<b>Interactive White Board (IWB)</b>	<p>1 No provided and located at a position agreed with the school authority.</p> <p>All power and data point requirements necessary for operation of the IWB shall be provided. IWB and projector shall be set-up, interfaced and arranged to operate as a combined system.</p>	
<b>Ceiling Mounted Projector</b>	<p>1 No provided and located at a position agreed with the school authority.</p> <p>All power and data point requirements necessary for operation of the projector shall be provided. Projector and IWB shall be set-up, interfaced and arranged to operate as a combined system.</p>	

<b>Clock Installation</b>	1 No battery operated clock shall be provided.
<b>Mechanical</b>	<b>Requirements</b>
<b>Room Temperature °C</b>	Room temperature shall be 18°C.
<b>Room Temperature Optimum Start Accuracy – Heating by Radiators and Air Handling</b>	The desired room temperature is to be achieved within 30 minutes of occupation start on 60% of occupied days in the heating season, except where self-regulating under-floor heating is the main heating source.
<b>Room Heating Response to Internal Gains</b>	Sub-zoning shall be standard provision for each classroom and should achieve the desired room temperature response within 20 minutes controlled through the BEMS system.
<b>Heating Controls Location and Authority</b>	No room occupant control over heating temperature, start time, finish time, regular day omission, holiday days omit. All these controls to be centrally operable by facilities management. (BEMS System.)
<b>Heating Zoning</b>	Individual zoned heating shall be provided to each north and south orientation, of each block.
<b>Room Ventilation</b>	In accordance with requirements stated above, statutory requirements and CIBSE, BB87, BB101, BB93 guidance. Noise from mechanical ventilation/noise transfer from other internal and external spaces, must not cause the required background noise level to be exceeded..
<b>Heating</b>	To maintain the above temperature, by compensated, optimised and sequenced controls.
<b>Potable Water Services</b>	Provided to sink unit, separate tap, drinking water sign.
<b>Hot Water Services</b>	Provided to sink unit, via blending valve to separate tap.
<b>Above Ground Drainage</b>	Waste connection to sink unit.
<b>Cooling</b>	None
<b>CO<sub>2</sub> Monitoring</b>	Monitoring of CO <sub>2</sub> will be required.

## 6.2 RESOURCE AREAS

Planning	Requirements
<b>Room Activities</b>	To provide an extension to the classroom for the use of small groups engaged in a variety of activities. These can include mime and drama, watching television and video, using computers, library, slides and tapes.
<b>Size</b>	Area – 40 m <sup>2</sup> minimum, inclusive of any theoretical circulation space. For schools with less than 7 classrooms see also 6.4 LIBRARY FACILITIES: GENERAL. There should be a minimum clear height of 2.7 m. Heights in excess of this should be modest and in proportion to the area.
<b>Location</b>	Adjacent to related classrooms with direct access and vision. Vision to outside desirable.
<b>Layout</b>	The shape should be a broad rectangle, an alcove or recess may be provided but this should be easily supervised. It is recommended that a cluster of 3 or 4 (maximum) classrooms share a common resource space. It is not envisaged that this area be simply a widening of a corridor. Doorways should be suitably positioned and kept to a minimum. The number of doors opening off this area and the space lost to through and cross circulation will have a bearing on the use of the space.
<b>General Guidance</b>	Good guidance on design approach is available from the DfES Building Bulletins, especially BB87 Environment, BB90 Lighting, BB93 Acoustics and BB101 Ventilation. This is in addition to publications from professional institutions associated with building design, construction and specification: eg CIBSE, RICS, RSUA and RIBA.
Internal Environment	Requirements
<b>Acoustic Performance</b>	It is recommended that the acoustic performance of resource areas shall be broadly in accordance with the DfES Building Bulletin 93. For further detail refer to Item 5.11.
<b>Daylighting</b>	The distribution of daylight should be as good as possible. Dim-out curtains or blinds may be required if windows are likely to receive direct sunlight during school hours. Roof, clerestory or borrowed light should be included where necessary.
Building Fabric	Requirements
<b>Walls</b>	Plaster, smooth surface and capable of being easily cleaned. Wall structure capable of accepting fixings for shelves and fittings. Tiled splash-back to sink unit if provided.
<b>Floors</b>	Non-slip, warm, resilient and easily cleaned non-woven anti-static carpet. Maintenance must be minimised by careful choice of colour. It is recommended that the immediate area around the sink where provided should be a continuous section of vinyl finish, ideally extended to skirting height, total area 12 to 15 m <sup>2</sup> .
<b>Ceiling</b>	Light in tone. Minimum floor to ceiling height = 2.7 m. Where the profile of the ceiling is sloped, the minimum may be reduced. Consideration should be given to the scale of the room and energy usage.
<b>Doors</b>	None. Refer also to 6.28 ENTRANCE/CIRCULATION/CORRIDOR AREAS: Doors.
<b>Windows</b>	Windows should provide adequate and even daylighting. The provision of high and low level opening sashes will optimise natural ventilation. Windows are considered preferable to rooflights. Vision panels should be provided in walls between resource areas and classrooms. Cill height should be appropriate to the age group so that activities beyond do not disturb children seated within the classroom, yet enabling satisfactory supervision of the resource area.

<b>Ironmongery</b>	Windows lockable with stays or restrictors used on all opening sashes both high and low level. Operation of opening windows must be safe for occupants.
<b>Fixtures and Fittings</b>	Adjustable shelving – design as for Library, see 6.4 LIBRARY FACILITIES, extent and layout to be determined on individual basis up to a maximum of 4 No shelves, 3.0 m length maximum. Sinks – a sink unit with hot and cold water supply and drainer/laying space on both sides should be provided in Foundation Stage and Key Stage 1 resource areas. Height should be appropriate to the age of the pupils. Display boarding as for classrooms, see 6.1 CLASSROOMS for more detail. Otherwise free-standing furniture only provided outside the building contract should normally be used.
<b>Storage</b>	Refer to separate Room Data Sheet, 6.12 Resource Area Store.

<b>MECHANICAL AND ELECTRICAL SERVICE PROVISIONS</b>		<b>6.2 RESOURCE AREAS</b>
<b>Electrical</b>	<b>Requirements</b>	
<b>General Lighting</b>	A lighting intensity of 300 lux shall be provided at the working plane. The need to avoid glare should be considered when selecting and placing fittings. The fittings should be circuited and switched in such a manner as to provide flexibility. Light fittings shall incorporate high frequency control gear and lamps which provide good colour rendering properties.	
<b>Lighting Control System</b>	Automatic lighting controls shall be installed in this area.	
<b>Emergency Lighting</b>	Not required unless part of a defined emergency escape route, local Building Control recommendation or deemed necessary by a risk assessment.	
<b>Small Power</b>	1 double cleaner's socket. 6 double computer socket outlets. (at positions agreed with the school authority).	
<b>ICT Provision/Data outlets</b>	7 single data point (RJ45) shall be provided. (at positions agreed with the school authority).	
<b>ICT Provision/Voice Outlets</b>	1 single voice point (RJ45) (telephone extension) shall be provided. Location to be agreed with the school authority. Analogue telephone handset shall be provided.	
<b>Dado/Skirting Trunking</b>	Aluminium (standard colour).	
<b>Fire Alarm</b>	Fire alarm system extended into this area if deemed necessary and required by fire risk assessment, overall fire strategy or local Building Control requirement.	
<b>Intruder Alarm</b>	Intruder alarm system extended into this area if deemed necessary and required by security strategy.	
<b>Class Change</b>	Class change system extended into this area if deemed necessary and required in order to achieve necessary sound level.	
<b>TV Terminal</b>	1 television aerial point shall be provided. Exact position to be agreed with school authority.	
<b>Interactive White Board (IWB)</b>	Not Required.	
<b>Ceiling Mounted Projector</b>	Not Required.	
<b>Clock Installation</b>	1 No battery operated clock shall be provided.	

<b>Mechanical</b>	<b>Requirements</b>
<b>Room Temperature °C</b>	Room temperature shall be 18°C.
<b>Room Temperature Optimum Start Accuracy – Heating by Radiators and Air Handling</b>	The desired room temperature is to be achieved within 30 minutes of occupation start on 60% of occupied days in the heating season, except where self-regulating under-floor heating is the main heating source.
<b>Room Heating Response to Internal Gains</b>	Sub-zoning shall be standard provision for each resource area and should achieve the desired room temperature response within 20 minutes controlled through the BEMS system.
<b>Heating Controls Location and Authority</b>	No room occupant control over heating temperature, start time, finish time, regular day omission, holiday days omit. All these controls to be centrally operable by facilities management. (BEMS System.)
<b>Heating Zoning</b>	Individual zoned heating shall be provided to each north and south orientation, of each block.
<b>Room Ventilation</b>	In accordance with requirements stated above, statutory requirements and CIBSE, BB87, BB101, BB93 guidance. Noise from mechanical ventilation/noise transfer from other internal and external spaces, must not cause the required background noise level to be exceeded.
<b>Heating</b>	To maintain the above temperature, by compensated, optimised and sequenced controls.
<b>Potable Water Services</b>	Provided to sink unit, separate tap, drinking water sign, (Foundation and Key Stage 1 only).
<b>Hot Water Services</b>	Provided to sink unit, via blending valve to separate tap, (Foundation and Key Stage 1 only).
<b>Above Ground Drainage</b>	Waste connection to sink unit if provided.
<b>Cooling</b>	None

## 6.3 MULTI-PURPOSE HALL

Planning	Requirements
<b>Room Activities</b>	The Multi-Purpose Hall is primarily used for teaching and learning of Physical Education, assembly, group activities, and in some schools, dining, including those taking packed lunches. It may also be used for teaching of other subjects across the curriculum. After school activities either connected with the school or the local community should also be considered.
<b>Size</b>	For schools of up to 20 classrooms the floor area shall be 160 m <sup>2</sup> . For schools of 21 classrooms and upward there shall be 2 No Multi-Purpose Halls, 1 No at 160 m <sup>2</sup> and 1 No at 110 m <sup>2</sup> . A clear height of 4.250 m is considered adequate, although the Department may consider approval to a greater height depending on local circumstances.
<b>Location</b>	The hall should be positioned in such a way that it is easily accessible from the main entrance and pupil changing facilities, with pupil, disabled and adult toilet provision nearby. There should be no circulation routes through the hall. The hall could be designed in conjunction with an outside courtyard area so that both areas could be used as teaching spaces in periods of good weather. Direct access is required to PE Equipment Store, Mat Store, Stage Store, and Adult Chair Store and where also used for dining purposes the Dining Chair Store and Kitchen. Location of the Hall should allow for after hours' use (which may include the local community) without having to open the main part of the school to gain access. Where a second Multi-Purpose Hall is provided in schools of 21 classrooms and above, it is preferable but not essential for the 2 halls to be adjacent. Each Multi-Purpose Hall must have its own suite of stores (ie PE, Stage, Mat and Adult Chair).
<b>Layout</b>	The hall should be rectangular in shape and include built-in PE climbing apparatus located within a suitable wall recess, within the building contract. Where shared Multi-Purpose Hall/Dining is provided (to which a Kitchen/Servery is attached) provision should where possible be made for adapting this area to dining only and providing a separate Multi-Purpose Hall should the school be enlarged to such a size to warrant this. A small alcove shall be provided for storage of a piano (if required by the school). It is advantageous if one end wall is sufficiently clear of doorways, heating and electrical equipment, etc to facilitate placement of portable staging, and of a suitable material for the bouncing of balls. For Health and Safety reasons external corners, sharp angles and projections shall be avoided or shall be appropriately treated. Radiators where provided at low level shall be located within wall recesses.
<b>General Guidance</b>	Good guidance on design approach is available from the DfES Building Bulletins, especially BB87 Environment, BB90 Lighting, BB93 Acoustics and BB101 Ventilation. This is in addition to publications from professional institutions associated with building design, construction and specification: eg CIBSE, RICS, RSUA and RIBA.
<b>Internal Environment</b>	<b>Requirements</b>
<b>Acoustic Performance</b>	A satisfactory acoustic quality is required and the hall should be suitably sound insulated either by location or structure. It is recommended that the acoustic performance of the Multi-Purpose Hall shall be broadly in accordance with the DfES Building Bulletin 93. For further detail refer to Item 5.11.

<b>Daylighting</b>	Good natural lighting is essential although the potentially disruptive effects of glare and solar gain must also be carefully considered and addressed. Dark corners are to be avoided. See also WINDOWS.
<b>Building Fabric</b>	<b>Requirements</b>
<b>Walls</b>	Plain and light in tone. Smooth and free from projections and of a material that does not mark easily. Careful consideration should be given to the need for satisfactory acoustics. See also LAYOUT.
<b>Floors</b>	Sealed hardwood strip flooring, vinyl or any suitable hard-wearing non-slip material. Floor markings for organised games are not necessary, although the Department may give approval if required for out-of-school activities. Dark, highly polished floors must be avoided.
<b>Ceiling</b>	Light in tone and of a robust construction, not necessarily suspended. Consideration must be given to the need for satisfactory acoustics. A clear height of 4.250 m is considered adequate.
<b>Doors</b>	Entrance and exit doors should be sufficient in number and distribution to ensure rapid exit in emergency. They should preferably be double-leaf, single-swing opening outwards but not projecting dangerously into a corridor. Appropriate exit signs should be provided as required. Doors to corridors or lobbies shall have clear glazed panels of suitable height for both pupils and teachers.
<b>Windows</b>	Roof, clerestory or high level openable windows may provide the main daylighting, but if possible some normal level openable windows should be included. The provision of high and low level opening sashes will optimise natural ventilation. The provision of dim-out curtains or blinds will be required. Any glazing below 800 mm from floor must comply with the requirements of the current Building Regulations.
<b>Ironmongery</b>	Doors lockable with emergency release from inside. Windows lockable with stays or restrictors used on all opening sashes both high and low level.
<b>Fixtures and Fittings</b>	Built-in climbing equipment (climbing frames and climbing ropes) suitable for children should be provided. This should be suitably located to enable the items to be used together, and of a type which can be folded back against the wall within a suitable recess when not in use. See also LAYOUT. A proprietary designed platform of approximately 20 m <sup>2</sup> shall be provided. This should be designed in portable stackable sections of various heights. Adequate separate storage shall be provided, see 6.16 STAGE STORE.
<b>Storage</b>	Refer to separate Room Data Sheet, 6.13 PE Equipment Store, 6.14 Mat Store, 6.15 Adult Chair Store, 6.16 Stage Store.

<b>MECHANICAL AND ELECTRICAL SERVICE PROVISIONS</b>		<b>6.3 MULTI-PURPOSE HALL</b>
<b>Electrical</b>	<b>Requirements</b>	
<b>General Lighting</b>	A lighting intensity of 300 lux shall be provided at floor level. The need to avoid glare should be considered when selecting and placing fittings. The light fittings should be robust and suitably protected from any potential damage which could possibly occur from school activities which are to take place within the Multi-Purpose Hall. They should be positioned so that they do not interfere with the movement of ropes or beams which swing out. The light fittings should be rigidly fixed to the building structure. The fittings should be circuited and switched in such a manner as to provide flexibility. Energy efficient light fittings should be used in this area which provide good colour rendering properties, avoid glare and are suitable for school activities.	

<b>Lighting Control System</b>	Not Required.
<b>Emergency Lighting</b>	Emergency lighting shall be provided in this area.
<b>Small Power</b>	6 double general purpose sockets shall be provided around the hall for the use of various items of equipment. Two of these sockets shall be located at an appropriate height close to where a portable stage might be positioned.
<b>ICT Provision/Data Outlets</b>	Not Required.
<b>ICT Provision/Voice Outlets</b>	Not Required.
<b>Dado/Skirting Trunking</b>	Outlets shall be recessed into building fabric or mounted into aluminium trunking (standard colour), only if agreeable to the schools representative. Provision of aluminium skirting/dado trunking in this area shall depend on normal school activities within this area not being affected by its installation.
<b>Fire Alarm</b>	Fire alarm system extended into this area if deemed necessary and required by fire risk assessment, overall fire strategy or local Building Control requirement.
<b>Intruder Alarm</b>	Intruder alarm system extended into this area if deemed necessary and required by security strategy.
<b>Class Change</b>	Class change system extended into this area if deemed necessary and required in order to achieve necessary sound level.
<b>TV Terminal</b>	1 television aerial point shall be provided. Exact position to be agreed with school authority.
<b>Clock Installation</b>	1 No battery operated clock shall be provided. Clock should be of a suitable size for this area.
<b>Stage Lighting</b>	<p>A stage lighting system shall be provided. The installation shall comprise 1 internally wired barrel complete with 15 amp SP socket outlet. A supporting grid of steel or aluminium shall be provided if required.</p> <p>The following is considered to be sufficient to meet normal requirements:</p> <ol style="list-style-type: none"> <li>a. One lighting barrel in front of the stage (front of house) (length to suit).</li> <li>b. Two control positions 1 at the rear of the hall and dimmer packs with associated cord patch units.</li> </ol> <p>The rating of the power supply will depend on the total load of the system, but should be not less than 30 amp SPN per dimmer ack. If 2 or more 30 amp circuits are required they should be derived from the same place. The control desk, dimmer packs and cord patch units should be specified for the number of lighting barrels and the number and rating of lanterns to be used.</p>
<b>Sound System</b>	<p>A public address stereo sound system shall be provided. All equipment necessary for the safe, efficient and correct operation of the system shall be provided, ie amplifier, cabling, microphone, speakers, etc. Speakers should be provided with suitable protection from school activities such as ball sports which may take place within this area.</p> <p>Flush jack points shall be provided for connecting the audio equipment, microphone and associated speakers to the microphone/speaker cabling system that shall be installed in a dedicated concealed conduit system. The jack sockets shall incorporate hinged covers and be adjacent to a double socket outlet.</p>
<b>Induction Loop</b>	An induction loop system shall be provided within this area to enhance the sound quality for hearing-aid users entering this area.

<b>Mechanical</b>	<b>Requirements</b>
<b>Room Temperature °C</b>	Room temperature shall be 18°C.
<b>Room Temperature Optimum Start Accuracy – Heating by Radiators and Air Handling</b>	The desired room temperature is to be achieved within 30 minutes of occupation start on 60% of occupied days in the heating season, except where self-regulating under-floor heating is the main heating source.
<b>Room Heating Response to Internal Gains</b>	Multi-Purpose Hall should achieve the desired room temperature response within 20 minutes controlled through the BEMS system.
<b>Heating Controls Location and Authority</b>	No room occupant control over heating temperature, start time, finish time, regular day omission, holiday days omit. All these controls to be centrally operable by facilities management. (BEMS System.)
<b>Heating Zoning</b>	Individual zoned heating shall be provided.
<b>Room Ventilation</b>	In accordance with requirements stated above, statutory requirements and CIBSE, BB87, BB101, BB93 guidance. Noise from mechanical ventilation/noise transfer from other internal and external spaces, must not cause the required background noise level to be exceeded.
<b>Heating</b>	To maintain the above temperature, by compensated, optimised and sequenced controls.
<b>Potable Water Services</b>	None
<b>Above Ground Drainage</b>	None
<b>Cooling</b>	None
<b>CO<sub>2</sub> Monitoring</b>	Monitoring of CO <sub>2</sub> will be required.

## 6.4 LIBRARY FACILITIES

Planning	Requirements
<b>General</b>	<p>In schools with less than 7 classrooms it is desirable that the Library facilities should be contained within a resource area or at most be divided between 2 resource areas.</p> <p>To facilitate this provision within resource areas, some fixed adjustable shelving should be provided, see FURNITURE AND FITTINGS below. The location should have good natural light and access to socket outlets. Some flexibility of layout is achieved with the use of movable screen dividers which can also be used for display.</p> <p>For schools of 7 classrooms and above, a separate Library is considered more appropriate.</p>
<b>Room Activities</b>	<p>The Library shall be comfortable and inviting and should enable pupils and teachers to work formally and informally by providing a variety of opportunities and educational resources including traditional reading and reference material and also IT facilities.</p> <p>The design of the Library shall be sufficiently flexible to cater for a wide range of teaching and learning activities covering all age groups. The layout of furniture and shelving shall also be carefully considered to offer as much flexibility of use as possible.</p>
<b>Size</b>	Where a separate Library is scheduled (ie 7 classrooms and above) it shall be designed to accommodate an entire class group and shall be 60 m <sup>2</sup> .
<b>Location</b>	Conveniently located to teaching areas preferably linked to the upper school (ie Key Stage 2) and ideally in a quiet location.
<b>Layout</b>	The shape should be consistent with the ability to achieve good natural light.
<b>General Guidance</b>	Good guidance on design approach is available from the DfES Building Bulletins, especially BB87 Environment, BB90 Lighting, BB93 Acoustics and BB101 Ventilation. This is in addition to publications from professional institutions associated with building design, construction and specification: eg CIBSE, RICS, RSUA and RIBA.
Internal Environment	Requirements
<b>Acoustic Performance</b>	It is recommended that the acoustic performance of the Library shall be broadly in accordance with the DfES Building Bulletin 93. For further detail refer to Item 5.11.
<b>Daylighting</b>	<p>The level of daylight should be as good as possible with as even distribution as possible throughout each room. Excessive glazing can occupy useful wall display space and can be responsible for the discomforting effects of glare, heat loss and solar gain. See also WINDOWS.</p> <p>Suitable dim-out curtains or blinds should be provided to windows likely to receive direct sunlight during school hours. Full black-out is not required.</p> <p>For guidance purposes a preferred minimum daylight factor shall be 3% with a uniformity ratio better than 0.4.</p>
Building Fabric	Requirements
<b>Walls</b>	Plaster, smooth surface and capable of being easily cleaned. Wall structure capable of accepting fixings for shelves and fittings.
<b>Floors</b>	Non-slip, warm, resilient and easily cleaned non-woven anti-static carpet. Maintenance must be minimised by careful choice of colour.
<b>Ceiling</b>	Light in tone, desirably acoustically absorbent. Minimum floor to ceiling height = 2.9 m. Where the profile of the ceiling is sloped, the minimum may be reduced. Consideration should be given to the scale of the room and energy usage.

<b>Doors</b>	The Library door should have a glazed panel(s) at suitable height for both pupils and teachers. Glass should be clear and to appropriate safety standard.
<b>Windows</b>	Good natural lighting, but arrangement of windows should be such as to ensure adequate wall space for shelving. A suitable arrangement could be to have windows on 1 wall with clerestory lighting above shelves on opposite wall. Windows on a southern facing wall should be avoided where possible since excessive sunlight is distracting to readers and harmful to books.
<b>Ironmongery</b>	Doors lockable and windows lockable with stays or restrictors used on all opening sashes both high and low level. Operation of opening windows must be safe for occupants.
<b>Fixtures and Fittings</b>	Shelving should be adjustable for height. Materials and construction should be sufficiently robust to prevent sagging. In the interests of safety, wood cladding should be provided for the exposed ends of any metal shelving. The overall height of shelving should be suitable for the age of the children using the Library. Average interval between shelves - 300 mm Minimum space below bottom shelf - 150 mm Depth of shelves - 220 mm A small proportion (approximately one-eighth) for reference should be situated near entrance and be 280 mm deep. Some display boarding to be provided, 3.0 m <sup>2</sup> minimum. Other fittings including storage units for hardware, storage trolleys, tables and chairs should be provided outside the building contract.
<b>Storage</b>	N/A

<b>MECHANICAL AND ELECTRICAL SERVICE PROVISIONS</b>		<b>6.4 LIBRARY FACILITIES</b>
<b>Electrical</b>	<b>Requirements</b>	
<b>General Lighting</b>	A lighting intensity of 300 lux shall be provided at the working plane. A combination of up/down lighting may be considered in order to create an evenly lit environment conducive to learning. The need to avoid glare should be considered when selecting and placing fittings. The lighting layout shall take into account arrangement of furniture and bookshelves. The bookshelves shall be adequately illuminated. The fittings should be circuited and switched in such a manner as to provide flexibility. Light fittings should incorporate high frequency control gear and lamps which provide good colour rendering properties.	
<b>Lighting Control System</b>	Not Required.	
<b>Emergency Lighting</b>	Not required unless part of a defined emergency escape route, local Building Control recommendation or deemed necessary by a risk assessment.	
<b>Small Power</b>	1 double cleaner's socket. 6 double computer socket outlets. (at positions agreed with the school authority).	
<b>ICT Provision/Data Outlets</b>	4 single data points (RJ45) shall be provided. Data points to be located at positions agreed with the school authority.	
<b>ICT Provision/Voice Outlets</b>	1 single voice point (RJ45) (telephone extension) shall be provided. (at a position agreed with the school authority). Analogue telephone handset shall be provided.	

<b>Dado/Skirting Trunking</b>	Aluminium (standard colour).
<b>Fire Alarm</b>	Fire alarm system extended into this area if deemed necessary and required by fire risk assessment, overall fire strategy or local Building Control requirement.
<b>Intruder Alarm</b>	Intruder alarm system extended into this area if deemed necessary and required by security strategy.
<b>Class Change</b>	Class change system extended into this area if deemed necessary and required in order to achieve necessary sound level.
<b>TV Terminal</b>	Not Required.
<b>Interactive White Board (IWB)</b>	Not Required.
<b>Ceiling Mounted Projector</b>	Not Required.
<b>Clock Installation</b>	1 No battery operated clock shall be provided.
<b>Mechanical</b>	<b>Requirements</b>
<b>Room Temperature °C</b>	Room temperature shall be 18°C.
<b>Room Temperature Optimum Start Accuracy – Heating by Radiators and Air Handling</b>	The desired room temperature is to be achieved within 30 minutes of occupation start on 60% of occupied days in the heating season, except where self-regulating under-floor heating is the main heating source.
<b>Room Heating Response to Internal Gains</b>	Sub-zoning shall be standard provision for the Library and should achieve the desired room temperature response within 20 minutes controlled through the BEMS system.
<b>Heating Controls Location and Authority</b>	No room occupant control over heating temperature, start time, finish time, regular day omission, holiday days omit. All these controls to be centrally operable by facilities management. (BEMS System.)
<b>Room Ventilation</b>	In accordance with requirements stated above, statutory requirements and CIBSE, BB87, BB101, BB93 guidance. Noise from mechanical ventilation/noise transfer from other internal and external spaces, must not cause the required background noise level to be exceeded.
<b>Heating</b>	To maintain the above temperature, by compensated, optimised and sequenced controls.
<b>Potable Water Services</b>	None
<b>Above ground Drainage</b>	None
<b>Cooling</b>	None
<b>CO<sub>2</sub> Monitoring</b>	Monitoring of CO <sub>2</sub> will be required.

## 6.5 SMALL GROUP/MEDICAL INSPECTION ROOM

Planning	Requirements
<b>Room Activities</b>	The small group room is recommended for the purpose of specific tuition, and for quiet/noisy activities by an individual or group. This may also include eg music tuition, peripatetic tuition, special needs tuition (SEN), occupational therapist and healthcare visits, etc. All schools must provide facilities for medical inspection. It is recommended that this be combined with the Group Room, when provided, or in the case of small schools, be located in another non-teaching area. As medical inspections are only being carried out periodically it is advantageous if built-in items and related loose furniture for this facility can be grouped at one end of the room.
<b>Size</b>	30 m <sup>2</sup> .
<b>Location</b>	A quiet situation, convenient to the administrative accommodation making use of the same waiting space and with toilet accommodation nearby. It should preferably be separate from the classrooms.
<b>Layout</b>	The shape should preferably be rectangular.
<b>General Guidance</b>	Good guidance on design approach is available from the DfES Building Bulletins, especially BB87 Environment, BB90 Lighting, BB93 Acoustics and BB101 Ventilation. This is in addition to publications from professional institutions associated with building design, construction and specification: eg CIBSE, RICS, RSUA and RIBA.
Internal Environment	Requirements
<b>Acoustic Performance</b>	It is recommended that the acoustic performance of the Small Group/Medical Inspection Room shall be broadly in accordance with the DfES Building Bulletin 93. For further detail refer to Item 5.11.
<b>Daylighting</b>	The distribution and quantity of daylight should be as good as possible. Dim-out curtains or blinds may be required. Preference should be given to normal windows as opposed to rooflights.
Building Fabric	Requirements
<b>Walls</b>	Plaster, smooth surface and capable of being easily cleaned. Wall structure capable of accepting fixings for shelves and fittings. Tiled splash-back to wash-hand basin.
<b>Floors</b>	Non-slip, warm, resilient and easily cleaned non-woven anti-static carpet. Maintenance must be minimised by careful choice of colour.
<b>Ceiling</b>	Light in tone. Minimum floor to ceiling height = 2.7 m.
<b>Doors</b>	Unglazed.
<b>Windows</b>	Windows should provide adequate and even daylighting. The provision of high and low level opening sashes will optimise natural ventilation. Windows should be capable of being adequately screened by curtains or blinds.
<b>Ironmongery</b>	Doors lockable and windows lockable with stays or restrictors used on all opening sashes both high and low level. Operation of opening windows must be safe for occupants.

