

CROESYCEILIOG SCHOOL

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Accessibility Policy




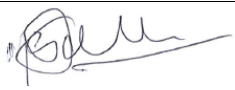
“Learning, Respect, Ambition”

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To be read in conjunction with	
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Signed (Head Teacher)	
Signed (Chair of Governing Body)	

PREFACE

Croesyceiliog School is a comprehensive school providing mainstream education for a wide range of pupils aged 11-16 years of age.

Introduction/Aim of the Plan

This Accessibility Plan is drawn up in compliance with current legislation and requirements. School Governors are accountable for ensuring the implementation, review and reporting of progress of the Accessibility Plan over a prescribed period. This Accessibility Plan is structured to complement and support the school's Equality Objectives, and will similarly be published on the school website.

Key Objective of the Plan

The purpose of the Accessibility Plan is to reduce and eliminate barriers to access the curriculum and to ensure full participation in the school