<b>Fixtures and Fittings</b>	<p>The following should be provided:</p> <ol style="list-style-type: none"> <li>wash-hand basin with 450 mm high tiled splash-back;</li> <li>display boarding as for classrooms;</li> <li>lockable cupboard above wash-hand basin.</li> </ol> <p>Depending upon location and the organisation of the school, the first-aid equipment may be located in this room.</p> <p>The following should be provided outside the building contract:</p> <ol style="list-style-type: none"> <li>whiteboard (not interactive);</li> <li>folding bed;</li> <li>folding screens suitable for privacy, (permanent undressing cubicles should not be provided);</li> <li>desk with lockable drawers; and</li> <li>table, chairs and other appropriate loose furniture.</li> </ol>
<b>Storage</b>	N/A

<b>MECHANICAL AND ELECTRICAL SERVICE PROVISIONS</b>		<b>6.5 SMALL GROUP/MEDICAL INSPECTION ROOM</b>
<b>Electrical</b>	<b>Requirements</b>	
<b>General Lighting</b>	<p>A lighting intensity of 300 lux shall be provided at the working plane. A combination of up/down lighting may be considered.</p> <p>The need to avoid glare should be considered when selecting and placing fittings. The fittings should be circuited and switched in such a manner as to provide flexibility.</p> <p>Light fittings should incorporate high frequency control gear and lamps which provide good colour rendering properties.</p>	
<b>Lighting Control System</b>	Automatic lighting controls shall be installed in this area.	
<b>Emergency Lighting</b>	Not required unless this room is part of a defined emergency escape route, local Building Control recommendation or deemed necessary by a risk assessment.	
<b>Small Power</b>	<p>1 double cleaner's socket.</p> <p>2 double computer socket outlets. (at positions agreed with the school authority).</p>	
<b>ICT Provision/Data Outlets</b>	1 single data point (RJ45) shall be provided. (at a position agreed with the school authority).	
<b>ICT Provision/Voice Outlets</b>	<p>1 single voice point (RJ45) (telephone extension) shall be provided.</p> <p>Location to be agreed with the school authority.</p> <p>Analogue telephone handset shall be provided.</p>	
<b>Dado/Skirting Trunking</b>	Aluminium (standard colour).	
<b>Fire Alarm</b>	Fire alarm system extended into this area if deemed necessary and required by fire risk assessment, overall fire strategy or local Building Control requirement.	
<b>Intruder Alarm</b>	Intruder alarm system extended into this area if deemed necessary and required by security strategy.	
<b>Class Change</b>	Class change system extended into this area if deemed necessary and required in order to achieve necessary sound level.	
<b>TV Terminal</b>	Not Required.	
<b>Interactive White Board (IWB)</b>	Not Required.	
<b>Ceiling Mounted Projector</b>	Not Required.	
<b>Clock Installation</b>	1 No battery operated clock shall be provided.	

<b>Mechanical</b>	<b>Requirements</b>
<b>Room Temperature °C</b>	Room temperature shall be 18°C.
<b>Room Temperature Optimum Start Accuracy – Heating by Radiators and Air Handling</b>	The desired room temperature is to be achieved within 30 minutes of occupation start on 60% of occupied days in the heating season, except where self-regulating under-floor heating is the main heating source.
<b>Room Heating Response to Internal Gains</b>	Sub-zoning shall be standard provision for the Small Group/Medical Inspection Room and should achieve the desired room temperature response within 20 minutes controlled through the BEMS system.
<b>Heating Controls Location and Authority</b>	No room occupant control over heating temperature, start time, finish time, regular day omission, holiday days omit. All these controls to be centrally operable by facilities management. (BEMS System.)
<b>Room Ventilation</b>	In accordance with requirements stated above, statutory requirements and CIBSE, BB87, BB101, BB93 guidance. Noise from mechanical ventilation/noise transfer from other internal and external spaces, must not cause the required background noise level to be exceeded.
<b>Heating</b>	To maintain the above temperature, by compensated, optimised and sequenced controls.
<b>Potable Water Services</b>	Provided to wash-hand basin, separate tap, drinking water sign.
<b>Hot Water Services</b>	Provided to wash-hand basin, via blending valve to separate tap.
<b>Above Ground Drainage</b>	Waste connection to sink unit.
<b>Cooling</b>	None
<b>CO<sub>2</sub> Monitoring</b>	Monitoring of CO <sub>2</sub> will be required.

## 6.6 MULTI-PURPOSE ROOMS 1, 2 and 3

<b>Planning</b>	<b>Requirements</b>
<b>Room Activities</b>	These rooms are intended to serve a wide range of functions eg small group tuition, music, peripatetic support, special needs (SEN), occupational therapist and healthcare visits, etc. The smaller rooms may also be used for parent or staff interview.
<b>Size</b>	Multi-Purpose Room 1 – 35 m <sup>2</sup> , Multi-Purpose Rooms 2 and 3 – 15 m <sup>2</sup> . It should be noted that whilst the number and size of Multi-Purpose Rooms has been identified, the Department of Education will consider minor adjustment if proposed by the school authority. Combining the areas to create a single room will not be acceptable.
<b>Location</b>	Multi-Purpose Room 1 - Preferably associated with the accommodation for the senior pupils (ie Key Stage 2). Multi-Purpose Rooms 2 and 3 – convenient to a cluster of classrooms. Multi-Purpose Rooms should not be grouped together.
<b>Layout</b>	A broad rectangular shape is desirable.
<b>General Guidance</b>	Good guidance on design approach is available from the DfES Building Bulletins, especially BB87 Environment, BB90 Lighting, BB93 Acoustics and BB101 Ventilation. This is in addition to publications from professional institutions associated with building design, construction and specification: eg CIBSE, RICS, RSUA and RIBA.
<b>Internal Environment</b>	<b>Requirements</b>
<b>Acoustic Performance</b>	It is recommended that the acoustic performance of the Multi-Purpose Rooms shall be broadly in accordance with the DfES Building Bulletin 93. For further detail refer to Item 5.11.
<b>Daylighting</b>	The distribution and quantity of daylight should be as good as possible. Dim-out curtains or blinds may be required. Preference should be given to normal windows as opposed to rooflights.
<b>Building Fabric</b>	<b>Requirements</b>
<b>Walls</b>	Plaster, smooth surface and capable of being easily cleaned. Wall structure capable of accepting fixings for shelves and fittings.
<b>Floors</b>	Non-slip, warm, resilient and easily cleaned non-woven anti-static carpet. Maintenance must be minimised by careful choice of colour.
<b>Ceiling</b>	Light in tone. Minimum floor to ceiling height = 2.7 m. Where the profile of the ceiling is sloped, the minimum may be reduced.
<b>Doors</b>	Doors should have a glazed panel at suitable height for both pupils and teachers. Glass should be clear and to the appropriate safety standard.
<b>Windows</b>	Windows should provide adequate and even daylighting. The provision of high and low level opening sashes will optimise natural ventilation. Windows are considered preferable to rooflights.
<b>Ironmongery</b>	Doors lockable and windows lockable with stays or restrictors used on all opening sashes both high and low level. Operation of opening windows must be safe for occupants.
<b>Fixtures and Fittings</b>	An interactive whiteboard and generous area of display boarding is required in Multi-Purpose Room 1 only. Loose furniture as required provided outside the building contract.
<b>Storage</b>	N/A

<b>MECHANICAL AND ELECTRICAL SERVICE PROVISIONS</b>		<b>6.6 MULTI-PURPOSE ROOMS 1, 2 AND 3</b>
<b>Electrical</b>	<b>Requirements</b>	
<b>General Lighting</b>	A lighting intensity of 300 lux shall be provided at the working plane. A combination of up/down lighting may be considered in order to create an evenly lit environment conducive to learning. The need to avoid glare should be considered when selecting and placing fittings. The fittings should be circuited and switched in such a manner as to provide flexibility. Light fittings should incorporate high frequency control gear and lamps which provide good colour rendering properties.	
<b>Lighting Control System</b>	Automatic lighting controls shall be installed in this area.	
<b>Emergency Lighting</b>	Not required unless part of a defined emergency escape route, local Building Control recommendation or deemed necessary by a risk assessment.	
<b>Small Power</b>	1 double cleaner's socket. 6 double computer socket outlets. (1 at skirting level at the teacher's end of the room). (5 at dado level elsewhere at positions agreed with the school authority).	
<b>ICT Provision/Data Outlets</b>	2 single data points (RJ45) shall be provided. Data points to be located at positions agreed with the school authority.	
<b>ICT Provision/Voice Outlets</b>	1 single voice point (RJ45) (telephone extension) shall be provided. Location - teacher's end of the room. Wall mounted standard analogue telephone handset shall be provided.	
<b>Dado/Skirting Trunking</b>	Aluminium (standard colour).	
<b>Fire Alarm</b>	Fire alarm system extended into this area if deemed necessary and required by fire risk assessment, overall fire strategy or local Building Control requirement.	
<b>Intruder Alarm</b>	Intruder alarm system extended into this area if deemed necessary and required by security strategy.	
<b>Class Change</b>	Class change system extended into this area if deemed necessary and required in order to achieve necessary sound level.	
<b>TV Terminal</b>	1 television aerial point shall be provided. Exact position to be agreed with school authority.	
<b>Interactive White Board (IWB)</b>	1 No provided (Multi-Purpose Room 1 only) and located at a position agreed with the school authority. All power and data point requirements necessary for operation of the IWB shall be provided. IWB and projector shall be set-up, interfaced and arranged to operate as a combined system.	
<b>Ceiling Mounted Projector</b>	1 No provided (Multi-Purpose Room 1 only) and located at a position agreed with the school authority. All power and data point requirements necessary for operation of the projector shall be provided. Projector and IWB shall be set-up, interfaced and arranged to operate as a combined system.	
<b>Clock Installation</b>	1 No battery operated clock shall be provided.	
<b>Mechanical</b>	<b>Requirements</b>	
<b>Room Temperature °C</b>	Room temperature shall be 18°C.	
<b>Room Temperature Optimum Start Accuracy – Heating by Radiators and Air Handling</b>	The desired room temperature is to be achieved within 30 minutes of occupation start on 60% of occupied days in the heating season. Except where self-regulating under-floor heating is the main heating source.	

<b>Room Heating Response to Internal Gains</b>	Sub-zoning shall be standard provision for each Multi-Purpose Room and should achieve the desired room temperature response within 20 minutes controlled through the BEMS system.
<b>Heating Controls Location and Authority</b>	No room occupant control over heating temperature, start time, finish time, regular day omission, holiday days omit. All these controls to be centrally operable by facilities management. (BEMS System.)
<b>Room Ventilation</b>	In accordance with requirements stated above, statutory requirements and CIBSE, BB87, BB101, BB93 guidance. Noise from mechanical ventilation/noise transfer from other internal and external spaces, must not cause the required background noise level to be exceeded.
<b>Heating</b>	To maintain the above temperature, by compensated, optimised and sequenced controls.
<b>Potable Water Services</b>	None
<b>Above Ground Drainage</b>	None
<b>Cooling</b>	None
<b>CO<sub>2</sub> Monitoring</b>	Monitoring of CO <sub>2</sub> will be required.

## 6.7 STAFF ROOM

<b>Planning</b>	<b>Requirements</b>
<b>Room Activities</b>	To serve as a focal point for all staff including peripatetic and support staff. To provide facilities for discussion and marking homework. In schools of 6 classrooms or less the Staff Room may also be used as a small group room with medical inspection facility.
<b>Size</b>	Varies depending on school size, refer to the Schedule of Accommodation, Section 3b for detail, (sample included at Appendix 3).
<b>Location</b>	Easily accessible from the main entrance and convenient to the office(s). Preferably located so as to provide supervision of the main playground. Reasonably close to the Staff Toilets.
<b>Layout</b>	Preferably rectangular with a minimum width of 2.4 m.
<b>General Guidance</b>	Good guidance on design approach is available from the DfES Building Bulletins, especially BB87 Environment, BB90 Lighting, BB93 Acoustics and BB101 Ventilation. This is in addition to publications from professional institutions associated with building design, construction and specification: eg CIBSE, RICS, RSUA and RIBA.
<b>Internal Environment</b>	<b>Requirements</b>
<b>Acoustic Performance</b>	It is recommended that the acoustic performance of the Staff Room shall be broadly in accordance with the DfES Building Bulletin 93. For further detail refer to Item 5.11.
<b>Daylighting</b>	The distribution and quantity of daylight should be as good as possible. Dim-out curtains or blinds may be required. Normal windows are preferred to high level windows or rooflights, with a view of the playground or entrance desirable while seated.
<b>Building Fabric</b>	<b>Requirements</b>
<b>Walls</b>	Plaster, smooth surface and capable of being easily cleaned. Wall structure capable of accepting fixings for shelves and fittings. Tiled splash-back to sink unit.
<b>Floors</b>	Non-slip, warm, resilient and easily cleaned non-woven anti-static carpet. Maintenance must be minimised by careful choice of colour. It is recommended that the immediate area around the sink should be a continuous section of non-slip vinyl finish, ideally extended to skirting height.
<b>Ceiling</b>	Light in tone. Minimum floor to ceiling height = 2.4 m.
<b>Doors</b>	Unglazed.
<b>Windows</b>	Windows should provide adequate and even daylighting. Windows are considered preferable to rooflights. The provision of high and low level opening sashes will optimise natural ventilation. Windows should be capable of being adequately screened by curtains or blinds.
<b>Ironmongery</b>	Doors lockable and windows lockable with stays or restrictors used on all opening sashes both high and low level. Operation of opening windows must be safe for occupants.

<b>Fixtures and Fittings</b>	<p>The room should have a pleasant comfortable atmosphere. The following should be provided:</p> <ol style="list-style-type: none"> <li>adequate display boarding as classrooms at adults' height;</li> <li>shelving and pigeon holes as considered necessary by the school;</li> <li>a double drainer sink unit with some associated high and low level cupboarding and facilities for tea/coffee making; and</li> <li>coat hanging facilities.</li> </ol> <p>Tables and chairs for study purposes, easy chairs and other appropriate loose furniture should be provided outside the building contract.</p> <p>If the Staff Room or other non-teaching space is also to be used for medical inspection, first-aid equipment and appropriate furniture and fittings should be provided, see also 6.5 SMALL GROUP/MEDICAL INSPECTION ROOM.</p>
<b>Storage</b>	N/A

<b>MECHANICAL AND ELECTRICAL SERVICE PROVISIONS</b>		6.7 STAFF ROOM
<b>Electrical</b>	<b>Requirements</b>	
<b>General Lighting</b>	<p>A lighting intensity of 300 lux shall be provided at the working plane. A combination of up/down lighting may be considered in order to create an informal and relaxing environment.</p> <p>The need to avoid glare should be considered when selecting and placing fittings. The fittings should be circuited and switched in such a manner as to provide flexibility. Light fittings should incorporate high frequency control gear and lamps which provide good colour rendering properties.</p>	
<b>Lighting Control System</b>	Automatic lighting controls shall be installed in this area.	
<b>Emergency Lighting</b>	Not required unless part of a defined emergency escape route, local Building Control recommendation or deemed necessary by a risk assessment.	
<b>Small Power</b>	<p>1 double cleaner's socket.</p> <p>3 double computer socket outlets (at positions agreed with the school's representative).</p> <p>Power points as required for domestic type Kitchen equipment, (supplied by school) ie fridge, kettle, microwave, etc.</p>	
<b>ICT Provision/Data Outlets</b>	<p>3 single data points (RJ45) shall be provided.</p> <p>1 single data point shall be located beside each double computer socket outlet at positions agreed with the school's representative.</p>	
<b>ICT Provision/Voice Outlets</b>	<p>1 single voice point (RJ45) (telephone extension) shall be provided at position agreed with the school's representative.</p> <p>Wall mounted standard analogue telephone handset shall be provided.</p>	
<b>Dado/Skirting Trunking</b>	Aluminium (standard colour).	
<b>Fire Alarm</b>	Fire alarm system extended into this area if deemed necessary and required by fire risk assessment, overall fire strategy or local Building Control requirement.	
<b>Intruder Alarm</b>	Intruder alarm system extended into this area if deemed necessary and required by security strategy.	
<b>Class Change</b>	Class change system extended into this area if deemed necessary and required in order to achieve necessary sound level.	
<b>TV Terminal</b>	<p>1 television aerial point shall be provided.</p> <p>Exact position to be agreed with school representative.</p>	
<b>Interactive White Board (IWB)</b>	Not Required.	

<b>Ceiling Mounted Projector</b>	Not Required.
<b>Clock Installation</b>	1 No battery operated clock shall be provided.
<b>Mechanical</b>	<b>Requirements</b>
<b>Room Temperature °C</b>	Room temperature shall be 18°C.
<b>Room Temperature Optimum Start Accuracy – Heating by Radiators and Air Handling</b>	The desired room temperature is to be achieved within 30 minutes of occupation start on 60% of occupied days in the heating season, except where self-regulating under-floor heating is the main heating source.
<b>Room Heating Response to Internal Gains</b>	Sub-zoning shall be standard provision for the Staff Room and should achieve the desired room temperature response within 20 minutes controlled through the BEMS system.
<b>Heating Controls Location and Authority</b>	No room occupant control over heating temperature, start time, finish time, regular day omission, holiday days omit. All these controls to be centrally operable by facilities management. (BEMS System.)
<b>Room Ventilation</b>	In accordance with requirements stated above, statutory requirements and CIBSE, BB87, BB101, BB93 guidance. Noise from mechanical ventilation/noise transfer from other internal and external spaces, must not cause the required background noise level to be exceeded.
<b>Heating</b>	To maintain the above temperature, by compensated, optimised and sequenced controls.
<b>Potable Water Services</b>	Provided to sink unit, separate tap, drinking water sign.
<b>Hot Water Services</b>	Provided to sink unit, via blending valve to separate tap.
<b>Above Ground Drainage</b>	Waste connection to sink unit.
<b>Cooling</b>	None
<b>CO<sub>2</sub> Monitoring</b>	Monitoring of CO <sub>2</sub> will be required.

## 6.8 PRINCIPAL'S OFFICE

<b>Planning</b>	<b>Requirements</b>
<b>Room Activities</b>	Private Office.
<b>Size</b>	Area – 15 m <sup>2</sup> (up to 6–classbase), 20 m <sup>2</sup> (7–classbase and above)
<b>Location</b>	Directly accessible from the main entrance and preferably adjacent to the General Office, possibly sharing the waiting space with the Small Group/MI Room where provided. Access door may be provided between the Principal and General Offices. Good access to any separate Reprographics Room. Staff Toilet accommodation should be provided nearby.
<b>Layout</b>	A broad rectangle is preferred.
<b>General Guidance</b>	Good guidance on design approach is available from the DfES Building Bulletins, especially BB87 Environment, BB90 Lighting, BB93 Acoustics and BB101 Ventilation. This is in addition to publications from professional institutions associated with building design, construction and specification: eg CIBSE, RICS, RSUA and RIBA.
<b>Internal Environment</b>	<b>Requirements</b>
<b>Acoustic Performance</b>	It is recommended that the acoustic performance of the Principal's Office shall be broadly in accordance with the DfES Building Bulletin 93. For further detail refer to Item 5.11.
<b>Daylighting</b>	The distribution and quantity of daylight should be as good as possible. Dim-out curtains or blinds may be required. Preference should be given to normal windows as opposed to rooflights.
<b>Building Fabric</b>	<b>Requirements</b>
<b>Walls</b>	Plaster, smooth surface and capable of being easily cleaned. Wall structure capable of accepting fixings for shelves and fittings.
<b>Floors</b>	Non-slip, warm, resilient and easily cleaned non-woven anti-static carpet. Maintenance must be minimised by careful choice of colour.
<b>Ceiling</b>	Light in tone. Minimum floor to ceiling height = 2.4 m.
<b>Doors</b>	Unglazed.
<b>Windows</b>	Windows should provide adequate and even daylighting. The provision of high and low level opening sashes will optimise natural ventilation. Windows should be capable of being adequately screened by curtains or blinds.
<b>Ironmongery</b>	Doors lockable and windows lockable with stays or restrictors used on all opening sashes both high and low level. Operation of opening windows must be safe for occupants.
<b>Fixtures and Fittings</b>	Fittings, finishes and furniture should be comfortable, efficient and flexible. Adequate display boarding should be provided as for Staff Room, suitably located with regard to tall storage. Fitted work tops and built-in furniture are not considered necessary. Appropriate loose furniture, office storage, etc should be provided outside the building contract.
<b>Storage</b>	N/A

<b>MECHANICAL AND ELECTRICAL SERVICE PROVISIONS</b>		<b>6.8 PRINCIPAL'S OFFICE</b>
<b>Electrical</b>	<b>Requirements</b>	
<b>General Lighting</b>	A lighting intensity of 300 lux shall be provided at the working plane. A combination of up/down lighting may be considered. The need to avoid glare should be considered when selecting and placing fittings. The fittings should be circuited and switched in such a manner as to provide flexibility. Light fittings should incorporate high frequency control gear and lamps which provide good colour rendering properties.	
<b>Lighting Control System</b>	Automatic lighting controls shall be installed in this area.	
<b>Emergency Lighting</b>	Not required unless part of a defined emergency escape route, local Building Control recommendation or deemed necessary by a risk assessment.	
<b>Small Power</b>	1 double cleaner's socket. 3 double computer socket outlets. (at positions agreed with the school authority).	
<b>ICT Provision/Data outlets</b>	1 single data point (RJ45) shall be provided. (at a position agreed with the school authority).	
<b>ICT Provision/Voice Outlets</b>	1 single voice point (RJ45) (telephone extension) shall be provided. Location to be agreed with the school authority. Digital telephone handset shall be provided.	
<b>Dado/Skirting Trunking</b>	Aluminium (standard colour).	
<b>Fire Alarm</b>	Fire alarm system extended into this area if deemed necessary and required by fire risk assessment, overall fire strategy or local Building Control requirement.	
<b>Intruder Alarm</b>	Intruder alarm system extended into this area if deemed necessary and required by security strategy.	
<b>Class Change</b>	Class change system extended into this area if deemed necessary and required in order to achieve necessary sound level.	
<b>TV Terminal</b>	Not Required.	
<b>Interactive White Board (IWB)</b>	Not Required.	
<b>Ceiling Mounted Projector</b>	Not Required.	
<b>Clock Installation</b>	1 No battery operated clock shall be provided.	
<b>CCTV</b>	School CCTV viewing equipment may be located within this office or the Vice-Principal's Office. Permission should be sought from the school's representative as to which office is more suitable.	
<b>Mechanical</b>	<b>Requirements</b>	
<b>Room Temperature °C</b>	Room temperature shall be 18°C.	
<b>Room Temperature Optimum Start Accuracy – Heating by Radiators and Air Handling</b>	The desired room temperature is to be achieved within 30 minutes of occupation start on 60% of occupied days in the heating season, except where self-regulating under-floor heating is the main heating source.	
<b>Room Heating Response to Internal Gains</b>	Sub-zoning shall be standard provision for the Principal's Office and should achieve the desired room temperature response within 20 minutes controlled through the BEMS system.	

<b>Heating Controls Location and Authority</b>	No room occupant control over heating temperature, start time, finish time, regular day omission, holiday days omit. All these controls to be centrally operable by facilities management. (BEMS System.)
<b>Room Ventilation</b>	In accordance with requirements stated above, statutory requirements and CIBSE, BB87, BB101, BB93 guidance. Noise from mechanical ventilation/noise transfer from other internal and external spaces, must not cause the required background noise level to be exceeded.
<b>Heating</b>	To maintain the above temperature, by compensated, optimised and sequenced controls.
<b>Above Ground Drainage</b>	None
<b>Cooling</b>	None
<b>CO<sub>2</sub> Monitoring</b>	None

## 6.9 GENERAL OFFICE

<b>Planning</b>	<b>Requirements</b>
<b>Room Activities</b>	To act as an administration centre.
<b>Size</b>	Area – 15 m <sup>2</sup> .
<b>Location</b>	Directly accessible from the main entrance and preferably adjacent to the Principal's Office, possibly sharing the waiting space with the Small Group/MI Room where provided. Access door may be provided between the Principal and General Offices. Good access to any separate Reprographics Room. A reception/communication window shall be provided between the office and entrance lobby. Staff Toilet accommodation should be provided nearby.
<b>Layout</b>	A broad rectangle is preferred.
<b>General Guidance</b>	Good guidance on design approach is available from the DfES Building Bulletins, especially BB87 Environment, BB90 Lighting, BB93 Acoustics and BB101 Ventilation. This is in addition to publications from professional institutions associated with building design, construction and specification: eg CIBSE, RICS, RSUA and RIBA.
<b>Internal Environment</b>	<b>Requirements</b>
<b>Acoustic Performance</b>	It is recommended that the acoustic performance of the General Office shall be broadly in accordance with the DfES Building Bulletin 93. For further detail refer to Item 5.11.
<b>Daylighting</b>	The distribution and quantity of daylight should be as good as possible. Dim-out curtains or blinds may be required. Preference should be given to normal windows as opposed to rooflights.
<b>Building Fabric</b>	<b>Requirements</b>
<b>Walls</b>	Plaster, smooth surface and capable of being easily cleaned. Wall structure capable of accepting fixings for shelves and fittings.
<b>Floors</b>	Non-slip, warm, resilient and easily cleaned non-woven anti-static carpet. Maintenance must be minimised by careful choice of colour.
<b>Ceiling</b>	Light in tone. Minimum floor to ceiling height = 2.4 m.
<b>Doors</b>	The door should have a glazed panel at suitable height for both pupils and teachers. Glass should be clear and to appropriate safety standard.
<b>Windows</b>	Windows should provide adequate and even daylighting. The provision of high and low level opening sashes will optimise natural ventilation. Windows should be capable of being adequately screened by curtains or blinds.
<b>Ironmongery</b>	Doors lockable and windows lockable with stays or restrictors used on all opening sashes both high and low level. Operation of opening windows must be safe for occupants.
<b>Fixtures and Fittings</b>	Fittings, finishes and furniture should be comfortable, efficient and flexible. Adequate display boarding should be provided as for Staff Room, suitably located with regard to tall storage. Fitted work tops and built-in furniture are not considered necessary. Appropriate loose furniture, office storage, etc should be provided outside the building contract.
<b>Storage</b>	N/A

<b>MECHANICAL AND ELECTRICAL SERVICE PROVISIONS</b>		<b>6.9 GENERAL OFFICE</b>
<b>Electrical</b>	<b>Requirements</b>	
<b>General Lighting</b>	A lighting intensity of 300 lux shall be provided at the working plane. A combination of up/down lighting may be considered. The need to avoid glare should be considered when selecting and placing fittings. The fittings should be circuited and switched in such a manner as to provide flexibility. Light fittings should incorporate high frequency control gear and lamps which provide good colour rendering properties.	
<b>Lighting Control System</b>	Automatic lighting controls shall be installed in this area.	
<b>Emergency Lighting</b>	Not required unless this room is part of a defined emergency escape route local Building Control recommendation or deemed necessary by a risk assessment.	
<b>Small Power</b>	1 double cleaner's socket. 3 double computer socket outlets. (at positions agreed with the school authority).	
<b>ICT Provision/Data Outlets</b>	1 single data point (RJ45) shall be provided. (at a position agreed with the school authority).	
<b>ICT Provision/Voice Outlets</b>	1 single voice point (RJ45) (telephone extension) shall be provided. Location to be agreed with the school authority. Digital telephone handset shall be provided.	
<b>Dado/Skirting Trunking</b>	Aluminium (standard colour).	
<b>Fire Alarm</b>	Fire alarm system extended into this area if deemed necessary and required by fire risk assessment, overall fire strategy or local Building Control requirement.	
<b>Intruder Alarm</b>	Intruder alarm system extended into this area if deemed necessary and required by security strategy.	
<b>Class Change</b>	Class change system extended into this area if deemed necessary and required in order to achieve necessary sound level.	
<b>TV Terminal</b>	Not Required.	
<b>Interactive White Board (IWB)</b>	Not Required.	
<b>Ceiling Mounted Projector</b>	Not Required.	
<b>Induction Loop</b>	Induction loop system shall be provided to cover General Office reception desk. Normal speech by members of staff shall be transmitted on this system for pick-up around the immediate area of the reception desk.	
<b>Clock Installation</b>	1 No battery operated clock shall be provided.	
<b>Mechanical</b>	<b>Requirements</b>	
<b>Room Temperature °C</b>	Room temperature shall be 18°C.	
<b>Room Temperature Optimum Start Accuracy – Heating by Radiators and Air Handling</b>	The desired room temperature is to be achieved within 30 minutes of occupation start on 60% of occupied days in the heating season, except where self-regulating under-floor heating is the main heating source.	
<b>Room Heating Response to Internal Gains</b>	Sub-zoning shall be standard provision for General Office and should achieve the desired room temperature response within 20 minutes controlled through the BEMS system.	

<b>Heating Controls Location and Authority</b>	No room occupant control over heating temperature, start time, finish time, regular day omission, holiday days omit. All these controls to be centrally operable by facilities management. (BEMS System.)
<b>Room Ventilation</b>	In accordance with requirements stated above, statutory requirements and CIBSE, BB87, BB101, BB93 guidance. Noise from mechanical ventilation/noise transfer from other internal and external spaces, must not cause the required background noise level to be exceeded.
<b>Heating</b>	To maintain the above temperature, by compensated, optimised and sequenced controls.
<b>Cooling</b>	None
<b>CO<sub>2</sub> Monitoring</b>	None

## 6.10 VICE-PRINCIPAL'S OFFICE

<b>Planning</b>	<b>Requirements</b>
<b>Room Activities</b>	Private Office provided in schools of 15 classrooms and above.
<b>Size</b>	Area – 10 m <sup>2</sup> .
<b>Location</b>	Directly accessible from the main entrance if possible. Good access to any separate Reprographics Room is preferred if feasible. Staff Toilet accommodation should be provided nearby.
<b>Layout</b>	A broad rectangle is preferred.
<b>General Guidance</b>	Good guidance on design approach is available from the DfES Building Bulletins, especially BB87 Environment, BB90 Lighting, BB93 Acoustics and BB101 Ventilation. This is in addition to publications from professional institutions associated with building design, construction and specification: eg CIBSE, RICS, RSUA and RIBA.
<b>Internal Environment</b>	<b>Requirements</b>
<b>Acoustic Performance</b>	It is recommended that the acoustic performance of the Vice-Principal's Office shall be broadly in accordance with the DfES Building Bulletin 93. For further detail refer to Item 5.11.
<b>Daylighting</b>	The distribution and quantity of daylight should be as good as possible. Dim-out curtains or blinds may be required. Preference should be given to normal windows as opposed to rooflights.
<b>Building Fabric</b>	<b>Requirements</b>
<b>Walls</b>	Plaster, smooth surface and capable of being easily cleaned. Wall structure capable of accepting fixings for shelves and fittings.
<b>Floors</b>	Non-slip, warm, resilient and easily cleaned non-woven anti-static carpet. Maintenance must be minimised by careful choice of colour.
<b>Ceiling</b>	Light in tone. Minimum floor to ceiling height = 2.4 m.
<b>Doors</b>	Unglazed.
<b>Windows</b>	Windows should provide adequate and even daylighting. The provision of high and low level opening sashes will optimise natural ventilation. Windows should be capable of being adequately screened by curtains or blinds.
<b>Ironmongery</b>	Doors lockable and windows lockable with stays or restrictors used on all opening sashes both high and low level. Operation of opening windows must be safe for occupants.
<b>Fixtures and Fittings</b>	Fittings, finishes and furniture should be comfortable, efficient and flexible. Adequate display boarding should be provided as for Staff Room, suitably located with regard to tall storage. Fitted work tops and built-in furniture are not considered necessary. Appropriate loose furniture, office storage, etc should be provided outside the building contract.
<b>Storage</b>	N/A

<b>MECHANICAL AND ELECTRICAL SERVICE PROVISIONS</b>		<b>6.10 VICE-PRINCIPAL'S OFFICE</b>
<b>Electrical</b>	<b>Requirements</b>	
<b>General Lighting</b>	A lighting intensity of 300 lux shall be provided at the working plane. A combination of up/down lighting may be considered. The need to avoid glare should be considered when selecting and placing fittings. The fittings should be circuited and switched in such a manner as to provide flexibility. Light fittings should incorporate high frequency control gear and lamps which provide good colour rendering properties.	
<b>Lighting Control System</b>		
<b>Emergency Lighting</b>	Not required unless part of a defined emergency escape route, local Building Control recommendation or deemed necessary by a risk assessment.	
<b>Small Power</b>	1 double cleaner's socket. 3 double computer socket outlets. (at positions agreed with the school authority).	
<b>ICT Provision/Data Outlets</b>	1 single data point (RJ45) shall be provided. (at a position agreed with the school authority).	
<b>ICT Provision/Voice Outlets</b>	1 single voice point (RJ45) (telephone extension) shall be provided. Location to be agreed with the school authority. Digital telephone handset shall be provided.	
<b>Dado/Skirting Trunking</b>	Aluminium (standard colour).	
<b>Fire Alarm</b>	Fire alarm system extended into this area if deemed necessary and required by fire risk assessment, overall fire strategy or local Building Control requirement.	
<b>Intruder Alarm</b>	Intruder alarm system extended into this area if deemed necessary and required by security strategy.	
<b>Class Change</b>	Class change system extended into this area if deemed necessary and required in order to achieve necessary sound level.	
<b>TV Terminal</b>	Not Required.	
<b>Interactive White Board (IWB)</b>	Not Required.	
<b>Ceiling Mounted Projector</b>	Not Required.	
<b>Clock Installation</b>	1 No battery operated clock shall be provided.	
<b>CCTV</b>	School CCTV viewing equipment may be located within this office or alternatively the Principal's Office. Permission should be sought from the school authority as to which office is more suitable.	
<b>Mechanical</b>	<b>Requirements</b>	
<b>Room Temperature °C</b>	Room temperature shall be 18°C	
<b>Room Temperature Optimum Start Accuracy – Heating by Radiators and Air Handling</b>	The desired room temperature is to be achieved within 30 minutes of occupation start on 60% of occupied days in the heating season, except where self-regulating under-floor heating is the main heating source.	
<b>Room Heating Response to Internal Gains</b>	Sub-zoning shall be standard provision for the Vice-Principal's Office and should achieve the desired room temperature response within 20 minutes controlled through the BEMS system.	

<b>Heating Controls Location and Authority</b>	No room occupant control over heating temperature, start time, finish time, regular day omission, holiday days omit. All these controls to be centrally operable by facilities management. (BEMS System.)
<b>Room Ventilation</b>	In accordance with requirements stated above, statutory requirements and CIBSE, BB87, BB101, BB93 guidance. Noise from mechanical ventilation/noise transfer from other internal and external spaces, must not cause the required background noise level to be exceeded.
<b>Heating</b>	To maintain the above temperature, by compensated, optimised and sequenced controls.
<b>Potable Water Services</b>	None
<b>Above Ground Drainage</b>	None
<b>Cooling</b>	None
<b>CO<sub>2</sub> Monitoring</b>	None

## 6.11 CLASSROOM STORE

Planning	Requirements
<b>Room Activities</b>	Storage of all forms of learning material, pupils' project work, etc.
<b>Size</b>	Area – 5 m <sup>2</sup> .
<b>Location</b>	En suite to individual classrooms.
<b>Layout</b>	A broad rectangle is preferred. Combining adjoining stores is not favoured.
<b>General Guidance</b>	Good guidance on design approach is available from the DfES Building Bulletins, especially BB87 Environment, BB90 Lighting, BB93 Acoustics and BB101 Ventilation. This is in addition to publications from professional institutions associated with building design, construction and specification: eg CIBSE, RICS, RSUA and RIBA.
Internal Environment	Requirements
<b>Acoustic Performance</b>	It is recommended that the acoustic performance of the Classroom Store shall be broadly in accordance with the DfES Building Bulletin 93. For further detail refer to Item 5.11.
<b>Daylighting</b>	See WINDOWS.
Building Fabric	Requirements
<b>Walls</b>	Plaster, smooth surface and capable of being easily cleaned. Wall structure capable of accepting fixings for shelves and fittings.
<b>Floors</b>	Non-slip durable and easily cleaned vinyl floor covering. Maintenance must be minimised by careful choice of colour.
<b>Ceiling</b>	Light in tone. Minimum floor to ceiling height = 2.4 m.
<b>Doors</b>	Unglazed and opening outward directly into the classroom.
<b>Windows</b>	For security and storage reasons, windows should not be provided. Rooflights must not be provided.
<b>Ironmongery</b>	Doors to be lockable.
<b>Fixtures and Fittings</b>	Shelving should be adjustable for height and provided to all walls. Materials and construction should be sufficiently robust to prevent sagging. In the interests of safety, wood cladding should be provided for the exposed ends of any metal shelving. Average interval between shelves - 300 mm Minimum space below bottom shelf - 750 mm Depth of shelves - 300 mm Number of shelves per wall - 5 No 2 No walls to have 500 mm deep bottom shelf.
<b>Storage</b>	N/A

MECHANICAL AND ELECTRICAL SERVICE PROVISIONS		6.11 CLASSROOM STORE
Electrical	Requirements	
<b>General Lighting</b>	A lighting intensity of 200 lux shall be provided at floor level. Location and orientation of storage shelves shall be taken into account when positioning light fittings. Light fittings should incorporate high frequency control gear.	
<b>Lighting Control System</b>	Automatic lighting controls shall be installed in this area.	
<b>Emergency Lighting</b>	Not required unless this room is part of a defined emergency escape route local Building Control recommendation or deemed necessary by a risk assessment.	
<b>Small Power</b>	1 double cleaner's socket.	

<b>ICT Provision/Data Outlets</b>	Not Required.
<b>ICT Provision/Voice Outlets</b>	Not Required.
<b>Dado/Skirting Trunking</b>	Not Required.
<b>Fire Alarm</b>	Fire alarm system extended into this area if deemed necessary and required by fire risk assessment, overall fire strategy or local Building Control requirement.
<b>Intruder Alarm</b>	Intruder alarm system extended into this area if deemed necessary and required by security strategy.
<b>Class Change</b>	Class change system extended into this area if deemed necessary and required in order to achieve necessary sound level.
<b>TV Terminal</b>	Not Required.
<b>Interactive White Board (IWB)</b>	Not Required.
<b>Ceiling Mounted Projector</b>	Not Required.
<b>Clock Installation</b>	Not Required.
<b>Mechanical</b>	<b>Requirements</b>
<b>Room Temperature °C</b>	Room temperature shall be 15°C, to maintain the fabric of the building and the furniture or equipment therein.
<b>Room Temperature Optimum Start Accuracy – Heating by Radiators and Air Handling</b>	The desired room temperature is to be achieved within 30 minutes of occupation start on 60% of occupied days in the heating season, except where self-regulating under-floor heating is the main heating source.
<b>Room Heating Response to Internal Gains</b>	N/A
<b>Heating Controls Location and Authority</b>	No room occupant control over heating temperature, start time, finish time, regular day omission, holiday days omit. All these controls to be centrally operable by facilities management. (BEMS System.)
<b>Room Ventilation</b>	In accordance with requirements stated above, statutory requirements and CIBSE, BB87, BB101, BB93 guidance. Noise from mechanical ventilation/noise transfer from other internal and external spaces, must not cause the required background noise level to be exceeded.
<b>Heating</b>	To maintain the above temperature, by compensated, optimised and sequenced controls. Radiators or high level heating coils with TRV (Thermostatic Radiator Valves).

## 6.12 RESOURCE AREA STORE

<b>Planning</b>	<b>Requirements</b>
<b>Room Activities</b>	Storage of all forms of learning material, pupils' project work, etc.
<b>Size</b>	Area – 5 m <sup>2</sup> .
<b>Location</b>	En suite to individual Resource Area.
<b>Layout</b>	A broad rectangle is preferred.
<b>General guidance</b>	Good guidance on design approach is available from the DfES Building Bulletins, especially BB87 Environment, BB90 Lighting, BB93 Acoustics and BB101 Ventilation. This is in addition to publications from professional institutions associated with building design, construction and specification: eg CIBSE, RICS, RSUA and RIBA.
<b>Internal Environment</b>	<b>Requirements</b>
<b>Acoustic Performance</b>	It is recommended that the acoustic performance of the Resource Area Store shall be broadly in accordance with the DfES Building Bulletin 93. For further detail refer to Item 5.11.
<b>Daylighting</b>	See WINDOWS.
<b>Building Fabric</b>	<b>Requirements</b>
<b>Walls</b>	Plaster, smooth surface and capable of being easily cleaned. Wall structure capable of accepting fixings for shelves and fittings.
<b>Floors</b>	Non-slip durable and easily cleaned vinyl floor covering. Maintenance must be minimised by careful choice of colour.
<b>Ceiling</b>	Light in tone. Minimum floor to ceiling height = 2.4 m.
<b>Doors</b>	Unglazed and opening outward.
<b>Windows</b>	For security and storage reasons, windows should not be provided. Rooflights must not be provided.
<b>Ironmongery</b>	Doors to be lockable.
<b>Fixtures and Fittings</b>	Shelving should be adjustable for height and provided to all walls. Materials and construction should be sufficiently robust to prevent sagging. In the interests of safety, wood cladding should be provided for the exposed ends of any metal shelving. Average interval between shelves - 300 mm Minimum space below bottom shelf - 750 mm Depth of shelves - 300 mm Number of shelves per wall - 5 No 2 No walls to have 500 mm deep bottom shelf.
<b>Storage</b>	N/A

<b>MECHANICAL AND ELECTRICAL SERVICE PROVISIONS</b>		<b>6.12 RESOURCE AREA STORE</b>
<b>Electrical</b>	<b>Requirements</b>	
<b>General Lighting</b>	A lighting intensity of 200 lux shall be provided at floor level. Location and orientation of storage shelves shall be taken into account when positioning light fittings. Light fittings should incorporate high frequency control gear.	
<b>Lighting Control System</b>	Automatic lighting controls shall be installed in this area.	
<b>Emergency Lighting</b>	Not required unless this room is part of a defined emergency escape route local Building Control recommendation or deemed necessary by a risk assessment.	
<b>Small Power</b>	1 double cleaner's socket.	

<b>ICT Provision/Data Outlets</b>	Not Required.
<b>ICT Provision/Voice Outlets</b>	Not Required.
<b>Dado/Skirting Trunking</b>	Not Required.
<b>Fire Alarm</b>	Fire alarm system extended into this area if deemed necessary and required by fire risk assessment, overall fire strategy or local Building Control requirement.
<b>Intruder Alarm</b>	Intruder alarm system extended into this area if deemed necessary and required by security strategy.
<b>Class Change</b>	Class change system extended into this area if deemed necessary and required in order to achieve necessary sound level.
<b>TV Terminal</b>	Not Required.
<b>Interactive White Board (IWB)</b>	Not Required.
<b>Ceiling Mounted Projector</b>	Not Required.
<b>Clock Installation</b>	Not Required.
<b>Mechanical</b>	<b>Requirements</b>
<b>Room Temperature °C</b>	Room temperature shall be 15°C, to maintain the fabric of the building and the furniture or equipment therein.
<b>Room Temperature Optimum Start Accuracy – Heating by Radiators and Air Handling</b>	The desired room temperature is to be achieved within 30 minutes of occupation start on 60% of occupied days in the heating season, except where self-regulating under-floor heating is the main heating source.
<b>Room Heating Response to Internal Gains</b>	N/A
<b>Heating Controls Location and Authority</b>	No room occupant control over heating temperature, start time, finish time, regular day omission, holiday days omit. All these controls to be centrally operable by facilities management. (BEMS System.)
<b>Room Ventilation</b>	In accordance with requirements stated above, statutory requirements and CIBSE, BB87, BB101, BB93 guidance. Noise from mechanical ventilation/noise transfer from other internal and external spaces, must not cause the required background noise level to be exceeded.
<b>Heating</b>	To maintain the above temperature, by compensated, optimised and sequenced controls. Radiators or high level heating coils with TRV (Thermostatic Radiator Valves).

## 6.13 PE EQUIPMENT STORE

Planning	Requirements
<b>Room Activities</b>	Storage of Physical Education equipment.
<b>Size</b>	Area 15 m <sup>2</sup> .
<b>Location</b>	Opening solely and directly from the Multi-Purpose Hall.
<b>Layout</b>	A broad rectangle is preferred.
<b>General Guidance</b>	Good guidance on design approach is available from the DfES Building Bulletins, especially BB87 Environment, BB90 Lighting, BB93 Acoustics and BB101 Ventilation. This is in addition to publications from professional institutions associated with building design, construction and specification: eg CIBSE, RICS, RSUA and RIBA.
Internal Environment	Requirements
<b>Acoustic Performance</b>	It is recommended that the acoustic performance of the PE Equipment Store shall be broadly in accordance with the DfES Building Bulletin 93. For further detail refer to Item 5.11.
<b>Daylighting</b>	Not required. See WINDOWS.
Building Fabric	Requirements
<b>Walls</b>	Plain and light in tone. Smooth and free from projections and of a material that does not mark easily. Wall structure capable of accepting fixings for shelves and fittings.
<b>Floors</b>	Non-slip durable and easily cleaned vinyl floor covering to be laid level with flooring in Multi-Purpose Hall. Maintenance must be minimised by careful choice of colour.
<b>Ceiling</b>	Light in tone. Minimum floor to ceiling height = 2.4 m and not exceeding normal classroom height.
<b>Doors</b>	Unglazed double doors 2.0 m wide and opening outward.
<b>Windows</b>	For security and storage reasons, windows should not be provided. Rooflights must not be provided.
<b>Ironmongery</b>	Doors to be lockable and with recessed door furniture.
<b>Fixtures and Fittings</b>	Shelving to be 8.0 m long minimum and should be adjustable for height. Materials and construction should be sufficiently robust to prevent sagging. In the interests of safety, wood cladding should be provided for the exposed ends of any metal shelving. Average interval between shelves - 300 mm Minimum space below bottom shelf - 750 mm Depth of shelves - 300 mm Number of shelves per wall - 5 No 500 mm deep bottom shelf.
<b>Storage</b>	N/A

MECHANICAL AND ELECTRICAL SERVICE PROVISIONS		6.13 PE EQUIPMENT STORE
Electrical	Requirements	
<b>General Lighting</b>	A lighting intensity of 200 lux shall be provided at floor level. Location and orientation of storage shelves shall be taken into account when positioning light fittings. Light fittings should incorporate high frequency control gear.	
<b>Lighting Control System</b>	Automatic lighting controls shall be installed in this area.	
<b>Emergency Lighting</b>	Emergency lighting shall be provided in this area.	

<b>Small Power</b>	1 double cleaner's socket.
<b>ICT Provision/Data Outlets</b>	Not Required.
<b>ICT Provision/Voice Outlets</b>	Not Required.
<b>Dado/Skirting Trunking</b>	Not Required.
<b>Fire Alarm</b>	Fire alarm system automatic detection should be provided in this area in addition to other fire alarm equipment which may be required as part of the fire risk assessment, overall fire strategy or local Building Control requirement.
<b>Intruder Alarm</b>	Intruder alarm system extended into this area if deemed necessary and required by security strategy.
<b>Class Change</b>	Class change system extended into this area if deemed necessary and required in order to achieve necessary sound level.
<b>TV Terminal</b>	Not Required.
<b>Interactive White Board (IWB)</b>	Not Required.
<b>Ceiling Mounted Projector</b>	Not Required.
<b>Clock Installation</b>	Not Required.
<b>Mechanical</b>	<b>Requirements</b>
<b>Room Temperature °C</b>	Room temperature shall be 15°C, to maintain the fabric of the building and the furniture or equipment therein.
<b>Room Temperature Optimum Start Accuracy – Heating by Radiators and Air Handling</b>	The desired room temperature is to be achieved within 30 minutes of occupation start on 60% of occupied days in the heating season, except where self-regulating under-floor heating is the main heating source.
<b>Room Heating Response to Internal Gains</b>	N/A
<b>Heating Controls Location and Authority</b>	No room occupant control over heating temperature, start time, finish time, regular day omission, holiday days omit. All these controls to be centrally operable by facilities management. (BEMS System.)
<b>Room Ventilation</b>	In accordance with requirements stated above, statutory requirements and CIBSE, BB87, BB101, BB93 guidance. Noise from mechanical ventilation/noise transfer from other internal and external spaces, must not cause the required background noise level to be exceeded.
<b>Heating</b>	To maintain the above temperature, by compensated, optimised and sequenced controls. Radiators or high level heating coils with TRV (Thermostatic Radiator Valves).

## 6.14 MAT STORE

<b>Planning</b>	<b>Requirements</b>
<b>Room Activities</b>	Storage of floor mats used for Physical Education.
<b>Size</b>	Area – 10 m <sup>2</sup> .
<b>Location</b>	Opening solely and directly from the Multi-Purpose Hall, preferably at an external wall to facilitate natural ventilation.
<b>Layout</b>	A broad rectangle is preferred.
<b>General Guidance</b>	Good guidance on design approach is available from the DfES Building Bulletins, especially BB87 Environment, BB90 Lighting, BB93 Acoustics and BB101 Ventilation. This is in addition to publications from professional institutions associated with building design, construction and specification: eg CIBSE, RICS, RSUA and RIBA.
<b>Internal Environment</b>	<b>Requirements</b>
<b>Acoustic Performance</b>	It is recommended that the acoustic performance of the Mat Store shall be broadly in accordance with the DfES Building Bulletin 93. For further detail refer to Item 5.11.
<b>Daylighting</b>	Not required. See WINDOWS.
<b>Building Fabric</b>	<b>Requirements</b>
<b>Walls</b>	Plain and light in tone. Smooth and free from projections and of a material that does not mark easily.
<b>Floors</b>	Non-slip durable and easily cleaned vinyl floor covering to be laid level with flooring in Multi-Purpose Hall. Maintenance must be minimised by careful choice of colour.
<b>Ceiling</b>	Light in tone. Minimum floor to ceiling height = 2.4 m and not exceeding normal classroom height.
<b>Doors</b>	Unglazed double doors 2.0 m wide and opening outward.
<b>Windows</b>	For security and storage reasons, windows should not be provided. Rooflights must not be provided.
<b>Ironmongery</b>	Doors to be lockable and with recessed door furniture.
<b>Fixtures and Fittings</b>	N/A
<b>Storage</b>	N/A

<b>MECHANICAL AND ELECTRICAL SERVICE PROVISIONS</b>		<b>6.14 MAT STORE</b>
<b>Electrical</b>	<b>Requirements</b>	
<b>General Lighting</b>	A lighting intensity of 200 lux shall be provided at floor level. Light fittings should incorporate high frequency control gear.	
<b>Lighting Control System</b>	Automatic lighting controls shall be installed in this area.	
<b>Emergency Lighting</b>	Emergency lighting shall be provided in this area.	
<b>Small Power</b>	1 double cleaner's socket.	
<b>ICT Provision/Data Outlets</b>	Not Required.	
<b>ICT Provision/Voice Outlets</b>	Not Required.	
<b>Dado/Skirting Trunking</b>	Not Required.	

<b>Fire Alarm</b>	Fire alarm system automatic detection should be provided in this area in addition to other fire alarm equipment which may be required as part of the fire risk assessment, overall fire strategy or local Building Control requirement.
<b>Intruder Alarm</b>	Intruder alarm system extended into this area if deemed necessary and required by security strategy.
<b>Class Change</b>	Class change system extended into this area if deemed necessary and required in order to achieve necessary sound level.
<b>TV Terminal</b>	Not Required.
<b>Interactive White Board (IWB)</b>	Not Required.
<b>Ceiling Mounted Projector</b>	Not Required.
<b>Clock Installation</b>	Not Required.
<b>Mechanical</b>	<b>Requirements</b>
<b>Room Temperature °C</b>	Room temperature shall be 15°C, to maintain the fabric of the building and the furniture or equipment therein.
<b>Room Temperature Optimum Start Accuracy – Heating by Radiators and Air Handling</b>	The desired room temperature is to be achieved within 30 minutes of occupation start on 60% of occupied days in the heating season, except where self-regulating under-floor heating is the main heating source.
<b>Room Heating Response to Internal Gains</b>	N/A
<b>Heating Controls Location and Authority</b>	No room occupant control over heating temperature, start time, finish time, regular day omission, holiday days omit. All these controls to be centrally operable by facilities management. (BEMS System.)
<b>Room Ventilation</b>	In accordance with requirements stated above, statutory requirements and CIBSE, BB87, BB101, BB93 guidance. Noise from mechanical ventilation/noise transfer from other internal and external spaces, must not cause the required background noise level to be exceeded. High and low level wall vents provided when store located on external wall.
<b>Heating</b>	To maintain the above temperature, by compensated, optimised and sequenced controls. Radiators or high level heating coils with TRV (Thermostatic Radiator Valves).

## 6.15 ADULT CHAIR STORE

Planning	Requirements
<b>Room Activities</b>	Storage of chairs used for school plays, parent evenings or other educational functions, etc.
<b>Size</b>	Area – 10 m <sup>2</sup> .
<b>Location</b>	Opening solely and directly from the Multi-Purpose Hall.
<b>Layout</b>	A broad rectangle is preferred.
<b>General Guidance</b>	Good guidance on design approach is available from the DfES Building Bulletins, especially BB87 Environment, BB90 Lighting, BB93 Acoustics and BB101 Ventilation. This is in addition to publications from professional institutions associated with building design, construction and specification: eg CIBSE, RICS, RSUA and RIBA.
Internal Environment	Requirements
<b>Acoustic Performance</b>	It is recommended that the acoustic performance of the Adult Chair Store shall be broadly in accordance with the DfES Building Bulletin 93. For further detail refer to Item 5.11.
<b>Daylighting</b>	Not required. See WINDOWS.
Building Fabric	Requirements
<b>Walls</b>	Plain and light in tone. Smooth and free from projections and of a material that does not mark easily.
<b>Floors</b>	Non-slip durable and easily cleaned vinyl floor covering to be laid level with flooring in Multi-Purpose Hall. Maintenance must be minimised by careful choice of colour.
<b>Ceiling</b>	Light in tone. Minimum floor to ceiling height = 2.4 m and not exceeding normal classroom height.
<b>Doors</b>	Unglazed double doors 2.0 m wide and opening outward.
<b>Windows</b>	For security and storage reasons, windows should not be provided. Rooflights must not be provided.
<b>Ironmongery</b>	Doors to be lockable and with recessed door furniture.
<b>Fixtures and Fittings</b>	N/A
<b>Storage</b>	N/A

MECHANICAL AND ELECTRICAL SERVICE PROVISIONS		6.15 ADULT CHAIR STORE
Electrical	Requirements	
<b>General Lighting</b>	A lighting intensity of 200 lux shall be provided at floor level. Light fittings should incorporate high frequency control gear.	
<b>Lighting Control System</b>	Automatic lighting controls shall be installed in this area.	
<b>Emergency Lighting</b>	Emergency lighting shall be provided in this area.	
<b>Small Power</b>	1 double cleaner's socket.	
<b>ICT Provision/Data Outlets</b>	Not Required.	
<b>ICT Provision/Voice Outlets</b>	Not Required.	
<b>Dado/Skirting Trunking</b>	Not Required.	

<b>Fire Alarm</b>	Fire alarm system automatic detection should be provided in this area in addition to other fire alarm equipment which may be required as part of the fire risk assessment, overall fire strategy or local Building Control requirement.
<b>Intruder Alarm</b>	Intruder alarm system extended into this area if deemed necessary and required by security strategy.
<b>Class Change</b>	Class change system extended into this area if deemed necessary and required in order to achieve necessary sound level.
<b>TV Terminal</b>	Not Required.
<b>Interactive White Board (IWB)</b>	Not Required.
<b>Ceiling Mounted Projector</b>	Not Required.
<b>Clock Installation</b>	Not Required.
<b>Mechanical</b>	<b>Requirements</b>
<b>Room Temperature °C</b>	Room temperature shall be 15°C, to maintain the fabric of the building and the furniture or equipment therein.
<b>Room Temperature Optimum Start Accuracy – Heating by Radiators and Air Handling</b>	The desired room temperature is to be achieved within 30 minutes of occupation start on 60% of occupied days in the heating season, except where self-regulating under-floor heating is the main heating source.
<b>Room Heating Response to Internal Gains</b>	N/A
<b>Heating Controls Location and Authority</b>	No room occupant control over heating temperature, start time, finish time, regular day omission, holiday days omit. All these controls to be centrally operable by facilities management. (BEMS System.)
<b>Room ventilation</b>	In accordance with requirements stated above, statutory requirements and CIBSE, BB87, BB101, BB93 guidance. Noise from mechanical ventilation/noise transfer from other internal and external spaces, must not cause the required background noise level to be exceeded. High and low level wall vents provided if room located at an external wall.
<b>Heating</b>	To maintain the above temperature, by compensated, optimised and sequenced controls. Radiators or high level heating coils with TRV (Thermostatic Radiator Valves).

## 6.16 STAGE STORE

Planning	Requirements
<b>Room Activities</b>	Storage of portable staging.
<b>Size</b>	Area – 10 m <sup>2</sup> .
<b>Location</b>	Opening solely and directly from the Multi-Purpose Hall.
<b>Layout</b>	A broad rectangle is preferred.
<b>General Guidance</b>	Good guidance on design approach is available from the DfES Building Bulletins, especially BB87 Environment, BB90 Lighting, BB93 Acoustics and BB101 Ventilation. This is in addition to publications from professional institutions associated with building design, construction and specification: eg CIBSE, RICS, RSUA and RIBA.
Internal Environment	Requirements
<b>Acoustic Performance</b>	It is recommended that the acoustic performance of the Stage Store shall be broadly in accordance with the DfES Building Bulletin 93. For further detail refer to Item 5.11.
<b>Daylighting</b>	Not required. See WINDOWS.
Building Fabric	Requirements
<b>Walls</b>	Plain and light in tone. Smooth and free from projections and of a material that does not mark easily.
<b>Floors</b>	Non-slip durable and easily cleaned vinyl floor covering to be laid level with flooring in Multi-Purpose Hall. Maintenance must be minimised by careful choice of colour.
<b>Ceiling</b>	Light in tone. Minimum floor to ceiling height = 2.4 m and not exceeding normal classroom height.
<b>Doors</b>	Unglazed double doors 2.0 m wide and opening outward.
<b>Windows</b>	For security and storage reasons, windows should not be provided. Rooflights must not be provided.
<b>Ironmongery</b>	Doors to be lockable and with recessed door furniture.
<b>Fixtures and Fittings</b>	N/A
<b>Storage</b>	N/A

MECHANICAL AND ELECTRICAL SERVICE PROVISIONS		6.16 STAGE STORE
Electrical	Requirements	
<b>General Lighting</b>	A lighting intensity of 200 lux shall be provided at floor level. Light fittings should incorporate high frequency control gear.	
<b>Lighting Control System</b>	Automatic lighting controls shall be installed in this area.	
<b>Emergency Lighting</b>	Emergency lighting shall be provided in this area.	
<b>Small Power</b>	1 double cleaner's socket.	
<b>ICT Provision/Data Outlets</b>	Not Required.	
<b>ICT Provision/Voice Outlets</b>	Not Required.	
<b>Dado/Skirting Trunking</b>	Not Required.	
<b>Fire Alarm</b>	Fire alarm system automatic detection should be provided in this area in addition to other fire alarm equipment which may be required as part of the fire risk assessment, overall fire strategy or local Building Control requirement.	

<b>Intruder Alarm</b>	Intruder alarm system extended into this area if deemed necessary and required by security strategy.
<b>Class Change</b>	Class change system extended into this area if deemed necessary and required in order to achieve necessary sound level.
<b>TV Terminal</b>	Not Required.
<b>Interactive White Board (IWB)</b>	Not Required.
<b>Ceiling Mounted Projector</b>	Not Required.
<b>Clock Installation</b>	Not Required.
<b>Mechanical</b>	<b>Requirements</b>
<b>Room Temperature °C</b>	Room temperature shall be 15°C, to maintain the fabric of the building and the furniture or equipment therein.
<b>Room Temperature Optimum Start Accuracy – Heating by Radiators and Air Handling</b>	The desired room temperature is to be achieved within 30 minutes of occupation start on 60% of occupied days in the heating season, except where self-regulating under-floor heating is the main heating source.
<b>Room Heating Response to Internal Gains</b>	N/A
<b>Heating Controls Location and Authority</b>	No room occupant control over heating temperature, start time, finish time, regular day omission, holiday days omit. All these controls to be centrally operable by facilities management. (BEMS System.)
<b>Room Ventilation</b>	In accordance with requirements stated above, statutory requirements and CIBSE, BB87, BB101, BB93 guidance. Noise from mechanical ventilation/noise transfer from other internal and external spaces, must not cause the required background noise level to be exceeded.
<b>Heating</b>	To maintain the above temperature, by compensated, optimised and sequenced controls. Radiators or high level heating coils with TRV (Thermostatic Radiator Valves).

## 6.17 EXTERNAL PLAY STORE

Planning	Requirements
<b>Room Activities</b>	Storage of play equipment associated with Foundation Stage and Key Stage 1 pupils.
<b>Size</b>	Area – 15-20 m <sup>2</sup> depending on numbers of classrooms, refer to Schedule of Accommodation Section 3b.
<b>Location</b>	Adjacent to Foundation/Key Stage 1 classroom clusters opening directly onto their hard play area.
<b>Layout</b>	A broad rectangle is preferred.
<b>General Guidance</b>	Good guidance on design approach is available from the DfES Building Bulletins, especially BB87 Environment, BB90 Lighting, BB93 Acoustics and BB101 Ventilation. This is in addition to publications from professional institutions associated with building design, construction and specification: eg CIBSE, RICS, RSUA and RIBA.
Internal Environment	Requirements
<b>Acoustic Performance</b>	It is recommended that the acoustic performance of the External Play Store shall be broadly in accordance with the DfES Building Bulletin 93. For further detail refer to Item 5.11.
<b>Daylighting</b>	Not required. See WINDOWS.
Building Fabric	Requirements
<b>Walls</b>	Plain and light in tone. Smooth and free from projections and capable of being easily cleaned.
<b>Floors</b>	Non-slip durable and easily cleaned vinyl floor covering. Maintenance must be minimised by careful choice of colour.
<b>Ceiling</b>	Light in tone. Minimum floor to ceiling height = 2.4 m and not exceeding normal classroom height.
<b>Doors</b>	Unglazed double doors 2.0 m wide and opening outward onto Foundation/Key Stage 1 hard play area.
<b>Windows</b>	For security and storage reasons windows should not be provided. Rooflights must not be provided.
<b>Ironmongery</b>	Doors to be lockable.
<b>Fixtures and Fittings</b>	Mains water supply to a wall mounted bib tap with hose fitting situated over an open gulley trap. Preferably located within the store on an external wall close to the doors.
<b>Storage</b>	N/A

MECHANICAL AND ELECTRICAL SERVICE PROVISIONS		6.17 EXTERNAL PLAY STORE
Electrical	Requirements	
<b>General Lighting</b>	A lighting intensity of 200 lux shall be provided at floor level. Light fittings should incorporate high frequency control gear.	
<b>Lighting Control System</b>	Automatic lighting controls shall be installed in this area.	
<b>Emergency Lighting</b>	Emergency lighting shall be provided in this area.	
<b>Small Power</b>	1 double cleaner's socket.	
<b>ICT Provision/Data Outlets</b>	Not Required.	
<b>ICT Provision/Voice Outlets</b>	Not Required.	
<b>Dado/Skirting Trunking</b>	Not Required.	

<b>Fire Alarm</b>	Fire alarm system automatic detection should be provided in this area in addition to other fire alarm equipment which may be required as part of the fire risk assessment, overall fire strategy or local Building Control requirement.
<b>Intruder Alarm</b>	Intruder alarm system extended into this area if deemed necessary and required by security strategy.
<b>Class Change</b>	Class change system extended into this area if deemed necessary and required in order to achieve necessary sound level.
<b>TV Terminal</b>	Not Required.
<b>Interactive White Board (IWB)</b>	Not Required.
<b>Ceiling Mounted Projector</b>	Not Required.
<b>Clock Installation</b>	Not Required.
<b>Mechanical</b>	<b>Requirements</b>
<b>Room temperature °C</b>	Not Required.
<b>Room Temperature Optimum Start Accuracy – Heating by Radiators and Air Handling</b>	Not Required.
<b>Room Heating Response to Internal Gains</b>	Not Required.
<b>Heating Controls Location and Authority</b>	Not Required.
<b>Room Ventilation</b>	Not Required.
<b>Heating</b>	Not Required.
<b>Potable Water Services</b>	To bib tap.

## 6.18 CLEANER'S STORE

Planning	Requirements
<b>Room Activities</b>	Storage of cleaner's equipment, cleaning materials and consumables.
<b>Size</b>	Area – 3 m <sup>2</sup> minimum.
<b>Location</b>	Preferably adjacent to toilet areas.
<b>Layout</b>	A broad rectangle is preferred.
<b>General guidance</b>	Good guidance on design approach is available from the DfES Building Bulletins, especially BB87 Environment, BB90 Lighting, BB93 Acoustics and BB101 Ventilation. This is in addition to publications from professional institutions associated with building design, construction and specification: eg CIBSE, RICS, RSUA and RIBA.
Internal Environment	Requirements
<b>Acoustic Performance</b>	It is recommended that the acoustic performance of the Cleaner's Store shall be broadly in accordance with the DfES Building Bulletin 93. For further detail refer to Item 5.11.
<b>Daylighting</b>	Not required. See WINDOWS.
Building Fabric	Requirements
<b>Walls</b>	Plaster, smooth surface and capable of being easily cleaned. Wall structure capable of accepting fixings for shelves and fittings.
<b>Floors</b>	Non-slip durable and easily cleaned vinyl floor covering. Maintenance must be minimised by careful choice of colour.
<b>Ceiling</b>	Light in tone. Minimum floor to ceiling height = 2.4 m and not exceeding normal classroom height.
<b>Doors</b>	Unglazed single door to be wide enough to accommodate cleaning equipment, trolleys, etc and preferably opening outward onto corridor.
<b>Windows</b>	For security and storage reasons, windows should not be provided. Rooflights must not be provided.
<b>Ironmongery</b>	Door to be lockable.
<b>Fixtures and Fittings</b>	Proprietary cleaner's sink. Brush rack and suspended mop drying rack required. Shelving should be adjustable for height and 2.0 m minimum overall length. Materials and construction should be sufficiently robust to prevent sagging. Average interval between shelves - 300 mm Minimum space below bottom shelf - 750 mm Depth of shelves - 300 mm Number of shelves per wall - 4 No
<b>Storage</b>	N/A

MECHANICAL AND ELECTRICAL SERVICE PROVISIONS		6.18 CLEANER'S STORE
Electrical	Requirements	
<b>General Lighting</b>	A lighting intensity of 200 lux shall be provided at floor level. Light fittings should incorporate high frequency control gear.	
<b>Lighting Control System</b>	Automatic lighting controls shall be installed in this area.	
<b>Emergency Lighting</b>	Emergency lighting shall be provided in this area.	
<b>Small Power</b>	1 double cleaner's socket.	
<b>ICT Provision/Data Outlets</b>	Not Required.	

<b>ICT Provision/Voice Outlets</b>	Not Required.
<b>Dado/Skirting Trunking</b>	Not Required.
<b>Fire Alarm</b>	Fire alarm system automatic detection should be provided in this area in addition to other fire alarm equipment which may be required as part of the fire risk assessment, overall fire strategy or local Building Control requirement.
<b>Intruder Alarm</b>	Intruder alarm system extended into this area if deemed necessary and required by security strategy.
<b>Class Change</b>	Class change system extended into this area if deemed necessary and required in order to achieve necessary sound level.
<b>TV Terminal</b>	Not Required.
<b>Interactive White Board (IWB)</b>	Not Required.
<b>Ceiling Mounted Projector</b>	Not Required.
<b>Clock Installation</b>	Not Required.
<b>Mechanical</b>	<b>Requirements</b>
<b>Room Temperature °C</b>	Room temperature shall be 15°C, to maintain the fabric of the building and the furniture or equipment therein.
<b>Room Temperature Optimum Start Accuracy – Heating by Radiators and Air Handling</b>	The desired room temperature is to be achieved within 30 minutes of occupation start on 60% of occupied days in the heating season, except where self-regulating under-floor heating is the main heating source.
<b>Room Heating Response to Internal Gains</b>	N/A
<b>Heating Controls Location and Authority</b>	No room occupant control over heating temperature, start time, finish time, regular day omission, holiday days omit. All these controls to be centrally operable by facilities management. (BEMS System.)
<b>Room Ventilation</b>	In accordance with requirements stated above, statutory requirements and CIBSE, BB87, BB101, BB93 guidance. Noise from mechanical ventilation/noise transfer from other internal and external spaces, must not cause the required background noise level to be exceeded.
<b>Heating</b>	To maintain the above temperature, by compensated, optimised and sequenced controls. Radiators or high level heating coils with TRV (Thermostatic Radiator Valves).
<b>Potable Water Services</b>	Provided to cleaner's sink unit, separate tap, drinking water sign.
<b>Hot Water Service</b>	Mains water to cleaner's sink unit serving local point of use hot water. (Gas or Electric water heater.)
<b>Above Ground Drainage</b>	Waste connection to sink.

## 6.19 CENTRAL STORE

Planning	Requirements
<b>Room Activities</b>	Storage of school records, administration, stationery, etc.
<b>Size</b>	Area –10-15 m <sup>2</sup> depending on the number of classrooms, refer to Schedule of Accommodation, Section 3b.
<b>Location</b>	Preferably adjacent to the office accommodation.
<b>Layout</b>	A broad rectangle is preferred.
<b>General Guidance</b>	Good guidance on design approach is available from the DfES Building Bulletins, especially BB87 Environment, BB90 Lighting, BB93 Acoustics and BB101 Ventilation. This is in addition to publications from professional institutions associated with building design, construction and specification: eg CIBSE, RICS, RSUA and RIBA.
<b>Internal Environment</b>	<b>Requirements</b>
<b>Acoustic Performance</b>	It is recommended that the acoustic performance of the Central Store shall be broadly in accordance with the DfES Building Bulletin 93. For further detail refer to Item 5.11.
<b>Daylighting</b>	See WINDOWS.
<b>Building Fabric</b>	<b>Requirements</b>
<b>Walls</b>	Plaster, smooth surface and capable of being easily cleaned. Wall structure capable of accepting fixings for shelves and fittings.
<b>Floors</b>	Non-slip durable and easily cleaned vinyl floor covering. Maintenance must be minimised by careful choice of colour.
<b>Ceiling</b>	Light in tone. Minimum floor to ceiling height = 2.4 m.
<b>Doors</b>	Unglazed.
<b>Windows</b>	For security and storage reasons, windows should not be provided. Rooflights must not be provided.
<b>Ironmongery</b>	Door to be lockable.
<b>Fixtures and Fittings</b>	Shelving should be adjustable for height and provided to all walls. Materials and construction should be sufficiently robust to prevent sagging. In the interests of safety, wood cladding should be provided for the exposed ends of any metal shelving. Average interval between shelves - 300 mm Minimum space below bottom shelf - 750 mm Depth of shelves - 300 mm Number of shelves per wall - 5 No
<b>Storage</b>	N/A

MECHANICAL AND ELECTRICAL SERVICE PROVISIONS		6.19 CENTRAL STORE
Electrical	Requirements	
<b>General Lighting</b>	A lighting intensity of 200 lux shall be provided at floor level. Location and orientation of storage shelves shall be taken into account when positioning light fittings. Light fittings should incorporate high frequency control gear.	
<b>Lighting Control System</b>	Automatic lighting controls shall be installed in this area.	
<b>Emergency Lighting</b>	Emergency lighting shall be provided in this area.	
<b>Small Power</b>	1 double cleaner's socket.	
<b>ICT Provision/Data Outlets</b>	Not Required.	

<b>ICT Provision/Voice Outlets</b>	Not Required.
<b>Dado/Skirting Trunking</b>	Not Required.
<b>Fire Alarm</b>	Fire alarm system automatic detection should be provided in this area in addition to other fire alarm equipment which may be required as part of the fire risk assessment, overall fire strategy or local Building Control requirement.
<b>Intruder Alarm</b>	Intruder alarm system extended into this area if deemed necessary and required by security strategy.
<b>Class Change</b>	Class change system extended into this area if deemed necessary and required in order to achieve necessary sound level.
<b>TV Terminal</b>	Not Required.
<b>Interactive White Board (IWB)</b>	Not Required.
<b>Ceiling Mounted Projector</b>	Not Required.
<b>Clock Installation</b>	Not Required.
<b>Mechanical</b>	<b>Requirements</b>
<b>Room Temperature °C</b>	Room temperature shall be 15°C, to maintain the fabric of the building and the furniture or equipment therein.
<b>Room Temperature Optimum Start Accuracy – Heating by Radiators and Air Handling</b>	The desired room temperature is to be achieved within 30 minutes of occupation start on 60% of occupied days in the heating season, except where self-regulating under-floor heating is the main heating source.
<b>Room Heating Response to Internal Gains</b>	Sub-zoning shall be standard provision for the Central Store and should achieve the desired room temperature response within 20 minutes controlled through the BEMS system.
<b>Heating Controls Location and Authority</b>	No room occupant control over heating temperature, start time, finish time, regular day omission, holiday days omit. All these controls to be centrally operable by facilities management. (BEMS System.)
<b>Room Ventilation</b>	In accordance with requirements stated above, statutory requirements and CIBSE, BB87, BB101, BB93 guidance. Noise from mechanical ventilation/noise transfer from other internal and external spaces, must not cause the required background noise level to be exceeded.
<b>Heating</b>	To maintain the above temperature, by compensated, optimised and sequenced controls. Radiators or high level heating coils with TRV (Thermostatic Radiator Valves).

## 6.20 REPROGRAPHICS ROOM

Planning	Requirements
<b>Room Activities</b>	Accommodation for photocopy and print equipment.
<b>Size</b>	Area – 10 m <sup>2</sup> .
<b>Location</b>	Preferably adjacent to the General Office.
<b>Layout</b>	A broad rectangle is preferred.
<b>General Guidance</b>	Good guidance on design approach is available from the DfES Building Bulletins, especially BB87 Environment, BB90 Lighting, BB93 Acoustics and BB101 Ventilation. This is in addition to publications from professional institutions associated with building design, construction and specification: eg CIBSE, RICS, RSUA and RIBA.
Internal Environment	Requirements
<b>Acoustic Performance</b>	It is recommended that the acoustic performance of the Reprographics Room shall be broadly in accordance with the DfES Building Bulletin 93. For further detail refer to Item 5.11.
<b>Daylighting</b>	See WINDOWS.
Building Fabric	Requirements
<b>Walls</b>	Plaster, smooth surface and capable of being easily cleaned. Wall structure capable of accepting fixings for shelves and fittings.
<b>Floors</b>	Non-slip, warm, resilient and easily cleaned non-woven anti static carpet. Maintenance must be minimised by careful choice of colour.
<b>Ceiling</b>	Light in tone. Minimum floor to ceiling height = 2.4 m.
<b>Doors</b>	The door should have a glazed panel at suitable height for both pupils and teachers. Glass should be clear and of an appropriate safety standard.
<b>Windows</b>	Windows should provide adequate and even daylighting. Controllable opening lights which will maintain security. Windows should be capable of being adequately screened by curtains or blinds.
<b>Ironmongery</b>	Doors lockable and windows lockable with stays or restrictors used on all opening sashes both high and low level. Operation of opening windows must be safe for occupants.
<b>Fixtures and Fittings</b>	Shelving should be adjustable for height and provided to 1 No wall, 2.0 m overall length. Materials and construction should be sufficiently robust to prevent sagging. In the interests of safety, wood cladding should be provided for the exposed ends of any metal shelving. Average interval between shelves - 300 mm Minimum space below bottom shelf - 750 mm Depth of shelves - 300 mm Number of shelves per wall - 4 No
<b>Storage</b>	N/A

MECHANICAL AND ELECTRICAL SERVICE PROVISIONS		6.20 REPROGRAPHICS ROOM
Electrical	Requirements	
<b>General Lighting</b>	A lighting intensity of 300 lux shall be provided at the working plane. A combination of up/down lighting may be considered. The need to avoid glare should be considered when selecting and placing fittings. The fittings should be circuited and switched in such a manner as to provide flexibility. Light fittings should incorporate high frequency control gear and lamps which provide good colour rendering properties.	

<b>Lighting Control System</b>	Automatic lighting controls shall be installed in this area.
<b>Emergency Lighting</b>	Not required unless this room is part of a defined emergency escape route, local Building Control recommendation or deemed necessary by a risk assessment.
<b>Small Power</b>	1 double cleaner's socket. 3 double computer socket outlets. (at positions agreed with the school authority).
<b>ICT Provision/Data Outlets</b>	2 single data point (RJ45) shall be provided. (at a position agreed with the school authority).
<b>ICT Provision/Voice Outlets</b>	Not Required.
<b>Dado/Skirting Trunking</b>	Aluminium (standard colour).
<b>Fire Alarm</b>	Fire alarm system extended into this area if deemed necessary and required by fire risk assessment, overall fire strategy or local Building Control requirement.
<b>Intruder Alarm</b>	Intruder alarm system extended into this area if deemed necessary and required by security strategy.
<b>Class Change</b>	Class change system extended into this area if deemed necessary and required in order to achieve necessary sound level.
<b>TV Terminal</b>	Not Required.
<b>Interactive White Board (IWB)</b>	Not Required.
<b>Ceiling Mounted Projector</b>	Not Required.
<b>Clock Installation</b>	1 No battery operated clock shall be provided.
<b>Mechanical</b>	<b>Requirements</b>
<b>Room Temperature °C</b>	Room temperature shall be 15°C, to maintain the fabric of the building and the furniture or equipment therein.
<b>Room Temperature Optimum Start Accuracy – Heating by Radiators and Air Handling</b>	The desired room temperature is to be achieved within 30 minutes of occupation start on 60% of occupied days in the heating season, except where self-regulating under-floor heating is the main heating source.
<b>Room Heating Response to Internal Gains</b>	Sub-zoning shall be standard provision for the Reprographics Room and should achieve the desired room temperature response within 20 minutes controlled through the BEMS system.
<b>Heating Controls Location and Authority</b>	No room occupant control over heating temperature, start time, finish time, regular day omission, holiday days omit. All these controls to be centrally operable by facilities management. (BEMS System.)
<b>Room Ventilation</b>	In accordance with requirements stated above, statutory requirements and CIBSE, BB87, BB101, BB93 guidance. Noise from mechanical ventilation/noise transfer from other internal and external spaces, must not cause the required background noise level to be exceeded.
<b>Heating</b>	To maintain the above temperature, by compensated, optimised and sequenced controls.

## 6.21 CLASS TOILETS AND CLOAK SPACE

<b>Planning</b>	<b>Requirements</b>
<b>Room Activities</b>	Separate toilet facilities for boys and girls, communal cloaks area.
<b>Size</b>	Area 15 m <sup>2</sup> minimum overall per classroom.
<b>Location</b>	<p>Preferably a combined cloaks/toilet area located on an external wall and shared between a pair of classrooms with direct access to each classroom and to the outside, see Appendices 5 and 8. This is particularly desirable for children in Foundation Stage and Key Stage 1. Separate toilet compartments should be provided for boys and girls. Toilets and cloaks must be separate spaces.</p> <p>In cases where teaching accommodation is at an upper floor level, or in large schools, or particular circumstances where the cluster concept of classrooms around a resource area may not be possible, this, or some of this accommodation can be located off a circulation area. It should be reasonably dispersed throughout the relevant part of the building to avoid localised congestion, particularly in the case of cloaks.</p>
<b>Layout</b>	Separate toilet space for boys and girls with adjacent cloaks area.
<b>General Guidance</b>	Good guidance on design approach is available from the DfES Building Bulletins, especially BB87 Environment, BB90 Lighting, BB93 Acoustics and BB101 Ventilation. This is in addition to publications from professional institutions associated with building design, construction and specification: eg CIBSE, RICS, RSUA and RIBA.
<b>Internal Environment</b>	<b>Requirements</b>
<b>Acoustic Performance</b>	It is recommended that the acoustic performance of the Class Toilet and Cloak Space shall be broadly in accordance with the DfES Building Bulletin 93. For further detail refer to Item 5.11.
<b>Daylighting</b>	The distribution and quantity of daylight should be as good as possible. See WINDOWS.
<b>Building Fabric</b>	<b>Requirements</b>
<b>Walls</b>	Plaster with easily cleaned finish; in toilet areas an impervious finish 1.5 m high is recommended. Wall structure capable of accepting fixings for sanitary fittings, toilet partitions, etc.
<b>Floors</b>	Non-slip, durable and easily cleaned vinyl floor covering with covered vinyl skirting is recommended for toilet areas. Maintenance must be minimised by careful choice of colour. A suitable area of clean-off zone mat-well to be provided at external entrance door to cloaks.
<b>Ceiling</b>	Light in tone. Minimum floor to ceiling height = 2.4 m and not exceeding normal classroom height.
<b>Doors</b>	Unglazed doors to toilets, door between cloaks and classroom to have a glazed panel(s) at a suitable height for both pupils and teachers, glass should be clear.
<b>Windows</b>	High level opening ventilators are generally most appropriate, opaque glazed as necessary.
<b>Ironmongery</b>	Windows to be lockable with stays or restrictors used on all opening sashes both high and low level.

<p><b>Fixtures and Fittings</b></p>	<p><b>CLOAKROOM FITTINGS</b> A coat hook should be provided for each pupil, 30 No minimum. These should be spaced at 150 mm centres in a single row on a timber wall batten at an appropriate height. The recommended clear space between parallel rows of coat rails is 1.2 m. The use of mobile cloaks trolleys is discouraged. It is useful if heating pipes run below coat rails to assist in the drying of clothing. Bench seating secured to wall/floor to be provided beneath coat rails.</p> <p><b>SANITARY PROVISION</b> For boys, 1 WC or urinal for every 15 pupils or part thereof, at least one-third of which should be WCs. For girls, 1 WC for every 15 pupils or part thereof. In all cases a wash-hand basin should be provided for each WC or urinal. <b>Spring-loaded press-down taps should NOT be used.</b> Where a toilet area is shared between 2 classrooms with an enrolment of approximately 60 a total of 4 sanitary fittings can be considered acceptable. For years 1 and 2, appropriate height fittings are recommended and urinals should not be provided.</p> <p><b>WC CUBICLES</b> Partitions should be of an impervious, easily cleaned material, finishing 150 mm minimum above the floor. Each cubicle should have a secure fitting for toilet paper. For children in years 1 and 2 the recommended height for partitions and doors is 1.2 m from top to bottom with safety hinges and no fastenings; only suitable height handles. For years 3 and above, cubicles and doors to be normal height, doors should be fitted on the inside with a suitable fastening which, in the case of emergency, can be readily released from the outside.</p> <p><b>GENERAL</b> Hand-drying facilities to be provided. A wall mounted mirror at a suitable height is recommended above all wash-hand basins.</p>
<p><b>Storage</b></p>	<p>N/A</p>

<p><b>MECHANICAL AND ELECTRICAL SERVICE PROVISIONS</b></p>		<p><b>6.21 CLASS TOILET AND CLOAK SPACE</b></p>
<p><b>Electrical</b></p>	<p><b>Requirements</b></p>	
<p><b>General Lighting</b></p>	<p>A lighting intensity of 200 lux shall be provided at floor level. Light fittings should incorporate high frequency control gear.</p>	
<p><b>Lighting Control System</b></p>	<p>Automatic lighting controls shall be installed in this area.</p>	
<p><b>Emergency Lighting</b></p>	<p>Emergency lighting shall be provided in this area.</p>	
<p><b>Small Power</b></p>	<p>1 double cleaner's socket in cloak space.</p>	
<p><b>Hand Dryer</b></p>	<p>If hand driers are to be the preferred option of hand-drying facilities in toilet areas then these units shall be supplied under the contract. Hand-dryer units shall be robust in construction and vandal resistant. All necessary power supplies shall be provided within the contract. Hand-dryer circuits shall have RCD protection.</p>	
<p><b>ICT Provision/Data Outlets</b></p>	<p>Not Required.</p>	
<p><b>ICT Provision/Voice Outlets</b></p>	<p>Not Required.</p>	
<p><b>Dado/Skirting Trunking</b></p>	<p>Not Required.</p>	

<b>Fire Alarm</b>	Fire alarm system extended into this area if deemed necessary and required by fire risk assessment, overall fire strategy or local Building Control requirement.
<b>Intruder Alarm</b>	Intruder alarm system extended into this area if deemed necessary and required by security strategy.
<b>Class Change</b>	Class change system extended into this area if deemed necessary and required in order to achieve necessary sound level.
<b>TV Terminal</b>	Not Required.
<b>Interactive White Board (IWB)</b>	Not Required.
<b>Ceiling Mounted Projector</b>	Not Required.
<b>Clock Installation</b>	Not Required.
<b>Mechanical</b>	<b>Requirements</b>
<b>Room Temperature°C</b>	Room temperature shall be 15°C, to maintain the fabric of the building and the furniture or equipment therein.
<b>Room Temperature Optimum Start Accuracy – Heating by Radiators and Air Handling</b>	The desired room temperature is to be achieved within 30 minutes of occupation start on 60% of occupied days in the heating season, except where self-regulating under-floor heating is the main heating source.
<b>Room Heating Response to Internal Gains</b>	N/A
<b>Heating Controls Location and Authority</b>	No room occupant control over heating temperature, start time, finish time, regular day omission, holiday days omit. All these controls to be centrally operable by facilities management. (BEMS System.)
<b>Room Ventilation</b>	In accordance with requirements stated above, statutory requirements and CIBSE, BB87, BB101, BB93 guidance. Noise from mechanical ventilation/noise transfer from other internal and external spaces, must not cause the required background noise level to be exceeded.
<b>Heating</b>	To maintain the above temperature, by compensated, optimised and sequenced controls. Radiators or high level heating coils with TRV (Thermostatic Radiator Valves).
<b>Potable Water Services</b>	Provided to wash-hand basins via spray mixer tap, WCs and urinals (except where Rainwater Harvesting has been adopted to supply WCs and urinals).
<b>Hot Water Services</b>	Provided to wash-hand basins through blending valve and spray mixer tap.
<b>Above Ground Drainage</b>	Waste connection to wash-hand basins, urinals, WCs, etc.

## 6.22 STAFF TOILETS

<b>Planning</b>	<b>Requirements</b>
<b>Room Activities</b>	Toilet facilities for staff and visitors.
<b>Size</b>	Area 12-21 m <sup>2</sup> overall.
<b>Location</b>	Easily accessible from the main entrance and convenient to the Staff Room. Location of the toilets should allow for after hours use by the local community during school events without having to open the main part of the school to gain access.
<b>Layout</b>	Separate toilet space for male and female.
<b>General Guidance</b>	Good guidance on design approach is available from the DfES Building Bulletins, especially BB87 Environment, BB90 Lighting, BB93 Acoustics and BB101 Ventilation. This is in addition to publications from professional institutions associated with building design, construction and specification: eg CIBSE, RICS, RSUA and RIBA.
<b>Internal Environment</b>	<b>Requirements</b>
<b>Acoustic Performance</b>	It is recommended that the acoustic performance of the Staff Toilets shall be broadly in accordance with the DfES Building Bulletin 93. For further detail refer to Item 5.11.
<b>Daylighting</b>	The distribution and quantity of daylight should be as good as possible. See WINDOWS.
<b>Building Fabric</b>	<b>Requirements</b>
<b>Walls</b>	Plaster with easily cleaned finish; an impervious finish 1.5 m high is recommended. Wall structure capable of accepting fixings for sanitary fittings, toilet partitions, etc.
<b>Floors</b>	Non-slip, durable and easily cleaned vinyl floor covering with coved vinyl skirting is recommended for toilet areas. Maintenance must be minimised by careful choice of colour.
<b>Ceiling</b>	Light in tone. Minimum floor to ceiling height = 2.4 m and not exceeding normal classroom height.
<b>Doors</b>	Unglazed.
<b>Windows</b>	High level opening ventilators are generally most appropriate, opaque glazed as necessary with stays or restrictors used on all opening sashes.
<b>Ironmongery</b>	Doors and windows to be lockable.
<b>Fixtures and Fittings</b>	<p><b>SANITARY PROVISION</b>            For males, 1 WC or urinal for every 15 or part thereof, at least one-third of which should be WCs.            For females, 1 WC for every 8 or part thereof.            In all cases a wash-hand basin should be provided for each WC or urinal.  <b>Spring-loaded press-down taps should NOT be used.</b></p> <p><b>WC CUBICLES</b>            Partitions should be of an impervious, easily cleaned material, finishing 150 mm minimum above the floor. Each cubicle should have a secure fitting for toilet paper.            Doors should be fitted on the inside with a suitable fastening which, in the case of emergency, can be readily released from the outside.</p> <p><b>GENERAL</b>            Hand-drying facilities to be provided.            A wall mounted mirror at a suitable height is recommended above all wash-hand basins.</p>
<b>Storage</b>	N/A

<b>MECHANICAL AND ELECTRICAL SERVICE PROVISIONS</b>		<b>6.22 STAFF TOILETS</b>
<b>Electrical</b>	<b>Requirements</b>	
<b>General Lighting</b>	A lighting intensity of 200 lux shall be provided at floor level. Light fittings should incorporate high frequency control gear.	
<b>Lighting Control System</b>	Automatic lighting controls shall be installed in this area.	
<b>Emergency Lighting</b>	Emergency lighting shall be provided in this area.	
<b>Small Power</b>	Not Required.	
<b>Hand Dryer</b>	If hand driers are to be the preferred option of hand drying facilities in toilet areas then these units shall be supplied under the contract. Hand-dryer units shall be robust in construction and vandal resistant. All necessary power supplies shall be provided within the contract. Hand-dryer circuits shall have RCD protection.	
<b>ICT Provision/Data Outlets</b>	Not Required.	
<b>ICT Provision/Voice Outlets</b>	Not Required.	
<b>Dado/Skirting Trunking</b>	Not Required.	
<b>Fire Alarm</b>	Fire alarm system extended into this area if deemed necessary and required by fire risk assessment, overall fire strategy or local Building Control requirement.	
<b>Intruder Alarm</b>	Intruder alarm system extended into this area if deemed necessary and required by security strategy.	
<b>Class Change</b>	Class change system extended into this area if deemed necessary and required in order to achieve necessary sound level.	
<b>TV Terminal</b>	Not Required.	
<b>Interactive White Board (IWB)</b>	Not Required.	
<b>Ceiling Mounted Projector</b>	Not Required.	
<b>Clock Installation</b>	Not Required.	
<b>Mechanical</b>	<b>Requirements</b>	
<b>Room Temperature °C</b>	Room temperature shall be 15°C, to maintain the fabric of the building and the furniture or equipment therein.	
<b>Room Temperature Optimum Start Accuracy – Heating by Radiators and Air Handling</b>	The desired room temperature is to be achieved within 30 minutes of occupation start on 60% of occupied days in the heating season, except where self-regulating under-floor heating is the main heating source.	
<b>Room Heat Internal Gains</b>	Sub-zoning shall be standard provision for the Staff Toilets and should achieve the desired room temperature response within 20 minutes controlled through the BEMS system.	
<b>Heating Controls Location and Authority</b>	No room occupant control over heating temperature, start time, finish time, regular day omission, holiday days omit. All these controls to be centrally operable by facilities management. (BEMS System.)	

<b>Room Ventilation</b>	In accordance with requirements stated above, statutory requirements and CIBSE, BB87, BB101, BB93 guidance. Noise from mechanical ventilation/noise transfer from other internal and external spaces, must not cause the required background noise level to be exceeded.
<b>Heating</b>	To maintain the above temperature, by compensated, optimised and sequenced controls. Radiators or high level heating coils with TRV (Thermostatic Radiator Valves).
<b>Potable Water Services</b>	Provided to wash-hand basins via spray mixer tap, WCs and urinals (except where Rainwater Harvesting has been adopted to supply WCs and urinals).
<b>Hot Water Services</b>	Provided to wash-hand basins through blending valve and spray mixer tap.
<b>Above Ground Drainage</b>	Waste connection to wash-hand basins, urinals, WCs, etc.

## 6.23 HYGIENE ROOM

Planning	Requirements
<b>Room Activities</b>	Primarily to provide toilet, changing and showering facilities for pupils with specific needs. May also be used as wheelchair accessible (or disabled) toilet in smaller schools where a separate facility is not provided. In larger schools additional wheelchair accessible toilets may be required to satisfy maximum travel distance requirements; these shall be designed in compliance with Technical Booklet R of the Building Regulations (NI) 2000.
<b>Size</b>	Area 13 m <sup>2</sup> overall.
<b>Location</b>	Accessible from the main entrance and convenient to the Staff Toilets. Where provided as the sole wheelchair accessible toilet, the location should allow for after hours use by the local community (during school events) without having to open the main part of the school for access.
<b>Layout</b>	Preferably square, see Appendix 6.
<b>General Guidance</b>	Good guidance on design approach is available from the DfES Building Bulletins, especially BB87 Environment, BB90 Lighting, BB93 Acoustics and BB101 Ventilation. This is in addition to publications from professional institutions associated with building design, construction and specification: eg CIBSE, RICS, RSUA and RIBA.
Internal Environment	Requirements
<b>Acoustic Performance</b>	It is recommended that the acoustic performance of the General Office shall be broadly in accordance with the DfES Building Bulletin 93. For further detail refer to Item 5.11.
<b>Daylighting</b>	The distribution and quantity of daylight should be as good as possible. See WINDOWS.
Building Fabric	Requirements
<b>Walls</b>	Plaster with easily cleaned finish; an impervious finish 1.5 m high is recommended. Wall structure capable of accepting fixings for sanitary fittings, toilet partitions, etc.
<b>Floors</b>	Non-slip, durable and easily cleaned. An impervious finish with skirting is recommended.
<b>Ceiling</b>	Light in tone. Minimum floor to ceiling height = 2.4 m and not exceeding normal classroom height.
<b>Doors</b>	Unglazed.
<b>Windows</b>	High level opening ventilators are generally most appropriate, opaque glazed as necessary.
<b>Ironmongery</b>	Doors lockable and windows lockable with stays or restrictors used on all opening sashes both high and low level. Door lock to be such that it can be released from the outside in an emergency.
<b>Fixtures and Fittings</b>	<p><b>HOIST</b> Lifting is no longer allowed by classroom/care assistants, therefore - a mobile hoist shall be provided from the school's equipment budget when specifically recommended by an Occupational Therapist report. This hoist provides transfer to various fixtures and movement throughout the room.</p> <p><b>ALARM</b> While it is likely users will be assisted, an emergency alarm with 2 No pull cords is recommended, 1 at WC and the other at shower, as staff may need to call for further assistance. Alarms should be wired back to a central location that is permanently staffed. Reset button required.</p> <p><b>WC</b> WC pan to be at 400 mm with the option to accommodate variable seat heights to suit user. Pan shall extend 750 mm forwards from wall to allow independent wheelchair use.</p>

	<p><b>WHB</b>                  Bowl should be 600 x 500 mm wide and have 1,500 x 1,500 mm clear approach. Height adjustable WHB should only be installed when specifically recommended by Occupational Therapist. Basin shall be fixed at 740 mm above floor level. Shelving shall be provided adjacent to WHB for equipment and aids.</p> <p><b>CHANGING BENCH</b>                  Proprietary height-adjustable bench, 910 x 1,900 mm standard footprint. Ideally should have a backrest to give support. Bench should be able to be folded away.</p> <p><b>SHOWER</b>                  Level access, drop-down seat, half height bi-fold doors to allow assistance, 2 No drop-down handles plus fixed vertical and horizontal rails, lever type shower controls with temperature limiting controls (41°C), and height adjustable shower head.</p> <p><b>MODESTY CURTAIN</b>                  Located to screen room from open door.</p> <p><b>PAPER TOWEL DISPENSER</b>                  Adjacent to WHB.</p> <p><b>WASTE PAPER BIN</b>                  With plastic lining, adjacent to WHB.</p> <p><b>SLUICE</b>                  Floor mounted.</p> <p><b>COLOSTOMY SHELVES</b>                  To left and right-hand side of WC, 750 mm above floor level.</p> <p><b>STORAGE CUPBOARD</b>                  Base unit with worktop, easy clean.</p> <p><b>MIRROR</b>                  1,200 x 600 mm with lower edge 600 mm above floor level.</p> <p><b>CLOTHES HOOKS</b>                  One to side of door and 1 adjacent to bench.</p>
<b>Storage</b>	N/A

<b>MECHANICAL AND ELECTRICAL SERVICE PROVISIONS</b>		6.23 HYGIENE ROOM
<b>Electrical</b>	<b>Requirements</b>	
<b>General Lighting</b>	A lighting intensity of 200 lux shall be provided at floor level. Light fittings should incorporate high frequency control gear.	
<b>Lighting Control System</b>	Not Required.	
<b>Emergency Lighting</b>	Emergency lighting shall be provided in this area.	
<b>Small Power</b>	Not Required.	
<b>Call System</b>	Call for assistance system is required. System shall incorporate the following: 2 No pull cord switches (1 at WC and 1 at shower). Silence or acknowledgement button within Hygiene Room. Reset button within Hygiene Room. Alarm activation neon/buzzer outside/above Hygiene Room door with secondary indication at a central location which is permanently manned. All necessary power supplies required for this system shall be provided.	
<b>ICT Provision/Data Outlets</b>	Not Required.	

<b>ICT Provision/Voice Outlets</b>	Not Required.
<b>Dado/Skirting Trunking</b>	Not Required.
<b>Fire Alarm</b>	Fire alarm system extended into this area if deemed necessary and required by fire risk assessment, overall fire strategy or local Building Control requirement.
<b>Intruder Alarm</b>	Intruder alarm system extended into this area if deemed necessary and required by security strategy.
<b>Class Change</b>	Class change system extended into this area if deemed necessary and required in order to achieve necessary sound level.
<b>TV Terminal</b>	Not Required.
<b>Interactive White Board (IWB)</b>	Not Required.
<b>Ceiling Mounted Projector</b>	Not Required.
<b>Clock Installation</b>	Not Required.
<b>Mechanical</b>	<b>Requirements</b>
<b>Room Temperature °C</b>	Room temperature shall be 21°C.
<b>Room Temperature Optimum Start Accuracy – Heating by Radiators and Air Handling</b>	The desired room temperature is to be achieved within 30 minutes of occupation start on 60% of occupied days in the heating season, except where self-regulating under-floor heating is the main heating source.
<b>Room Heating Response to Internal Gains</b>	Sub-zoning shall be standard provision for the Hygiene Room and should achieve the desired room temperature response within 20 minutes controlled through the BEMS system.
<b>Heating Controls Location And Authority</b>	No room occupant control over heating temperature, start time, finish time, regular day omission, holiday days omit. All these controls to be centrally operable by facilities management. (BEMS System.)
<b>Room Ventilation</b>	In accordance with requirements stated above, statutory requirements and CIBSE, BB87, BB101, BB93 guidance. Noise from mechanical ventilation/noise transfer from other internal and external spaces, must not cause the required background noise level to be exceeded.
<b>Heating</b>	To maintain the above temperature, by compensated, optimised and sequenced controls.
<b>Potable Water Services</b>	Provided to wash-hand basin via spray mixer tap, WC, shower and sluice, etc (except where Rainwater Harvesting has been adopted to supply WC).
<b>Hot Water Services</b>	Provided to wash-hand basin through blending valve and spray mixer tap. Provided to shower unit via blending valve complete with thermostatically controlled mixer.
<b>Above Ground Drainage</b>	Waste connection to wash-hand basins, sluice, WC, shower, etc.

## 6.24 CARETAKER'S OFFICE

<b>Planning</b>	<b>Requirements</b>
<b>Room Activities</b>	To provide a base for the school caretaker.
<b>Size</b>	Area – 5 m <sup>2</sup> .
<b>Location</b>	Preferably directly accessible from the main entrance with a vision panel permitting some supervision of this area.
<b>Layout</b>	A broad rectangle is preferred.
<b>General Guidance</b>	Good guidance on design approach is available from the DfES Building Bulletins, especially BB87 Environment, BB90 Lighting, BB93 Acoustics and BB101 Ventilation. This is in addition to publications from professional institutions associated with building design, construction and specification: eg CIBSE, RICS, RSUA and RIBA.
<b>Internal Environment</b>	<b>Requirements</b>
<b>Acoustic Performance</b>	It is recommended that the acoustic performance of the Caretaker's Office shall be broadly in accordance with the DfES Building Bulletin 93. For further detail refer to Item 5.11.
<b>Daylighting</b>	The distribution and quantity of daylight should be as good as possible. Dim-out curtains or blinds may be required. Preference should be given to normal windows as opposed to rooflights.
<b>Building Fabric</b>	<b>Requirements</b>
<b>Walls</b>	Plaster, smooth surface and capable of being easily cleaned. Wall structure capable of accepting fixings for shelves and fittings.
<b>Floors</b>	Non-slip, warm, resilient and easily cleaned non-woven anti-static carpet. Maintenance must be minimised by careful choice of colour.
<b>Ceiling</b>	Light in tone. Minimum floor to ceiling height = 2.4 m.
<b>Doors</b>	The door should have a glazed panel at suitable height for both pupils and teachers. Glass should be clear.
<b>Windows</b>	Windows should provide adequate and even daylighting. Controllable opening lights which will maintain security. Windows should be capable of being adequately screened by curtains or blinds.
<b>Ironmongery</b>	Doors lockable and windows lockable with stays or restrictors used on all opening sashes both high and low level. Operation of opening windows must be safe for occupants.
<b>Fixtures and Fittings</b>	Shelving should be adjustable for height and provided to 1 No wall. Materials and construction should be sufficiently robust to prevent sagging. Average interval between shelves - 300 mm Minimum space below bottom shelf - 750 mm Depth of shelves - 300 mm Number of shelves per wall - 4 No
<b>Storage</b>	N/A

<b>MECHANICAL AND ELECTRICAL SERVICE PROVISIONS</b>		<b>6.24 CARETAKER'S OFFICE</b>
<b>Electrical</b>	<b>Requirements</b>	
<b>General Lighting</b>	A lighting intensity of 300 lux shall be provided at the working plane. The need to avoid glare should be considered when selecting and placing fittings. Light fittings should incorporate high frequency control gear and lamps which provide good colour rendering properties.	
<b>Lighting Control System</b>	Automatic lighting controls shall be installed in this area.	

<b>Emergency Lighting</b>	Not required unless part of a defined emergency escape route, local Building Control recommendation or deemed necessary by a risk assessment.
<b>Small Power</b>	1 double cleaner's socket. 1 double computer socket outlets. (at positions agreed with the school authority).
<b>ICT Provision/Data Outlets</b>	1 single data point (RJ45) shall be provided. (at a position agreed with the school authority).
<b>ICT Provision/Voice Outlets</b>	1 single voice point (RJ45) (telephone extension) shall be provided. Location to be agreed with the school authority. Analogue telephone handset shall be provided.
<b>Dado/Skirting Trunking</b>	Aluminium (standard colour).
<b>Fire Alarm</b>	Fire alarm system extended into this area if deemed necessary and required by fire risk assessment, overall fire strategy or local Building Control requirement.
<b>Intruder Alarm</b>	Intruder alarm system extended into this area if deemed necessary and required by security strategy.
<b>Class Change</b>	Class change system extended into this area if deemed necessary and required in order to achieve necessary sound level.
<b>TV Terminal</b>	Not Required.
<b>Interactive White Board (IWB)</b>	Not Required.
<b>Ceiling Mounted Projector</b>	Not Required.
<b>BEMS Computer</b>	If a Building Energy Management (BEMS) Computer and software are to be provided under the contract then the computer/control point shall be installed within the Caretaker's Office if agreeable to the school authority.
<b>Clock Installation</b>	1 No battery operated clock shall be provided.
<b>Mechanical</b>	<b>Requirements</b>
<b>Room Temperature °C</b>	Room temperature shall be 18°C.
<b>Room Temperature Optimum Start Accuracy – Heating by Radiators and Air Handling</b>	The desired room temperature is to be achieved within 30 minutes of occupation start on 60% of occupied days in the heating season, except where self-regulating under-floor heating is the main heating source.
<b>Room Heating Response to Internal Gains</b>	Sub-zoning shall be standard provision for the Caretaker's Office and should achieve the desired room temperature response within 20 minutes controlled through the BEMS system.
<b>Heating Controls Location and Authority</b>	No room occupant control over heating temperature, start time, finish time, regular day omission, holiday days omit. All these controls to be centrally operable by facilities management. (BEMS System.)
<b>Room Ventilation</b>	In accordance with requirements stated above, statutory requirements and CIBSE, BB87, BB101, BB93 guidance. Noise from mechanical ventilation/noise transfer from other internal and external spaces, must not cause the required background noise level to be exceeded.
<b>Heating</b>	To maintain the above temperature, by compensated, optimised and sequenced controls.

## 6.25 PUPIL CHANGING AT MULTI-PURPOSE HALL

<b>Planning</b>	<b>Requirements</b>
<b>Room Activities</b>	Separate changing facilities for boys and girls.
<b>Size</b>	Overall area 24 m <sup>2</sup> , (ie each changing room to be 12 m <sup>2</sup> ).
<b>Location</b>	As close as possible to the Multi-Purpose Hall, rooms situated side by side to facilitate staff supervision.
<b>Layout</b>	A broad rectangle is preferred.
<b>General Guidance</b>	Good guidance on design approach is available from the DfES Building Bulletins, especially BB87 Environment, BB90 Lighting, BB93 Acoustics and BB101 Ventilation. This is in addition to publications from professional institutions associated with building design, construction and specification: eg CIBSE, RICS, RSUA and RIBA.
<b>Internal Environment</b>	<b>Requirements</b>
<b>Acoustic Performance</b>	It is recommended that the acoustic performance of the Pupil Changing Room shall be broadly in accordance with the DfES Building Bulletin 93. For further detail refer to Item 5.11.
<b>Daylighting</b>	The distribution and quantity of daylight should be as good as possible. See WINDOWS.
<b>Building Fabric</b>	<b>Requirements</b>
<b>Walls</b>	Plaster with easily cleaned finish. Wall structure capable of accepting fixings for coat hooks/rail.
<b>Floors</b>	Non-slip, durable and easily cleaned vinyl floor covering. Maintenance must be minimised by careful choice of colour.
<b>Ceiling</b>	Light in tone. Minimum floor to ceiling height = 2.4 m and not exceeding normal classroom height.
<b>Doors</b>	Unglazed.
<b>Windows</b>	High level opening ventilators are generally most appropriate, opaque glazed as necessary.
<b>Ironmongery</b>	Doors lockable and windows to be lockable with stays or restrictors used on all opening sashes.
<b>Fixtures and Fittings</b>	A coat hook should be provided for each pupil, 20 No minimum per Changing Room. These should be spaced at 150 mm centres in a single row on a timber wall batten at an appropriate height. The recommended clear space between parallel rows of coat rails is 1.2 m. Bench seating secured to wall/floor to be provided beneath coat rails.
<b>Storage</b>	N/A

<b>MECHANICAL AND ELECTRICAL SERVICE PROVISIONS</b>		<b>6.25 PUPIL CHANGING AT MULTI-PURPOSE HALL</b>
<b>Electrical</b>	<b>Requirements</b>	
<b>General Lighting</b>	A lighting intensity of 200 lux shall be provided at floor level. Light fittings should incorporate high frequency control gear.	
<b>Lighting Control System</b>	Automatic lighting controls shall be installed in this area.	
<b>Emergency Lighting</b>	Not required unless part of a defined emergency escape route, local Building Control recommendation or deemed necessary by a risk assessment.	
<b>Small Power</b>	1 double cleaner's socket.	

<b>ICT Provision/Data Outlets</b>	Not Required.
<b>ICT Provision/Voice Outlets</b>	Not Required.
<b>Dado/Skirting Trunking</b>	Not Required.
<b>Fire Alarm</b>	Fire alarm system extended into this area if deemed necessary and required by fire risk assessment, overall fire strategy or local Building Control requirement.
<b>Intruder Alarm</b>	Intruder alarm system extended into this area if deemed necessary and required by security strategy.
<b>Class Change</b>	Class change system extended into this area if deemed necessary and required in order to achieve necessary sound level.
<b>TV Terminal</b>	Not Required.
<b>Interactive White Board (IWB)</b>	Not Required.
<b>Ceiling Mounted Projector</b>	Not Required.
<b>Clock Installation</b>	Not Required.
<b>Mechanical</b>	<b>Requirements</b>
<b>Room Temperature °C</b>	Room temperature shall be 18°C.
<b>Room Temperature Optimum Start Accuracy – Heating by Radiators and Air Handling</b>	The desired room temperature is to be achieved within 30 minutes of occupation start on 60% of occupied days in the heating season, except where self-regulating under-floor heating is the main heating source.
<b>Room Heating Response to Internal Gains</b>	N/A
<b>Heating Controls Location and Authority</b>	No room occupant control over heating temperature, start time, finish time, regular day omission, holiday days omit. All these controls to be centrally operable by facilities management. (BEMS System.)
<b>Room Ventilation</b>	In accordance with requirements stated above, statutory requirements and CIBSE, BB87, BB101, BB93 guidance. Noise from mechanical ventilation/noise transfer from other internal and external spaces, must not cause the required background noise level to be exceeded.
<b>Heating</b>	To maintain the above temperature, by compensated, optimised and sequenced controls. Radiators or high level heating coils with TRV (Thermostatic Radiator Valves).

## 6.26 PUPIL TOILETS AT MULTI-PURPOSE HALL

Planning	Requirements
<b>Room Activities</b>	Separate toilet facilities for boys and girls.
<b>Size</b>	Overall area 15 m <sup>2</sup> , (ie each toilet to be circa 7.5 m <sup>2</sup> ).
<b>Location</b>	As close as possible to the Multi-Purpose Hall.
<b>Layout</b>	Separate toilet space for boys and girls.
<b>General Guidance</b>	Good guidance on design approach is available from the DfES Building Bulletins, especially BB87 Environment, BB90 Lighting, BB93 Acoustics and BB101 Ventilation. This is in addition to publications from professional institutions associated with building design, construction and specification: eg CIBSE, RICS, RSUA and RIBA.
Internal Environment	Requirements
<b>Acoustic Performance</b>	It is recommended that the acoustic performance of the Pupil Toilets at the MP Hall shall be broadly in accordance with the DfES Building Bulletin 93. For further detail refer to Item 5.11.
<b>Daylighting</b>	The distribution and quantity of daylight should be as good as possible. See WINDOWS.
Building Fabric	Requirements
<b>Walls</b>	Plaster with easily cleaned finish; in toilet areas an impervious finish 1.5 m high is recommended. Wall structure capable of accepting fixings for sanitary fittings, toilet partitions, etc.
<b>Floors</b>	Non-slip, durable and easily cleaned vinyl floor covering with coved vinyl skirting is recommended for toilet areas. Maintenance must be minimised by careful choice of colour.
<b>Ceiling</b>	Light in tone. Minimum floor to ceiling height = 2.4 m and not exceeding normal classroom height.
<b>Doors</b>	Unglazed doors to toilets.
<b>Windows</b>	High level opening ventilators are generally most appropriate, opaque glazed as necessary.
<b>Ironmongery</b>	Doors lockable and windows to be lockable with stays or restrictors used on all opening sashes.
<b>Fixtures and Fittings</b>	<p><b>SANITARY PROVISION</b>                      For boys, 1 WC and 2 urinals (or urinal slab).                      For girls, 2 WCs.                      In all cases 2 wash-hand basins should be provided.  <b>Spring-loaded press-down taps should NOT be used.</b></p> <p><b>WC CUBICLES</b>                      Partitions should be of an impervious, easily cleaned material, finishing 150 mm minimum above the floor. Each cubicle should have a secure fitting for toilet paper. Cubicle doors and partitions to be normal height. Doors should be fitted on the inside with a suitable fastening which, in the case of emergency, can be readily released from the outside.</p> <p><b>GENERAL</b>                      Hand-drying facilities to be provided.                      A wall mounted mirror at a suitable height is recommended above all wash-hand basins.</p>
<b>Storage</b>	N/A

<b>MECHANICAL AND ELECTRICAL SERVICE PROVISIONS</b>		<b>6.26 PUPIL TOILETS AT MULTI-PURPOSE HALL</b>
<b>Electrical</b>	<b>Requirements</b>	
<b>General Lighting</b>	A lighting intensity of 200 lux shall be provided at floor level. Light fittings should incorporate high frequency control gear.	
<b>Lighting Control System</b>	Automatic lighting controls shall be installed in this area.	
<b>Emergency Lighting</b>	Emergency lighting shall be provided in this area.	
<b>Small Power</b>	Not Required.	
<b>Hand Dryer</b>	If hand driers are to be the preferred option of hand-drying facilities in toilet areas then these units shall be supplied under the contract. Hand-dryer units shall be robust in construction and vandal resistant. All necessary power supplies shall be provided within the contract. Hand-dryer circuits shall have RCD protection.	
<b>ICT Provision/Data Outlets</b>	Not Required.	
<b>ICT Provision/Voice Outlets</b>	Not Required.	
<b>Dado/Skirting Trunking</b>	Not Required.	
<b>Fire Alarm</b>	Fire alarm system extended into this area if deemed necessary and required by fire risk assessment, overall fire strategy or local Building Control requirement.	
<b>Intruder Alarm</b>	Intruder alarm system extended into this area if deemed necessary and required by security strategy.	
<b>Class Change</b>	Class change system extended into this area if deemed necessary and required in order to achieve necessary sound level.	
<b>TV Terminal</b>	Not Required.	
<b>Interactive White Board (IWB)</b>	Not Required.	
<b>Ceiling Mounted Projector</b>	Not Required.	
<b>Clock Installation</b>	Not Required.	
<b>Mechanical</b>	<b>Requirements</b>	
<b>Room Temperature °C</b>	Room temperature shall be 15°C, to maintain the fabric of the building and the furniture or equipment therein.	
<b>Room Temperature Optimum Start Accuracy – Heating by Radiators and Air Handling</b>	The desired room temperature is to be achieved within 30 minutes of occupation start on 60% of occupied days in the heating season, except where self-regulating under-floor heating is the main heating source.	
<b>Room Heating Response to Internal Gains</b>	N/A	
<b>Heating Controls Location and Authority</b>	No room occupant control over heating temperature, start time, finish time, regular day omission, holiday days omit. All these controls to be centrally operable by facilities management. (BEMS System.)	
<b>Room Ventilation</b>	In accordance with requirements stated above, statutory requirements and CIBSE, BB87, BB101, BB93 guidance. Noise from mechanical ventilation/noise transfer from other internal and external spaces, must not cause the required background noise level to be exceeded.	

<b>Heating</b>	To maintain the above temperature, by compensated, optimised and sequenced controls. Radiators or high level heating coils with TRV (Thermostatic Radiator Valves).
<b>Potable Water Services</b>	Provided to wash hand basins via spray mixer tap, WC's and urinals (except where Rainwater Harvesting has been adopted to supply WCs and urinals).
<b>Hot Water Services</b>	Provided to wash hand basins through blending valve and spray mixer tap.
<b>Above Ground Drainage</b>	Waste connection to wash-hand basins, urinals, WCs, etc.

## 6.27 COMPUTER HUB ROOM

Planning	Requirements
<b>Room Activities</b>	Dedicated location of ICT computer server and associated equipment.
<b>Size</b>	Area – 5 m <sup>2</sup> .
<b>Location</b>	Preferably in a central location with careful consideration given to minimising the length of cable runs. Siting at an external wall will provide the option of natural ventilation. Accessed from internal circulation/corridor.
<b>Layout</b>	A broad rectangle is preferred.
<b>General Guidance</b>	Good guidance on design approach is available from the DfES Building Bulletins, especially BB87 Environment, BB90 Lighting, BB93 Acoustics and BB101 Ventilation. This is in addition to publications from professional institutions associated with building design, construction and specification: eg CIBSE, RICS, RSUA and RIBA.
Internal Environment	Requirements
<b>Acoustic Performance</b>	It is recommended that the acoustic performance of the Computer Hub Room shall be broadly in accordance with the DfES Building Bulletin 93. For further detail refer to Item 5.11.
<b>Daylighting</b>	Not required. See WINDOWS.
Building Fabric	Requirements
<b>Walls</b>	Plain and light in tone. Smooth and free from projections and capable of being easily cleaned.
<b>Floors</b>	Non-slip durable and easily cleaned anti static floor covering. Maintenance must be minimised by careful choice of colour.
<b>Ceiling</b>	Light in tone. Minimum floor to ceiling height = 2.4 m and not exceeding normal classroom height.
<b>Doors</b>	Unglazed.
<b>Windows</b>	For security reasons, windows or rooflights must not be provided.
<b>Ironmongery</b>	Doors to be lockable, self-closing.
<b>Fixtures and Fittings</b>	N/A
<b>Storage</b>	N/A

MECHANICAL AND ELECTRICAL SERVICE PROVISIONS		6.27 COMPUTER HUB ROOM
Electrical	Requirements	
<b>General Lighting</b>	A lighting intensity of 300 lux shall be provided at floor level. The need to avoid glare should be considered when selecting and placing fittings. Light fittings should incorporate high frequency control gear and lamps which provide good colour rendering properties.	
<b>Lighting Control System</b>	Automatic lighting controls shall be installed in this area.	
<b>Emergency Lighting</b>	Emergency lighting shall be provided in this area.	
<b>Small Power</b>	1 double cleaner's socket. A number of clean power sockets shall be provided to suit the ICT equipment requirements within the Computer Hub Room.	
<b>Other Power</b>	Power supplies shall be provided for ventilation (supply air and extract fans) which may be required. This shall include all control cabling for speed controllers, etc. Ventilation system if required shall be provided under the Mechanical contract.	

<b>ICT Provision/Data Outlets</b>	A number of data outlets shall be provided to suit the ICT equipment requirements within the Computer Hub Room.
<b>ICT Provision/Voice Outlets</b>	A number of voice outlets shall be provided to suit the ICT equipment requirements within the Computer Hub Room.
<b>Dado/Skirting Trunking</b>	Aluminium (standard colour).
<b>Fire Alarm</b>	Fire alarm system automatic detection should be provided in this area in addition to other fire alarm equipment which may be required as part of the fire risk assessment, overall fire strategy or local Building Control requirement.
<b>Intruder Alarm</b>	Intruder alarm system coverage should be provided in this area.
<b>Class Change</b>	Class change system extended into this area if deemed necessary and required in order to achieve necessary sound level.
<b>TV Terminal</b>	Not Required.
<b>Interactive White Board (IWB)</b>	Not Required.
<b>Ceiling Mounted Projector</b>	Not Required.
<b>Clock Installation</b>	Not Required.
<b>Temperature Limit Alarm</b>	Provision of a temperature limit alarm shall be considered. Purpose, to alert the school of excessively high temperatures within the Computer Hub Room.
<b>Comms Cabinet</b>	Suitably sized to accommodate the schools ICT requirements. Cabinet shall be centrally located within the room with clear access all around for maintenance purposes.
<b>Mechanical</b>	<b>Requirements</b>
<b>Room Temperature °C</b>	Room temperature shall be 15°C, to maintain the fabric of the building and the furniture or equipment therein and allowed to rise to a maximum of 28°C due to internal heat gain from equipment.
<b>Room Temperature Optimum Start Accuracy – Heating by Radiators and Air Handling</b>	The desired room temperature is to be achieved within 30 minutes of occupation start on 60% of occupied days in the heating season, except where self-regulating under-floor heating is the main heating source.
<b>Room Heating Response to Internal Gains</b>	N/A
<b>Heating Controls Location and Authority</b>	No room occupant control over heating temperature, start time, finish time, regular day omission, holiday days omit. All these controls to be centrally operable by facilities management. (BEMS System.)
<b>Room Ventilation</b>	In accordance with requirements stated above, statutory requirements and CIBSE, BB87, BB101, BB93 guidance. Noise from mechanical ventilation/noise transfer from other internal and external spaces, must not cause the required background noise level to be exceeded. Air cooling is to be achieved by natural means where possible.
<b>Heating</b>	To maintain the above temperature, by compensated, optimised and sequenced controls

## 6.28 ENTRANCE/CIRCULATION/CORRIDOR

<b>Planning</b>	<b>Requirements</b>
<b>Room Activities</b>	To provide circulation into and throughout the school for pupils, staff and visitors. The entrance area shall be open, bright, interesting and provide a sense of welcome.
<b>Size</b>	The entrance lobby should be adequate to provide reasonable circulation in a pleasing environment. Direct access to the General Office/enquiries and the Multi-Purpose Hall is desirable. Overall area for circulation to be the minimum consistent with good planning subject to certain critical dimensions.
<b>Location</b>	As required.
<b>Layout</b>	Entrance lobby, not specific. Corridors should normally be 2.0 m clear width (ie free from structural projections), wider corridors may be necessary at points of possible congestion. The width can be reduced to 1.5 m for any corridor which serves not more than 3 classrooms, which is not a main artery of circulation and is preferably not sub-divided at any point by doors.
<b>General Guidance</b>	Good guidance on design approach is available from the DfES Building Bulletins, especially BB87 Environment, BB90 Lighting, BB93 Acoustics and BB101 Ventilation. This is in addition to publications from professional institutions associated with building design, construction and specification: eg CIBSE, RICS, RSUA and RIBA.
<b>Internal Environment</b>	<b>Requirements</b>
<b>Acoustic Performance</b>	It is recommended that the acoustic performance of the Entrance/Circulation/Corridor shall be broadly in accordance with the DfES Building Bulletin 93. For further detail refer to Item 5.11.
<b>Daylighting</b>	Good natural light in the entrance lobby is desirable. The level and distribution of daylight in corridors should be as good as possible. Roof, clerestory or borrowed light should where necessary be included.
<b>Building Fabric</b>	<b>Requirements</b>
<b>Walls</b>	Plain and light in tone. Corridor walls shall be smooth and free from projections and of a material that is durable and a finish which does not mark easily. Wall structure capable of accepting fixings for notice boards, display cabinets, etc.
<b>Floors</b>	Non-slip, resilient and easily cleaned. A suitable area of clean-off zone mat-well to be provided at entrance doors. Maintenance must be minimised by careful choice of colour.
<b>Ceiling</b>	Light in tone. Minimum floor to ceiling height = 2.7 m.
<b>Doors</b>	Location of and requirements for external doors and internal doors for building compartmentation to comply with current Building Regulations (NI). Minimum width of corridor doors to comply with current Building Regulations (NI). Doors to corridors or lobbies shall have clear glazed panels of suitable height for both pupils and teachers.
<b>Windows</b>	Windows on landings and staircases should be adequately guarded or appropriately glazed. See paragraph 5.3 Safety.
<b>Ironmongery</b>	It is desirable to secure the main area of the school beyond the entrance foyer especially if the Multi-Purpose Hall opens off the foyer. However locking method to be carefully considered to ensure means of emergency escape is not compromised.
<b>Fixtures and Fittings</b>	No display boarding should be provided in “dead-end” corridors, but extensive provision is desirable elsewhere in corridors.
<b>Storage</b>	N/A

<b>MECHANICAL AND ELECTRICAL SERVICE PROVISIONS</b>		<b>6.28 ENTRANCE/CIRCULATION/ CORRIDOR</b>
<b>Electrical</b>	<b>Requirements</b>	
<b>General Lighting</b>	A lighting intensity of 150 lux shall be provided at floor level. A combination of up/down lighting may be considered. The need to avoid glare should be considered when selecting and placing fittings. The fittings should be circuited and switched in such a manner as to provide flexibility. Light fittings should incorporate high frequency control gear.	
<b>Lighting Control System</b>	Automatic lighting controls shall be installed in this area.	
<b>Emergency Lighting</b>	Emergency lighting shall be provided in this area.	
<b>Small Power</b>	Adequate number of general purpose sockets shall be provided for cleaner's use within circulation areas.	
<b>ICT Provision/Data Outlets</b>	Not Required.	
<b>ICT Provision/Voice Outlets</b>	Not Required.	
<b>Dado/Skirting Trunking</b>	Not Required.	
<b>Fire Alarm</b>	Fire alarm system automatic detection should be provided within circulation areas in addition to other fire alarm equipment which may be required as part of the fire risk assessment, overall fire strategy or local Building Control requirements. Fire alarm panel to be located in lobby.	
<b>Intruder Alarm</b>	Intruder alarm system extended into this area if deemed necessary and required by security strategy.	
<b>Class Change</b>	Class change system bells or sounders should be installed within circulation areas.	
<b>TV Terminal</b>	Not Required.	
<b>Interactive White Board (IWB)</b>	Not Required.	
<b>Ceiling Mounted Projector</b>	Not Required.	
<b>Clock Installation</b>	1 No battery operated clock shall be provided.	
<b>Mechanical</b>	<b>Requirements</b>	
<b>Room Temperature°C</b>	Room temperature shall be 15°C, to maintain the fabric of the building and the furniture or equipment therein.	
<b>Room Temperature Optimum Start Accuracy – Heating by Radiators and Air Handling</b>	The desired room temperature is to be achieved within 30 minutes of occupation start on 60% of occupied days in the heating season, except where self-regulating under-floor heating is the main heating source.	
<b>Room Heating Response to Internal Gains</b>	N/A	
<b>Heating Controls Location and Authority</b>	No room occupant control over heating temperature, start time, finish time, regular day omission, holiday days omit. All these controls to be centrally operable by facilities management. (BEMS System.)	

<b>Heating Zoning</b>	Individual zoned heating shall be provided.
<b>Room Ventilation</b>	In accordance with requirements stated above, statutory requirements and CIBSE, BB87, BB101, BB93 guidance. Noise from mechanical ventilation/noise transfer from other internal and external spaces, must not cause the required background noise level to be exceeded.
<b>Heating</b>	To maintain the above temperature, by compensated, optimised and sequenced controls.
<b>Potable Water Services</b>	Serving a drinking water dispenser (if provided by the school) in this specific area.
<b>Above Ground Drainage</b>	Waste connection to drinking water dispenser must be considered as a permanent position.
<b>Cooling</b>	None

## 6.29 MULTI PURPOSE 1 STORE

Planning	Requirements
<b>Room Activities</b>	Storage of all forms of learning material, pupils' project work, etc.
<b>Size</b>	Area – 5 m <sup>2</sup> .
<b>Location</b>	En suite to Multi-Purpose Room 1.
<b>Layout</b>	A broad rectangle is preferred.
<b>General guidance</b>	Good guidance on design approach is available from the DfES Building Bulletins, especially BB87 Environment, BB90 Lighting, BB93 Acoustics and BB101 Ventilation. This is in addition to publications from professional institutions associated with building design, construction and specification: eg CIBSE, RICS, RSUA and RIBA.
Internal Environment	Requirements
<b>Acoustic Performance</b>	It is recommended that the acoustic performance of the MP1 Store shall be broadly in accordance with the DfES Building Bulletin 93. For further detail refer to Item 5.11.
<b>Daylighting</b>	See WINDOWS.
Building Fabric	Requirements
<b>Walls</b>	Plaster, smooth surface and capable of being easily cleaned. Wall structure capable of accepting fixings for shelves and fittings.
<b>Floors</b>	Non-slip durable and easily cleaned vinyl floor covering. Maintenance must be minimised by careful choice of colour.
<b>Ceiling</b>	Light in tone. Minimum floor to ceiling height = 2.4 m.
<b>Doors</b>	Unglazed and opening outward directly into the Multi -Purpose Room.
<b>Windows</b>	For security and storage reasons, windows should not be provided. Rooflights must not be provided.
<b>Ironmongery</b>	Doors to be lockable.
<b>Fixtures and Fittings</b>	Shelving should be adjustable for height and provided to all walls. Materials and construction should be sufficiently robust to prevent sagging. In the interests of safety, wood cladding should be provided for the exposed ends of any metal shelving. Average interval between shelves - 300 mm Minimum space below bottom shelf - 750 mm Depth of shelves - 300 mm Number of shelves per wall - 5 No 2 No walls to have 500 mm deep bottom shelf.
<b>Storage</b>	N/A

MECHANICAL AND ELECTRICAL SERVICE PROVISIONS		6.29 MULTI PURPOSE 1 STORE
Electrical	Requirements	
<b>General Lighting</b>	A lighting intensity of 200 lux shall be provided at floor level. Location and orientation of storage shelves shall be taken into account when positioning light fittings. Light fittings should incorporate high frequency control gear.	
<b>Lighting Control System</b>	Automatic lighting controls shall be installed in this area.	
<b>Emergency Lighting</b>	Not required unless this room is part of a defined emergency escape route local Building Control recommendation or deemed necessary by a risk assessment.	
<b>Small Power</b>	1 double cleaner's socket.	

<b>ICT Provision/Data Outlets</b>	Not Required.
<b>ICT Provision/Voice Outlets</b>	Not Required.
<b>Dado/Skirting Trunking</b>	Not Required.
<b>Fire Alarm</b>	Fire alarm system extended into this area if deemed necessary and required by fire risk assessment, overall fire strategy or local Building Control requirement.
<b>Intruder Alarm</b>	Intruder alarm system extended into this area if deemed necessary and required by security strategy.
<b>Class Change</b>	Class change system extended into this area if deemed necessary and required in order to achieve necessary sound level.
<b>TV Terminal</b>	Not Required.
<b>Interactive White Board (IWB)</b>	Not Required.
<b>Ceiling Mounted Projector</b>	Not Required.
<b>Clock Installation</b>	Not Required.
<b>Mechanical</b>	<b>Requirements</b>
<b>Room Temperature °C</b>	Room temperature shall be 15°C, to maintain the fabric of the building and the furniture or equipment therein.
<b>Room Temperature Optimum Start Accuracy – Heating by Radiators and Air Handling</b>	The desired room temperature is to be achieved within 30 minutes of occupation start on 60% of occupied days in the heating season, except where self-regulating under-floor heating is the main heating source.
<b>Room Heating Response to Internal Gains</b>	N/A
<b>Heating Controls Location and Authority</b>	No room occupant control over heating temperature, start time, finish time, regular day omission, holiday days omit. All these controls to be centrally operable by facilities management. (BEMS System.)
<b>Room Ventilation</b>	In accordance with requirements stated above, statutory requirements and CIBSE, BB87, BB101, BB93 guidance. Noise from mechanical ventilation/noise transfer from other internal and external spaces, must not cause the required background noise level to be exceeded.
<b>Heating</b>	To maintain the above temperature, by compensated, optimised and sequenced controls. High level heating coils with TRV (Thermostatic Radiator Valves).

## 7.0 APPENDICES

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- APPENDIX 1 - GENERAL MECHANICAL AND ELECTRICAL SPECIFICATION
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- APPENDIX 4 - DIAGRAMMATIC ROOM RELATIONSHIPS
- APPENDIX 5 - POSSIBLE CLASSROOM CLUSTER LAYOUT
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# APPENDIX 1

## GENERAL MECHANICAL AND ELECTRICAL SPECIFICATION

### MECHANICAL INSTALLATION

#### PLUMBING

Roof space cold water storage is not a fundamental requirement in the design of mechanical services, when supplying cold water in schools. Rain Water Harvesting should be included for the supply of water to WCs and urinals, unless site conditions are unsuitable, supplemented with mains water as necessary.

Direct mains water should be provided throughout the entire school, complete with remote isolation at all entry points to the building, serving classrooms sinks, toilets, Staff Rom and other specific areas.

Classroom and Staff Room sinks, etc to have separate taps for hot and cold services. Suitably designed spring activated blended tap fittings should be used for all toilet wash-hand basins, only one tap per basin is considered adequate, complete with a fine spray economiser outlet. Individually controlled thermostatic lockable blending valve. A range of toilet sinks should be individually controlled by a thermostatic lockable blending valve giving a limiting maximum temperature of 43%. Passive Infra-Red type taps (PIR), should be considered for the Health and Safety aspects to reduce the transmission of germs and infection, also a similar activation method could be introduced to WCs.

Drinking fountains are not considered good H&S practice, but chilled fresh water dispensers located in appropriate circulation areas are acceptable. The location of these units is critical from a fixed drainage aspect. Suitable filtration should be provided to avoid bacteria growth ie, (Crypto Sporidium), and come with the NSF certification, with a push-back tap.

Cleaner's sinks should have a suitable supply of hot water, provided by point of use gas or electric water heaters, controlled by a 7-day timer to eliminate standing losses, and avoid bringing on the main boiler load, when cleaning services occur outside normal teaching hours or holiday periods.

Domestic hot water storage should be limited to demand only by the use of high recovery direct fired cylinders or plate exchangers, principally for SMA services, or toilets, which are located a considerable distance from the main boiler plant. Also local hot water storage is preferable, fed from a primary unmodulated heating circuit. (Long runs of domestic hot water return piping "dead legs" should be avoided.)

Solar panels may be considered a suitable aid to raising mains water to a level that reduces the demand on boiler power, provided the design can justify the need, when initial SBEM calculations are being prepared.

All plumbing services should be routed, where possible, in corridor suspended ceilings, rather than randomly tracked throughout roof voids.

Service piping in toilets should be hidden, with an adequate number of isolating valves for the purpose of maintenance isolation.

Fire hydrants should remain off site, when not required to meet the Fire Authority's ruling on position and distance.

## HEATING

Traditional heating plant should generally adopt the concept of a modular boiler arrangement, to reduce thermal shock and preserve the life of the equipment. All boilers should have a standard condensing mode.

Since the introduction of enhanced thermal values in school buildings, boiler capacities should be significantly reduced through better designed equipment and methodology, complete with a closed pressurised heating system.

Areas of the school could be in use outside normal teaching hours and therefore zoning of the heating system should be adopted.

Positioning the heating plant room within the constraints of the Architectural layout is an important design factor, both from good practice and economics, while obtaining sufficient operating space for preventive maintenance on equipment, and avoiding a periphery location or annexe in the building, where possible.

Vehicle access plays a major role in the provision of external services, in order to maintain the heating and hot water services by the use of appropriate fuels ie, (Oil, LPG, Biomass Woodchips and Pellets, etc). Storage should be adequately secured against tampering and vandalism.

Oil Tank Catchments should avoid any possibility of an accident occurring regarding fuel entering the eco system via storm drains, when removing the rain water.

Bulk LPG or natural gas should have the necessary pressure proving devices installed in the boilerhouse. Also the kitchen, should have a similar PPD linked to the extraction ventilation in the canopy. In rural areas particularly, heating design to the school and cooking in the SMA should consider a shared but separately metered gas supply to avoid different deliveries.

Underfloor heating should continue to be considered, since the introduction of enhanced thermal values, reduces temperature swing and reaction times are less critical and easier controlled. Conventional radiators restrict teaching space particularly LST's radiators. Radiators hidden behind cupboards, equipment or student displays will have reduced output. High level heating should only be considered in specific areas such as stores and toilets, (heating coils are more labour intensive to install than most suitable radiators).

Where underfloor heating is proposed, manifolds and associated services shall be enclosed within a separately planned space ie not exposed within rooms, stores, etc.

Endeavouring to minimise distribution zones and avoid clashes with electrical services, positioning of each element should be clearly defined.

Flues and chimneys should maintain the same diameter from each smoke box at the back of the individual boiler to the discharge at high level, common flues are unacceptable.

### VENTILATION SERVICES

Classroom ventilation shall be in accordance with the appropriate guidance laid down in CIBSE, BB87, BB101 and BB93.

Natural ventilation, through conventional means ie, opening windows to outside, providing ambient air at a suitable temperature, is limited to a short period of weeks, and winter conditions will render this form of fresh air inoperable unless supplemented by a tempered heating coil.

Mechanical ventilation through heat transfer, from the purged extract air with a higher than 1,550ppm of CO<sub>2</sub>, to the incoming fresh air by means of a Recuperator/Heat Pump/Run around glycol coils appears to resolve this problem, but at a cost. Monitoring CO<sub>2</sub> only is required in occupied areas.

All occupied internal rooms require the introduction of fresh air, through ventilation ducting or rooflights.

Assembly/multi-purpose/dining halls should have suitably designed ventilated supply/extract to deal with various numbers of occupants, with a high functional level ie, examines, low physical activity to a high level for sports and drama with above average level of occupancy similarly to that at morning assembly or audiences at school plays.

Kitchen ventilation should be designed in conjunction with the Building Handbook SMA Section 5 part 3 clause 3.49 and the canopy ventilation extract should be linked to the gas pressuring proving device.

The ventilation should where possible operate with the make up air introduced via an induction canopy (double skin Plenum) to diffuse the cooler air around the operatives before extracting. The modular ceiling arrangement/extraction system is considered too expensive and cleaning is also too labour intensive in the summer holiday period, only available for this process.

All toilets shall have permanent vents independent of the window system and make up air shall be via natural means assisted by the extraction system at a rate of air changes referred to in the Building Regulation (6 air changes per hour). The extract fan should run for the entire period of the daily regime. Frequency inverters should maintain a constant negative pressure to overcome any in-balance by external wind pressure, and avoid the ingress of any unpleasant odours.

Staff Room and stores should have permanent natural ventilation independent of the window system.

Boilerhouse should have adequate ventilation for combustion. If natural gas is the fuel a mixed flue/fresh air dilution discharge arrangement at a lower level could be considered. Appropriate make up air at plant room floor level is necessary when using natural gas as the fuel.

## **ELECTRICAL INSTALLATION**

The entire electrical installation shall be provided in accordance with the relevant British Standards, Codes of Practice, latest edition of the wiring regulations (BS 7671) including amendments and in compliance with the requirements of local authorities and statutory bodies.

### **CABLE DISTRIBUTION**

Cable distribution throughout the school building shall be carried out using the following:

#### **STEEL CONDUIT**

All conduits shall be heavy gauge, welded, screwed steel and hot dipped galvanised inside and outside.

The conduit shall conform to BS 4568 and class 4.

The smallest size of conduit permitted shall be 20 mm external diameter.

All conduits shall terminate in bushed boxes or boxes fitted with brass bushes, or shall be otherwise bushed in an approved manner to prevent damage to the wiring.

Couplings and accessories, etc shall be heavy gauge. Light gauge couplings as provided with conduit lengths will not be acceptable. Conduits shall be securely fastened in position by galvanised saddles spaced not further apart than 1.2 m. The use of crampets or clips will not be permitted. Distance saddles shall be used where conduits are run outdoors. Spacer bar saddles shall be used where conduits are run indoors, except that where they are concealed in plaster ordinary saddles may be used. Multiple saddles shall be used where required. Slotted holes are not acceptable.

In general the wiring to machines, equipment, etc shall be completely enclosed in conduit, using rigid conduit connections to gear which is bolted to walls, floors or benches and which does not display movement. Short lengths of galvanised watertight flexible conduit shall be used for the final connections to other gear which does display movement.

#### **FLEXIBLE CONDUIT**

Flexible conduit shall be galvanised watertight pattern terminating in galvanised malleable iron clamp adaptors. The pinching screw type of adaptor is not acceptable.

## TRUNKING

Trunking, covers, bends, tees and other accessories shall be constructed out of mild steel, not less than 1.5 mm thick, galvanised after fabrication. The trunking shall have 2 inturned flanges and the covers which shall have overlapping flanges shall be fastened thereto by OBA mushroom headed brass screws of length accurately chosen to prevent damage to the wiring within the trunking.

Manufacturers' bends, tees, offsets, reducing pieces, etc must be used except where specials are required.

Conduits shall be coupled to cable trunking by means of flanged couplers, bronze cutter washers and smooth bore brass bushes.

Trunking shall be suitably sized for present use with at least 25% spare capacity allowed for future use.

## CABLE TRAY

Cable trays shall be manufactured from perforated sheet steel, galvanised after manufacture, of a minimum thickness of 1.8 mm for 300 mm wide and below 2.0 mm for widths above 300 mm. Cable trays shall be of the returned flange type with a 25 mm upstand with an 8 mm return. Cable tray accessories (bends, tees, etc) shall be from the manufacturers' range.

Trays shall be suitably sized for present use with at least 25% spare capacity allowed for future use.

## CABLE WIRE TRAY

Cable wire tray may be considered for the distribution of cabling and should be installed in accordance with manufacturers' recommendations. All accessories (bends, tees, supports), etc should be selected from the manufacturers' range.

Cable wire tray shall be suitably sized for present use with at least 25% spare capacity allowed for future use.

## DADO/SKIRTING TRUNKING

Surface mounted multi-compartment aluminium dado or skirting trunking shall be installed where a concentration of electrical socket outlets or IT points is recommended or, where justifiable, to provide for increased flexibility. The trunking shall be suitably sized for present use with at least 25% spare capacity allowed for future use. Trunking shall comply with the relevant British Standard and all trunking accessories (bends, tees, etc) shall be from the manufacturers' range.

## GENERAL LIGHTING INSTALLATION

All fluorescent luminaires shall have a 2 amp fuse incorporated within its housing, and shall be of the high frequency or low loss type.

Modular light fittings should be rigidly supported from the building fabric by way of 4 No 8 mm galvanised threaded rods fixed direct to the building structure. Fittings smaller than a ceiling tile shall be fixed to 6 mm plywood backboards. Suspended or floating light fittings should be rigidly supported from the building fabric using manufacturers' accessories.

The lighting installation shall be wired utilising LSF insulated single core cables drawn into galvanised trunkings and/or HGSW galvanised steel conduits flush mounted in the fabric of the building, and installed on the surface of walls and ceilings in Plant Rooms (only). Lighting circuit wiring shall be a minimum size of 1.5 mm<sup>2</sup>.

For energy saving purposes light fittings installed adjacent to windows shall generally be controlled from the same light switch. Light switches shall comply with BS 3676 in all respects. Mounting height for light switches shall be in accordance with DDA requirements. Light switches shall form matching units with other accessories such as socket, connection units etc.

## LIGHTING CONTROL SYSTEM

An automatic lighting control system shall be provided throughout the school as detailed within the room data sheets. System shall have capability to dim down light fitting output levels or alternatively switch off when lighting levels have reached a pre-determined level.

Generally systems shall incorporate the following:

- Detectors (sensing movement).
- Detectors (sensing natural daylight levels).

Type of detector installed within a particular area of the school shall be dependant upon room use and an assessment of which detector would be the most effective and efficient. Generally movement detectors shall be wall or ceiling mounted while daylight detectors shall be an integral part of the light fitting.

Light fittings should be arranged and switched in order to achieve the most energy efficient solution.

A 2-position maintenance keyswitch shall be provided to permit the automatic switching arrangement to be over-riden to give a hand/auto switching arrangement.

The lighting control system shall be fully commissioned and the certificates shall be included within the electrical O & M manual to be provided under the electrical contract. Operation of the system shall be demonstrated and fully explained to the school. The system shall be maintained for 12 months after completion and future maintenance requirements shall be highlighted to the school and recorded within the O & M manual.

## EXTERNAL LIGHTING/SECURITY INSTALLATION

An external lighting installation shall be provided using vandal resistant weatherproof, low energy type luminaires at entrances, loading bays, main car park and in locations to suit the CCTV system layout. Ease of maintainability shall be taken into account during the design of the external lighting installation. Appropriate external lighting controls shall be provided to suit end-user requirements and site security ie movement sensors, timeclock photocell etc.

## EMERGENCY LIGHTING

An emergency lighting and escape lighting installation shall be provided in compliance with BS 5266 (latest version incorporating latest amendments) and local Building Control recommendations.

Generally the emergency lighting and escape lighting installation shall be provided throughout all circulation/emergency escape routes and high risk locations. Emergency lighting and escape lighting installation shall generally comprise a system of 3-hour duration non-maintained and maintained self-contained emergency luminaires and illuminated exit signs. Each emergency luminaire shall incorporate a self-test facility.

Alternatively the emergency lighting and escape lighting installation may be provided by the use of stand alone LED fittings.

Key operated test switches shall be provided for testing of the emergency lighting and escape lighting installation with switches located centrally in a position agreed with the school authority.

The emergency lighting and escape lighting system shall be fully commissioned and the certificates shall be included within the electrical O & M manual to be provided under the electrical contract. Operation of the system shall be demonstrated and fully explained to the school. The system shall be maintained for 12 months after completion and future maintenance and testing requirements of the system shall be highlighted to the school and recorded within the O & M manual.

An emergency lighting and escape lighting logbook shall be provided to the school.

## FIRE ALARM

A fire alarm system shall be provided in compliance with BS 5839, part 1 (latest version incorporating latest amendments) and local Building Control recommendations.

System design should be in accordance a category L4/M system as defined by BS 5839.

Strobes shall only be installed in Multi-Purpose Hall and other areas of the school building in which members of the public are likely to enter and remain unsupervised.

Fire alarm system should be linked to an alarm receiving centre (ARC) through the intruder detection system (IDS) telephone line.

Fire alarm system shall be equipped with an internal power supply unit which shall be fully monitored by the control panel. The internal power supply shall a capacity of 72 hours.

The fire alarm system shall be equipped with the necessary number of auxiliary relay outputs required to interface with other system ie door access points, mechanical plant, lift etc.

For schools which are bigger than 8-class base an addressable fire alarm system shall be provided.

The fire alarm system shall be fully commissioned and the certificates shall be included within the electrical O & M manual to be provided under the electrical contract. Operation of the system shall be demonstrated and fully explained to the school. The system shall be maintained for 12 months after completion and future maintenance and testing requirements of the system shall be highlighted to the school and recorded within the O & M manual.

A fire alarm logbook shall be provided to the school.

### INTRUDER DETECTION SYSTEM

An intruder alarm system shall be provided throughout the school to comply with PD6662:2004 and DD243:2004 incorporating alarm confirmation technology.

System shall be installed to comply with ACPO 2000, PD 6662:2004 and DD243:2004 with regard to transmitting confirmed activations and setting/unsetting requirements.

Intruder alarm system shall be equipped with an internal power supply unit.

Intruder alarm system shall come complete with redcare facility.

Facility for remote monitoring of the fire alarm panel via the intruder alarm monitoring station shall be provided.

Generally the intruder detection system shall monitor all ground floor external windows, external doors and circulation areas at higher levels. Ease of entry via flat roofs shall be taken into account and rooms containing items of a valuable nature should be provided with coverage.

The intruder alarm system shall be fully commissioned and the certificates shall be included within the electrical O & M manual to be provided under the electrical contract. Operation of the system shall be demonstrated and fully explained to the school. The system shall be maintained for 12 months after completion and future maintenance and testing requirements of the system shall be highlighted to the school and recorded within the O & M manual.

### CCTV SYSTEM

An external only camera digital colour/black and white CCTV system shall be provided for school security purposes. Only fixed head cameras shall be provided (no PTZ cameras).

The CCTV system should be designed to monitor main entrance/exit points, main car park, and other areas deemed to be at a high risk level. The CCTV cameras shall be fitted with PIR control to record only when movement has been detected. The hard drive of the system shall be suitably sized in order to record a period of 28 consecutive days.

Two No viewing monitors shall be provided (1 No in the Principal's or Vice-Principal's Office with the second in the General Office). Recording equipment shall be located in a position agreed with the school.

The CCTV system shall be fully commissioned and the certificates shall be included within the electrical O & M manual to be provided under the electrical contract. Operation of the system shall be demonstrated and fully explained to the school. The system shall be maintained for 12 months after completion and future maintenance and testing requirements of the system shall be highlighted to the school and recorded within the O & M manual.

### LIGHTNING PROTECTION

A lightning protection system shall be provided if deemed necessary by a risk assessment calculation. System shall be provided in compliance with BS 6651 (latest version incorporating latest amendments).

### SOCKET OUTLET INSTALLATION

All twin socket outlets apart from the cleaner sockets shall be fitted with 2 earth terminals to provide a double earth facility to comply with BS 7671.

Computer socket outlets shall be fed via 32 amp miniature circuit breakers (MCB) protected with 30 mA earth leakage tripping device and be wired as ring circuits enclosed in HGWS steel trunking/conduit and/or aluminium dado/skirting trunking. Wiring shall be a minimum of 2.5 mm<sup>2</sup> PVC stranded cables with 2.5 mm<sup>2</sup> PVC stranded circuit protective conductor (CPC). Each leg of the CPC shall be connected in separate terminal holes in the distribution board earthing bar. There should be a maximum of 6 double socket outlets per circuit.

Refer to the appropriate room data sheet for the recommended number of electrical and ICT points.

A separate double socket outlet outside the data/voice power circuits shall be provided for cleaning purposes and should be labelled 'For Cleaner's Use Only'.

Socket outlets not mounted within skirting/dado trunking shall be mounted at a height to satisfy DDA requirements. Generally socket outlets and all other accessories shall contrast with background wall finishes to satisfy DDA.

Switched socket outlets shall form matching units with the other accessories such as light switches, fused connection units etc.

### CLASS CHANGE SYSTEM

An automatic and dedicated class change system shall be provided throughout the school. The class change system shall be independent of the fire alarm system. Sound of class change system shall be unique and distinguishable from all other systems within the school.

Class change system, sound level should be audible throughout all areas of the school with sound level from sounders or bells adjustable.

Class change sounders or bells shall be kept out of classrooms as far as possible without compromising sound level and audibility of system throughout school.

The class change system shall be fully commissioned and the certificates shall be included within the electrical O & M manual to be provided under the electrical contract. Operation of the system shall be demonstrated and fully explained to the school. The system shall be maintained for 12 months after completion and future maintenance and testing requirements of the system shall be highlighted to the school and recorded within the O & M manual.

### INDUCTION LOOP SYSTEM

Induction loop systems shall be provided in the following areas:

Multi-Purpose Hall.  
General Office.

Each system must be licensed with the relevant forms completed and submitted to the relevant authority. Each system shall be fully commissioned with test results recorded. Commissioning certificates shall be included within the electrical O & M manuals to be provided.

System shall be maintained for 12 months after completion and future maintenance requirement shall be fully explained to the school and recorded within the O & M manual.

### DISABLED REFUGE ALARM SYSTEM

Disabled refuge alarm system shall be provided at all dedicated refuge points. Each refuge point shall be provided with a call panel which shall transit to a master station located within the following areas:

General Office.  
Lobby (beside fire alarm panel).

The disabled refuge system shall be fully commissioned with test results recorded. Commissioning certificates shall be included within the electrical O & M manuals to be provided.

System shall be maintained for 12 months after completion and future maintenance requirement shall be fully explained to the school and recorded within the O & M manual.

### CALL FOR ASSISTANCE SYSTEM

A call for assistance system shall be provided within the Hygiene Room (see room data sheet).

In addition to this other call for assistance alarms shall be provided within all toilet areas which are suitable for wheelchair users.

The call for assistance alarm shall transmit directly outside the toilet and to the General Office (location of neon/buzzer shall be agreed with the school authority).

Each system shall be fully commissioned with test results recorded. Commissioning certificates shall be included within the electrical O & M manuals to be provided.

System shall be maintained for 12 months after completion and future maintenance requirement shall be fully explained to the school and recorded within the O & M manual.

### GENERAL COMPUTER NETWORKING

Separate power circuits shall be installed for each file server, hub and any other equipment mounted in a wiring cabinet. A suitable number of 13 amp socket outlets shall be supplied at each wiring cabinet and should be related to the size of cabinet and number of items it may contain. A 10 mm<sup>2</sup> CPC shall run from main earth terminal to the earth tag attached to each wiring cabinet.

The file server also requires an uninterruptible power supply.

All schools should work towards an integrated network infrastructure which incorporates provision for both curricular systems and administrative/management information systems. To achieve maximum flexibility, networked infrastructure should conform to the following design principles:

- value for money;
- maintenance;
- accessibility;
- cost-effective use of bandwidth;
- modularity;
- connectivity;
- expandability;
- security.

Systems should use a combination of network layouts which are most effective in meeting educational and management needs and provide value for money. This should consist of a cost-effective combination of fibre-optic and current standard UTP cabling. In certain circumstances a wireless solution complying with IEEE 802.11 may be considered, subject to the agreement of the maintaining authority.

Schools should note the need to provide for comprehensive maintenance to secure the integrity of the network and applications. Although this element will be assured for the computer systems that are part of the Classroom 2000 managed service, schools may need to ensure that other arrangements are in place for any other systems that they may be using.

The infrastructure should provide a fully integrated network which will allow users to have relevant access to any part of the school.

The design shall take account of the expected uses of particular machines on the network, and make appropriate bandwidth allowances.

Systems should be designed to minimise the effects of catastrophic failure; to enhance security; to facilitate ease of maintenance and technical problem-solving; to facilitate the most cost-effective use of bandwidth to meet different needs at different places in the school; and to facilitate future revision, enhancement and upgrading of systems.

Network protocols should facilitate the maximum connectivity among the various technology platforms used within the school and to information services provided on wide area networks. Such connectivity should allow the maximum possible sharing of access to peripherals, such as printers and scanners.

It is important that trunking is provided with sufficient networking points for future expansion. Trunking and cable trays should be able to cope with the school's current and future network requirements, allowing for at least a 25% expansion in capability.

All systems in a school should be integrated on 1 physical network to minimise the costs of installing separate physical networks for different purposes. This can only be achieved where there are satisfactory arrangements in place to ensure the security and integrity of the database files and electronic communications at a minimum of 3 levels; at the level of the physical infrastructure; at the level of the separate application systems; and at the level of the individual user. This should include provision for monitoring and controlling access by users to the Internet, incorporating filtering of Internet content and e-mail. There should be central *and local* control for virus checking. The system should incorporate an easily-used provision for daily back-up of user files. It is good practice to arrange for off-site storage of a copy of back-up files.

The distribution of ICT networking shall be via the following methods:

Cable tray/trunking shall be provided throughout all areas to facilitate the wiring of the structured cabling installation. Cable tray and trunking shall be installed in ceiling voids in corridors linking centralised communication positions. From this corridor trunking, conduits shall be linked to each space where ICT outlets are to be provided.

Fire barriers shall be provided where necessary.

## PERFORMANCE OBJECTIVES

The installation must provide a versatile high capacity structured voice and data communications cabling installation, capable of being easily modified and extended to accommodate future changes with minimal interruption to service, and capable of supporting a multi-vendor, multi-product environment. The installation must be capable of supporting a wide variety of system protocols including the following:

- a. IEEE 802.3 Ethernet (1,000 base T).
- b. FDDI.
- c. ISDN.
- d. 100 Base T.
- e. ATM.

And the following applications:

- a. Office Automation Systems.
- b. Computer-Aided Draughting and Design Systems.
- c. Building Energy Management System.
- d. Management Information Systems.
- e. Document Imaging System.
- f. Electronic Mail/Multi-Media/Client-Server Applications.
- g. Multi-media design and web authoring.
- h. Specialist software for each area of the curriculum.
- i. Software provided under the Classroom 2000 managed service.

## DESIGN PARAMETERS

The design parameters are defined within the latest ISO 11801, BS EN 50173 and BS 7718. As a minimum, the installation shall conform to the current standard UTP link specification. However, the level of specification shall be determined by the required level of performance and relative costs of each cable system. It is anticipated that wireless technology to IEEE 802.11 will become more attractive for straightforward networking applications, however the use of such a system shall be agreed with all the relevant parties eg ELB advisers, Classroom 2000, DE Inspectorate, etc.

## SYSTEM DESCRIPTION

The requirement is to provide a number of outlets in designated rooms, presented in the form of RJ45 outlets to permit access to the various voice and data systems. From the rooms, the UTP cable is run in trunking and cable trays to the appropriate wiring cabinet, which is, in turn, linked to the main wiring cabinet via multi-pair cables (voice) and a fibre-optic cable (data). Minimum bend radius criteria for all cabling types shall be strictly observed.

A “voice over IP” (VOIP) voice solution may be proposed subject to a favourable economic comparison with the conventional installation described elsewhere. The complete system shall be supplied and installed by a licensed and approved installer. Documentary evidence of this will be required prior to commencement on site.

## WIRING CABINET

All modular distribution equipment, including fibre-optic splice trays, UTP patch panels, cable management panels and active equipment shall be housed within the building wiring cabinets.

Careful consideration should be given to the positioning of all wiring cabinets to ensure their security. The main wiring cabinet should be located in the computer hub room.

Wiring cabinets shall be either wall mounted or floor standing 19" rack cabinets with an 800 mm<sup>2</sup> footprint. Each 19" rack cabinet shall be fitted out as follows:

1. Plain steel sides, rear and top panels to IP55 minimum.
2. Fully glazed door.
3. Adjustable internal frame with a facility for cable retention on both sides for cable support.
4. Key lockable handle.
5. A4 document pocket.
6. Fixed shelves.
7. Fan (if required - depends on size of cabinet).
8. Fibre-optic splice trays complete with pigtails and appropriate bulkhead connectors for termination of the fibre-optic cables at the main wiring cabinet.
9. Multi-way, unkeyed, UTP patch panels fully loaded with RJ45 outlets having IDC contacts, together with cable management panels. They should be no less than 1 single unit (1u) cable management panel for every 2 units (2u) of patch panels, with an equal number of cable management panels interspersed amongst the hubs and/or switches.

Each wiring cabinet shall be sized to provide capacity for 25% expansion minimum.

Following completion of all installation works, each wiring cabinet shall be thoroughly cleaned, inside and outside, to remove all dust, debris, cable off-cuts, etc prior to installation and connection of the active equipment.

## WIRING FIBRE-OPTIC BACKBONE DATA CABLING

Each wiring cabinet shall be individually linked back to the main wiring cabinet using a multi-strand, 62.5 or 50/125um, multi-mode, loose tube, fibre-optic cable, complete with moisture barrier, Kevlar strain members and low smoke, zero halogen (LSOH) sheath, all suitable for external duct use. All cabling shall be installed to BS 7718.

The cable shall be terminated at each end in a splice tray mounted in the wiring cabinet and be presented in the form of appropriate bulkhead connectors.

### MULTI-PAIR VOICE CABLING

Each wiring cabinet shall be individually linked back to the main wiring cabinet using multi-pair PVC telecom cables to BT Specification CW 1308. All cabling shall be installed to BS 6701.

The cables shall be terminated in the main wiring cabinet on a Main Distribution Frame (MDF) having separate vertical KRONE terminal strips, all provided by the PABX supplier, and on patch panels in the wiring cabinet. Appropriate liaison must be maintained between the IT sub-contractor and PABX supplier. As noted above VOIP may be provided as an alternative solution subject to a favourable economic comparison.

### UTP CABLING

Each room outlet shall be individually linked back to its wiring cabinet using 4-pair UTP cable.

All 4 pairs of the UTP cables shall be terminated to EIA/TIA 258B/568A wiring standards on patch panels at the wiring cabinet end (wiring tie bars shall be used to relieve the strain on the IDC connectors) and on RJ45 outlets at the room end.

All UTP cables shall be installed as a continuous run from the wiring closet to the room outlet. THE DISTANCE BETWEEN THE WIRING CABINET AND THE ROOM OUTLET MUST NOT EXCEED THE PRESCRIBED MAXIMUM ASSOCIATED WITH THE CABLE SYSTEM.

Cabling shall be terminated using the manufacturers' recommended method and tools only. No more than 12 mm of exposed untwisted pair shall be present at termination points.

The network design shall be based on a switched Ethernet solution compliant with IEE 802.3, 1000 Base T, 100 Base TX, 100 Base FX and 10 Base T, with the provision of a switched 100 Mbps service to power users.

All active equipment necessary for the full functioning of the system shall be supplied by others. The proposed equipment shall be selected from reputable and reliable manufacturers only, and shall comply with the following specification as a minimum:

#### SWITCHES

Any proposed Ethernet Hub Device must:

- be capable of operating in a stackable hub configuration;
- have 100 Mbps ports capable of independent configuration and operation in Cut Through and/or Store and Forward modes;

- support gigabit Ethernet backbone;
- provide security/password/authentication/logging features.

Any proposed Ethernet Switching Device must be capable of supporting diagnostic/fault finding features.

#### FAST ETHERNET SWITCHES

Any proposed Fast Ethernet Switching Device must:

- have the capability to store its operational configuration and operating software on-board in such a way that it is non-volatile;
- have adequate resources to avoid discarding packets under load;
- be capable of being provided as a stand-alone variant and a multi-slot chassis/hub variant;
- be capable of connection to UTP or Fibre-Optic cable and the supplier must state all the cabling variations of the 100 Base T standard;
- provide 1 or more 100 Mbps Ethernet ports;
- support gigabit Ethernet backbone;
- be capable of supporting diagnostic/fault finding features;
- be capable of SNMP management and configuration to MIB II level and should provide RMON functions;
- be capable of reconfiguring itself automatically to its last operational state when mains power supply is resumed after an outage.

Any proposed Fast Ethernet Switching Device stand-alone variant should be stackable and, if so, the supplier must state the mechanisms for achieving this and any limitations.

The supplier must state whether any proposed Fast Ethernet Switching Device is able to support Virtual LANS. The supplier must provide the relevant MIB for any proposed Fast.

Ethernet Switching Device and if necessary provide assistance with the compilation of the MIB on an SNMP Management System.

**PATCH LEADS** - Two RJ45/RJ45 Category 5 patch leads shall be provided for each data/voice outlet, 1 (2 m length) to be used for connection at the wiring cabinet and the other (3 m length) at the room outlet. All patch leads shall be to the same specification as the fixed wiring installation.

**WIREWAYS** - All UTP cabling shall be installed between the wiring cabinets and room data/voice outlets in a system of cable tray and trunking. The system shall be complete with all necessary bends, tees, crossovers, reducers, etc and be installed to meet the bending radius criteria of the UTP cable.

Manufacturers' bends, tees, reducers, etc only shall be permitted.

**LABELLING** - All outlets, patch panels, etc and either end of all cabling shall be indelibly labelled, the format of which shall be agreed. In addition, a colour coding convention for patch panel and room outlet inserts shall be employed throughout as follows:

- a. blue – voice;
- b. grey – data;
- c. red – PTO network services.

**TESTING AND COMMISSIONING** - On completion of ICT network, the installation must be tested by the IT sub-contractor, as follows:

1. **FIBRE-OPTIC CABLING:**

The fibre-optic cabling links between the main wiring cabinet and each wiring cabinet shall be individually tested using an Optical Time Domain Reflectometer (OTDR) to prove that:

- there is cable continuity;
- the transmission characteristics, attenuation, bandwidth, etc are as per the cable specification.

Hard copy print-outs of all OTDR tests shall be provided.

2. **MULTI-PAIR CABLING:**

The multi-pair cabling links between the MDF and each wiring cabinet shall be individually tested to verify:

- the conductor loop resistance of each cable pair;
- the insulation resistance of each conductor.

Tabulated results of the values of these tests for each pair and core for all cables shall be provided.

**UTP CABLING**

The UTP system shall be tested using specialist test equipment, eg a Fluke, a Wavetek, Pentascanner or equivalent to prove that:

- there is cable pair continuity;

- cable pair polarity has been maintained, ie the wires within the pair are not reversed;
- cable pair shorting, both within a particular pair and between adjacent pairs, does not exist;
- the installation will be capable of operating at 100 Mbps and still remain within the current legislation regarding EMI and RFI interference - BS EN 55022 and BS EN 55024.

Measurements shall be taken of the following for each pair in each cable:

- cable length - m;
- DC resistance - ohms;
- capacitance - pF/m;
- attenuation - dB;
- Near-End-Crosstalk (NEXT) - dB;
- Attenuation-To-Crosstalk Ratio (ACR) - dB.

The Contractor shall also provide that:

- the cables are correctly installed with respect to strain relief and bending radius;
- all labelling at either end of the cabling has been completed;
- appropriate Test Certificates and Certificates of Compliance are provided for all of the above for each system;
- two sets of 'As Installed' drawings are provided for the complete installation, with test documentation in hardcopy format.

Final acceptance testing of the complete installation will comprise a live performance test, involving not only the structured cabling infrastructure but also the PABX and telephone handsets, hubs, switches, routers and networked PCs linking to various applications on the host/server computer.

The system will only be accepted after such performance testing has taken place and been proved to be satisfactory, after completion of all testing and commissioning.

## SYSTEM WARRANTY

The IT Sub-Contractor shall be required to warrant the installed system against defects of workmanship or materials for a period of not less than 15 years from the date of Practical Completion or the date on which of satisfactory documentation is received by the Engineer, whichever is the later.

## TELEPHONE SYSTEM

The telephone system wiring shall form part of a structured data/voice cable infrastructure and shall be indistinguishable from the data installation.

An ISDN 30 facility should be installed.

Wiring shall be to the current Unshielded Twisted Pair (UTP) standard and shall terminate in RJ45 outlets. These telephones lines are in addition to the lines required for the Mechanical and Electrical systems ie Intruder Detection, Lift, Mechanical Equipment, etc.

The number of external lines will depend on the size of the school but a minimum of 2 is required for a small school with a minimum of 4 for a larger school.

It is anticipated that any Internet connection shall be provided through the Classroom 2000 managed service solution.

Digital telephone handsets shall be provided at the following locations:

- Reception
- Principal's Office
- Vice-Principal's Office.

All other locations shall be provided with an analogue telephone handset.

## DOOR ACCESS AND INTERCOM INSTALLATION

Door access control shall be provided for the internal lobby door of the main entrance. The door access system shall comprise a recessed stainless steel digital audio and visual entry panel located at the internal door of the entrance lobby. This unit shall be equipped with an integrated keypad to allow for authorised access into the building.

The entry panel shall be connected to 2 internal video handset units, (1 in the General Office and 1 in a position to be agreed with the school authority).

The internal lobby door shall be fitted with the most appropriate type of electric lock suitable for the type of door. All door access system accessories such as request to exit button, emergency breakglass etc shall be provided including fire alarm system link which shall be arranged to de-energise the electric lock upon activation of the fire alarm system.

The system shall operate as follows:

Button on entry panel is activated and internal video handset unit sounds. Call is answered by lifting the handset. If satisfied as to the caller's identity the internal video handset lock release button is depressed.

Entry is permitted by using a keyfob. Number of keyfobs required shall be confirmed with the school authority.

The door access system shall be fully commissioned with test results recorded. Commissioning certificates shall be included within the electrical O & M manuals to be provided.

System shall be maintained for 12 months after completion and future maintenance requirement shall be fully explained to the school and recorded within the O & M manual.

### TV AERIAL INSTALLATION

A television aerial system shall be provided which shall be capable of receiving the following services at the aerial outlet point:

- BBC 1
- BBC 2
- UTV 1
- Channel 4
- Channel 5
- RTE 1
- Network 2
- T-Nag
- TV3
- Digital Terrestrial Television
- Radio Stations

TV aerial points shall be flush mounting.

All equipment necessary to receive the above channels shall be provided. All equipment power supplies required shall be provided.

The TV aerial system shall be fully commissioned with test results recorded. Commissioning certificates shall be included within the electrical O & M manuals to be provided.

System shall be maintained for 12 months after completion and future maintenance requirement shall be fully explained to the school and recorded within the O & M manual.

As an option, but only with agreement of C2K or the ICT network provider/maintenance contractor the ICT network cabling may be used for provision of the TV channels listed above. If agreement has been reached then all equipment necessary for the provision of the TV channels via the ICT cabling shall be provided. Provision shall not have an adverse affect on other ICT services.

## APPENDIX 2

### TABLE OF PLAY AND SITE AREAS

Enrolment Category	Class Bases	Hard Play	Informal Grass Play	Recommended Minimum Site Area (Hectares)
86-115	4	650	3,000	0.63
116-145	5	800	3,000	0.67
146-175	6	950	5,000	0.95
176-205	7	1,100	5,000	1.00
206-230	8	1,250	5,000	1.04
231-260	9	1,400	5,000	1.08
261-290	10	1,550	5,000	1.11
291-320	11	1,700	7,000	1.38
321-350	12	1,850	7,000	1.43
351-380	13	2,000	7,000	1.47
381-410	14	2,150	7,000	1.51
411-435	15	2,300	7,000	1.55
436-465	16	2,450	7,000	1.59
466-495	17	2,600	7,000	1.62
496-525	18	2,750	7,000	1.66
526-555	19	2,900	1,0000	1.99
556-585	20	3,050	1,0000	2.03
586-615	21	3,200	1,0000	2.08
616-640	22	3,350	1,0000	2.12
641-670	23	3,500	1,0000	2.16
671-700	24	3,650	1,0000	2.21
701-730	25	3,800	1,0000	2.25
731-760	26	3,950	1,0000	2.29
761-790	27	4,100	1,0000	2.34
791-820	28	4,250	1,0000	2.38

Notes:

1. For long-term enrolments (LTE) of less than 86 pupils, site and play areas shall be advised by the Department upon application.
2. For long-term enrolments (LTE) of more than 820 pupils, site and play areas shall be advised by the Department upon application.
3. In all cases the recommended site area includes an allowance for School Meals Accommodation, staff and visitors' parking, access and modest landscape works. (Refer also to Item 4.2.)

## **APPENDIX 3**

### **SAMPLE SCHEDULES OF ACCOMMODATION FOR 4, 7 AND 21 - CLASSROOM PRIMARY SCHOOLS**

Notes.

1. The following sample Schedules of Accommodation are provided for guidance only. The accommodation brief for all primary school construction projects shall be as indicated in Section 3b, Schedules of Accommodation.

## SCHEDULE OF ACCOMMODATION FOR A 4-CLASSROOM PRIMARY SCHOOL (CATEGORY 86-115)

No of Spaces	Area	Description of Space	Room Data Sheet No	Total Area
4	60 m <sup>2</sup>	Classroom	6.1	240 m <sup>2</sup>
1	40 m <sup>2</sup>	Resource Area	6.2	40 m <sup>2</sup>
1	160 m <sup>2</sup>	Multi-Purpose Hall	6.3	160 m <sup>2</sup>
1	15 m <sup>2</sup>	Multi-Purpose Room 2	6.6	15 m <sup>2</sup>
1	15 m <sup>2</sup>	Multi-Purpose Room 3		15 m <sup>2</sup>
1	30 m <sup>2</sup>	Staff Room	6.7	30 m <sup>2</sup>
1	15 m <sup>2</sup>	Principal's Office	6.8	15 m <sup>2</sup>
1	15 m <sup>2</sup>	General Office	6.9	15 m <sup>2</sup>
4	5 m <sup>2</sup>	Classroom Store	6.11	20 m <sup>2</sup>
1	5 m <sup>2</sup>	Resource Store	6.12	5 m <sup>2</sup>
1	15 m <sup>2</sup>	PE Equipment Store	6.13	15 m <sup>2</sup>
1	10 m <sup>2</sup>	Mat Store	6.14	10 m <sup>2</sup>
1	10 m <sup>2</sup>	Adult Chair Store	6.15	10 m <sup>2</sup>
1	10 m <sup>2</sup>	Stage Store	6.16	10 m <sup>2</sup>
1	15 m <sup>2</sup>	External Play Store	6.17	15 m <sup>2</sup>
1	3 m <sup>2</sup> min	Cleaner's Store	6.18	3 m <sup>2</sup> min
4	15 m <sup>2</sup> min	Class Toilets and Cloak Space	6.21	60 m <sup>2</sup>
2	12 m <sup>2</sup>	Pupils' Changing Room at Multi-Purpose Hall	6.25	24 m <sup>2</sup>
1	13 m <sup>2</sup>	Hygiene Room	6.23	13 m <sup>2</sup>
2	6 m <sup>2</sup>	Staff Toilets	6.22	12 m <sup>2</sup>
1	5 m <sup>2</sup>	Computer Hub Room	6.27	5 m <sup>2</sup>

The total recommended limit of internal area (LIA) for the school including Mechanical and Electrical plant rooms and circulation space but excluding School Meals Accommodation is 870 m<sup>2</sup>.

## SCHEDULE OF ACCOMMODATION FOR A 7-CLASSROOM PRIMARY SCHOOL (CATEGORY 176-205)

No of Spaces	Area	Description of Space	Room Data Sheet No	Total Area
7	60 m <sup>2</sup>	Classroom	6.1	420 m <sup>2</sup>
2	40 m <sup>2</sup>	Resource Area	6.2	80 m <sup>2</sup>
1	160 m <sup>2</sup>	Multi-Purpose Hall	6.3	160 m <sup>2</sup>
1	60 m <sup>2</sup>	Library Facilities	6.4	60 m <sup>2</sup>
1	30 m <sup>2</sup>	Small Group/Medical Inspection Room	6.5	30 m <sup>2</sup>
1	35 m <sup>2</sup>	Multi-Purpose Room 1	6.6	35 m <sup>2</sup>
1	15 m <sup>2</sup>	Multi-Purpose Room 2		15 m <sup>2</sup>
1	15 m <sup>2</sup>	Multi-Purpose Room 3		15 m <sup>2</sup>
1	33 m <sup>2</sup>	Staff Room	6.7	33 m <sup>2</sup>
1	20 m <sup>2</sup>	Principal's Office	6.8	20 m <sup>2</sup>
1	15 m <sup>2</sup>	General Office	6.9	15 m <sup>2</sup>
1	5 m <sup>2</sup>	Caretaker's Office	6.24	5 m <sup>2</sup>
7	5 m <sup>2</sup>	Classroom Store	6.11	35 m <sup>2</sup>
2	5 m <sup>2</sup>	Resource Store	6.12	10 m <sup>2</sup>
1	15 m <sup>2</sup>	PE Equipment Store	6.13	15 m <sup>2</sup>
1	10 m <sup>2</sup>	Mat Store	6.14	10 m <sup>2</sup>
1	10 m <sup>2</sup>	Adult Chair Store	6.15	10 m <sup>2</sup>
1	10 m <sup>2</sup>	Stage Store	6.16	10 m <sup>2</sup>
1	15 m <sup>2</sup>	External Play Store	6.17	15 m <sup>2</sup>
1	3 m <sup>2</sup> min	Cleaner's Store	6.18	3 m <sup>2</sup> min
1	10 m <sup>2</sup>	Central Store	6.19	10 m <sup>2</sup>
1	5m <sup>2</sup>	MP1 Store	6.29	5m <sup>2</sup>
7	15 m <sup>2</sup> min	Class Toilets and Cloak Space	6.21	105 m <sup>2</sup>
2	12 m <sup>2</sup>	Pupils' Changing Room at Multi-Purpose Hall	6.25	24 m <sup>2</sup>
2	7.5 m <sup>2</sup>	Pupils' Toilets at Multi-Purpose Hall	6.26	15 m <sup>2</sup>
1	13 m <sup>2</sup>	Hygiene Room	6.23	13 m <sup>2</sup>
2	6 m <sup>2</sup>	Staff Toilets	6.22	12 m <sup>2</sup>
1	5 m <sup>2</sup>	Computer Hub Room	6.27	5 m <sup>2</sup>

The total recommended limit of internal area (LIA) for the school including Mechanical and Electrical Plant Rooms and circulation space but excluding School Meals Accommodation is 1,410 m<sup>2</sup>.

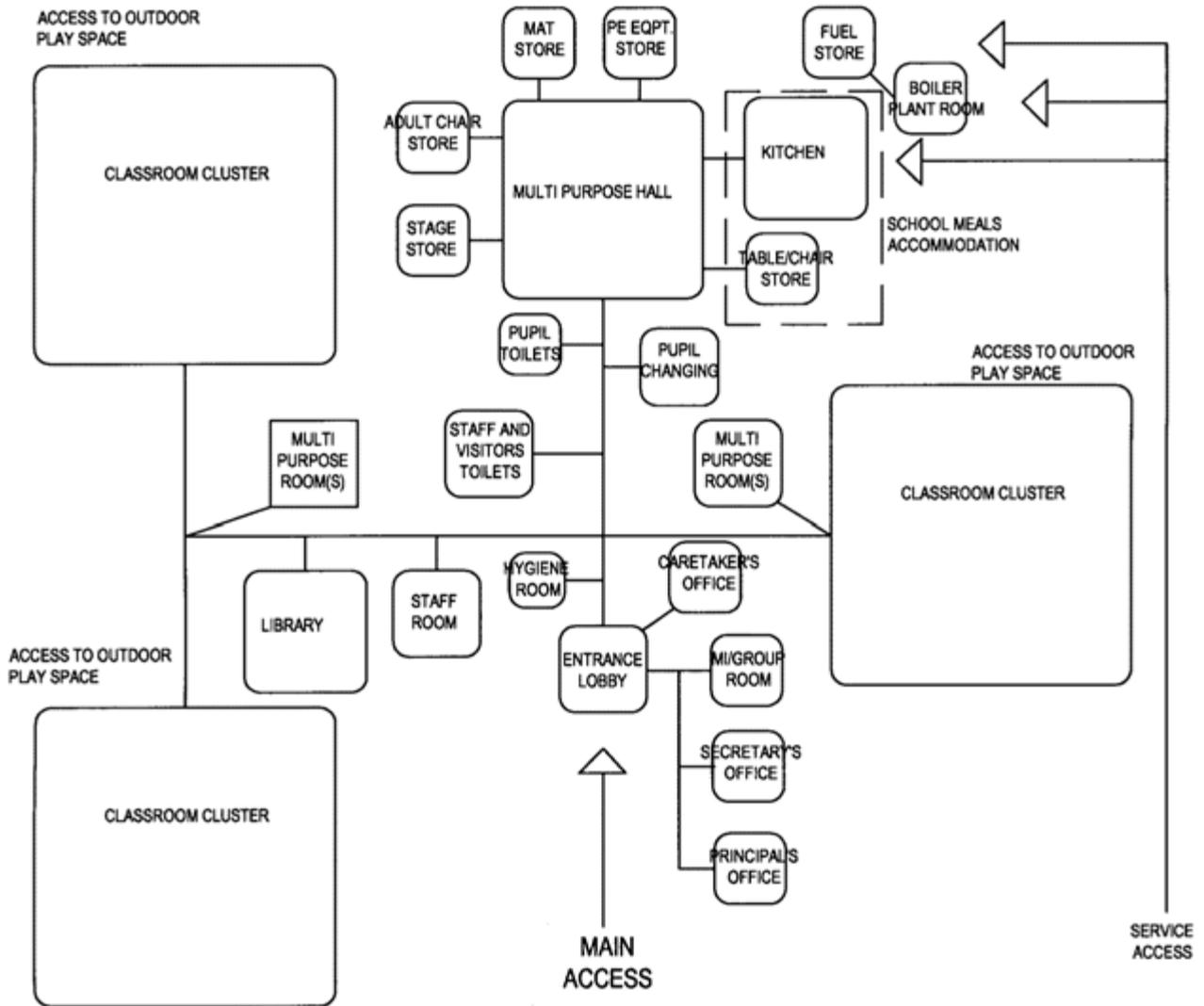
## SCHEDULE OF ACCOMMODATION FOR A 21-CLASSROOM PRIMARY SCHOOL (CATEGORY 586-615)

No of Spaces	Area	Description of Space	Room Data Sheet No	Total Area
21	60 m <sup>2</sup>	Classroom	6.1	1,260 m <sup>2</sup>
6	40 m <sup>2</sup>	Resource Area	6.2	240 m <sup>2</sup>
1	160 m <sup>2</sup>	Multi-Purpose Hall	6.3	270 m <sup>2</sup>
1	110 m <sup>2</sup>			
1	60 m <sup>2</sup>	Library facilities	6.4	60 m <sup>2</sup>
1	30 m <sup>2</sup>	Small Group/Medical Inspection Room	6.5	30 m <sup>2</sup>
1	35 m <sup>2</sup>	Multi-Purpose Room 1	6.6	35 m <sup>2</sup>
1	15 m <sup>2</sup>	Multi-Purpose Room 2		15 m <sup>2</sup>
1	15 m <sup>2</sup>	Multi-Purpose Room 3		15 m <sup>2</sup>
1	89 m <sup>2</sup>	Staff Room	6.7	89 m <sup>2</sup>
1	20 m <sup>2</sup>	Principal's Office	6.8	20 m <sup>2</sup>
1	15 m <sup>2</sup>	General Office	6.9	15 m <sup>2</sup>
1	5 m <sup>2</sup>	Caretaker's Office	6.10	5 m <sup>2</sup>
1	10 m <sup>2</sup>	Vice-Principal's Office	6.24	10 m <sup>2</sup>
1	10 m <sup>2</sup>	Reprographics Room	6.20	10 m <sup>2</sup>
21	5 m <sup>2</sup>	Classroom Store	6.11	105 m <sup>2</sup>
6	5 m <sup>2</sup>	Resource Store	6.12	30 m <sup>2</sup>
2	15 m <sup>2</sup>	PE Equipment Store	6.13	30 m <sup>2</sup>
2	10 m <sup>2</sup>	Mat Store	6.14	20 m <sup>2</sup>
2	10 m <sup>2</sup>	Adult Chair Store	6.15	20 m <sup>2</sup>
2	10 m <sup>2</sup>	Stage Store	6.16	20 m <sup>2</sup>
1	20 m <sup>2</sup>	External Play Store	6.17	20 m <sup>2</sup>
2	3 m <sup>2</sup> min	Cleaner's Store	6.18	6 m <sup>2</sup> min
1	15 m <sup>2</sup>	Central Store	6.19	10 m <sup>2</sup>
1	5m <sup>2</sup>	MP1 Store	6.29	5m <sup>2</sup>
21	15 m <sup>2</sup>	Class Toilets and Cloak Space	6.21	315 m <sup>2</sup>
2	12 m <sup>2</sup>	Pupils' Changing Room at Multi-Purpose Hall	6.25	24 m <sup>2</sup>
2	7.5 m <sup>2</sup>	Pupils' Toilets at Multi-Purpose Hall	6.26	15 m <sup>2</sup>
1	13 m <sup>2</sup>	Hygiene Room	6.23	13 m <sup>2</sup>
2	9 m <sup>2</sup>	Staff Toilets	6.22	18 m <sup>2</sup>
1	5 m <sup>2</sup>	Computer Hub Room	6.27	5m <sup>2</sup>

The total recommended limit of internal area (LIA) for the school including Mechanical and Electrical Plant Rooms and circulation space but excluding School Meals Accommodation is 3,224 m<sup>2</sup>.

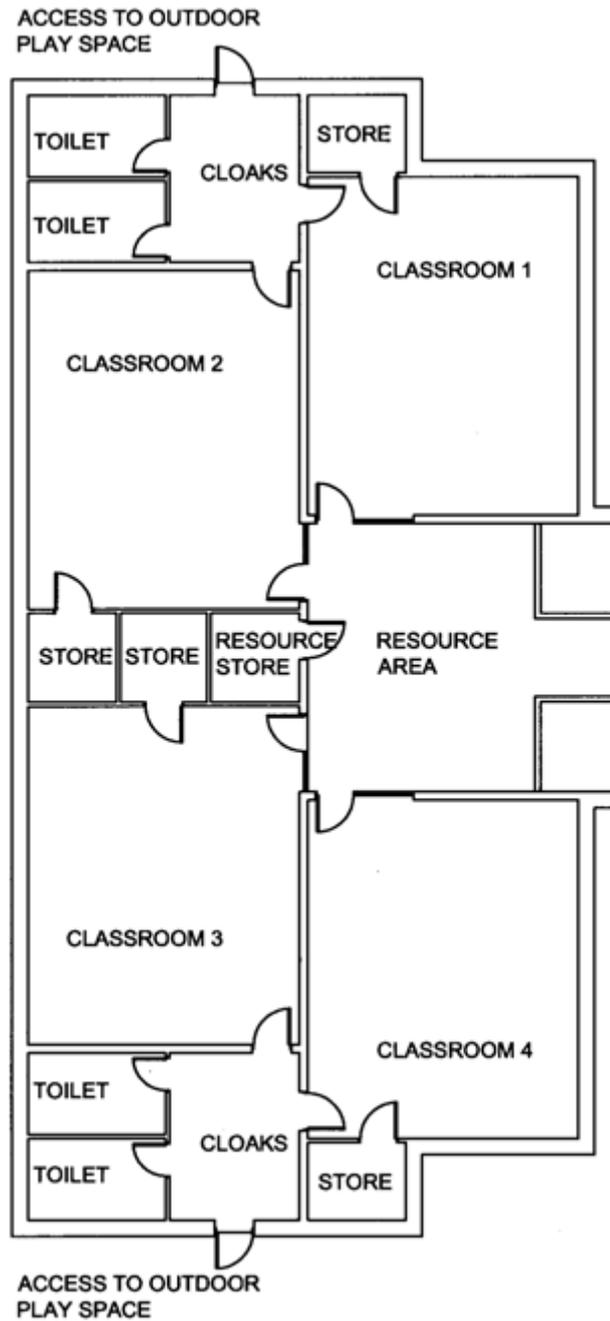
## APPENDIX 4

### DIAGRAMMATIC ROOM RELATIONSHIPS



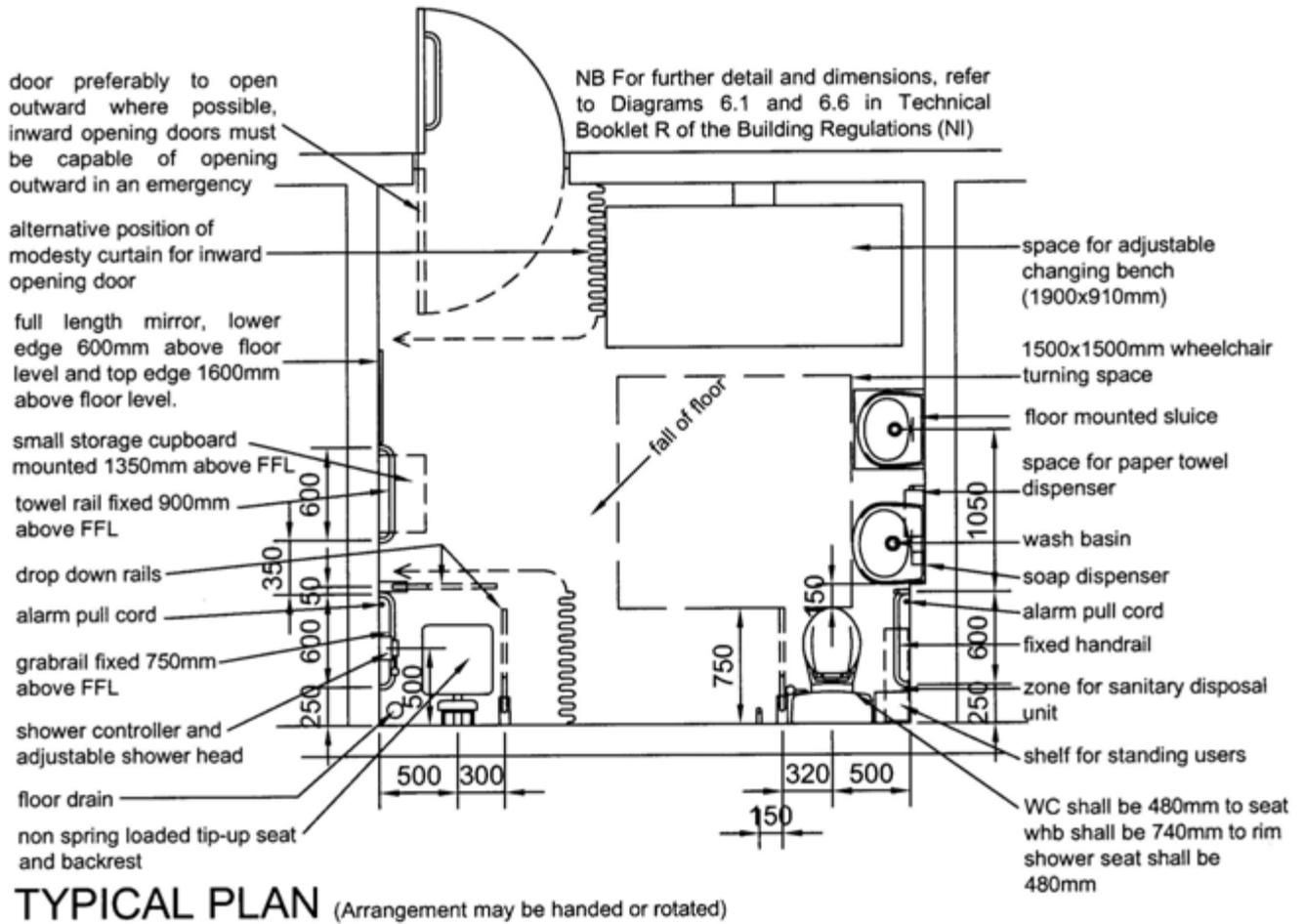
## APPENDIX 5

### POSSIBLE CLASSROOM CLUSTER LAYOUT



## APPENDIX 6

### 3.5 x 3.5 m HYGIENE ROOM (not to scale)

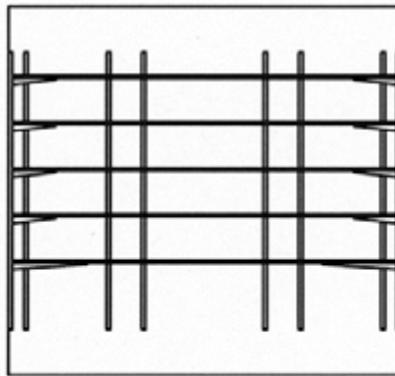


## APPENDIX 7

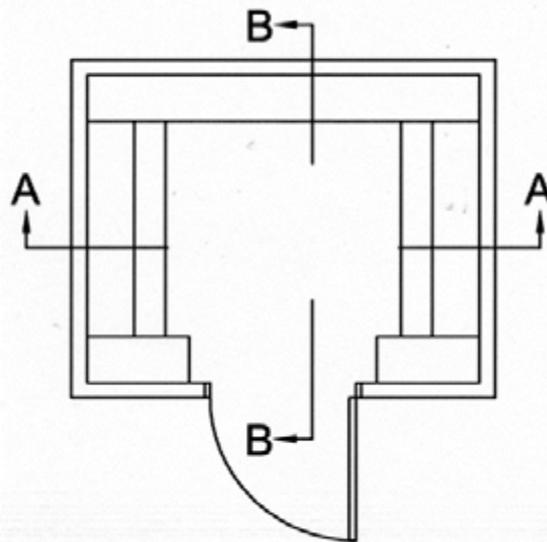
### CLASSROOM/RESOURCE STORE LAYOUT (not to scale)



SECTION B:B



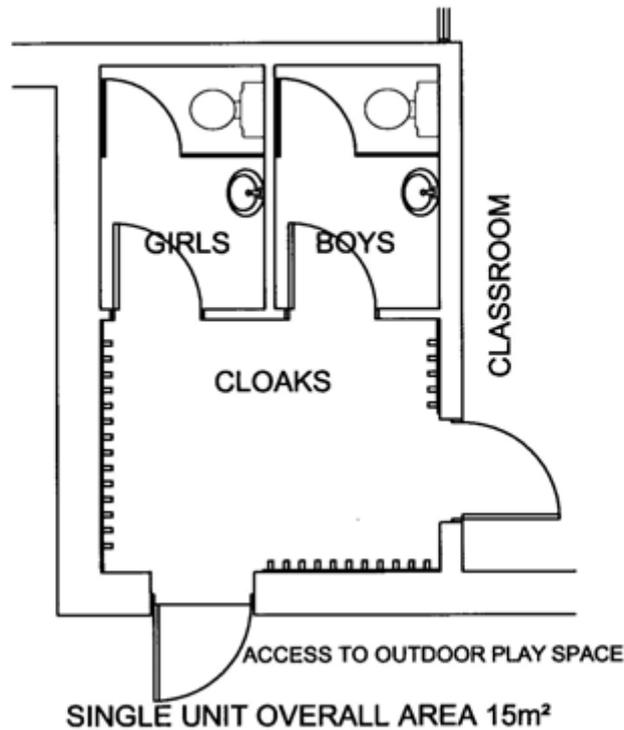
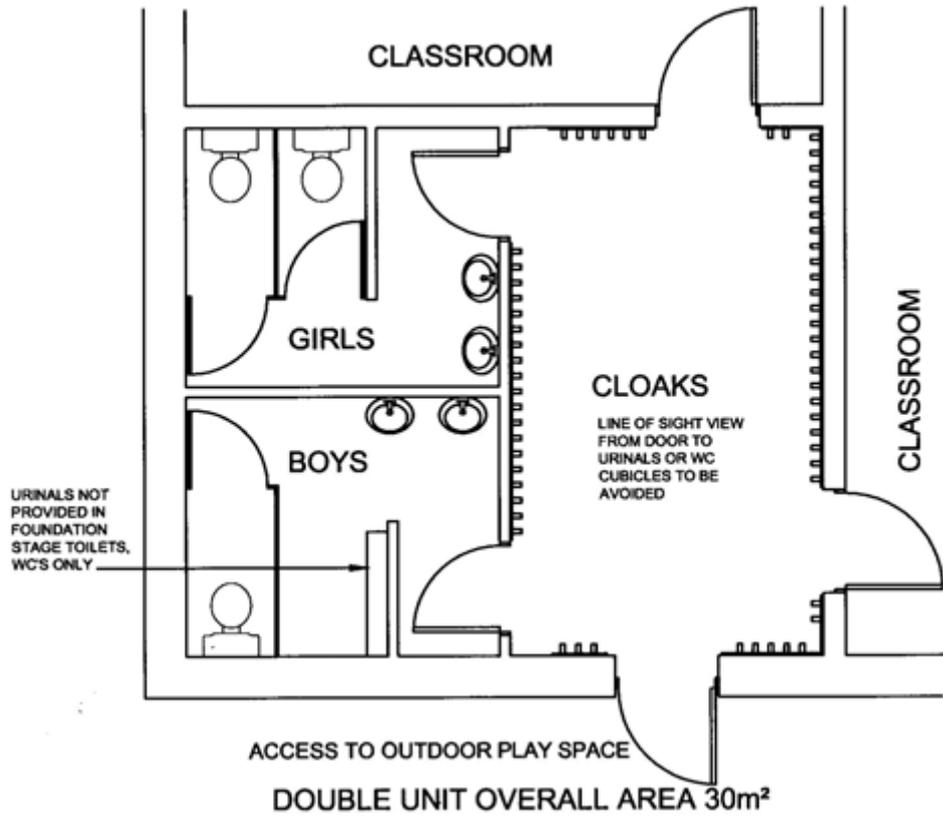
SECTION A:A



TYPICAL PLAN

## APPENDIX 8

### POSSIBLE PUPIL TOILETS/CLOAKS ARRANGEMENT (not to scale)



## APPENDIX 9

### ENVIRONMENTAL ASSESSMENT GUIDE

Currently in preparation by DE

# PRIMARY SCHOOLS BUILDING HANDBOOK

Edition 1 April 2009



Department of  
**Education**

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MÁNNYSTRIE O

**Lear**

Rathgael House, 43 Balloo Road, BANGOR Co Down BT19 7PR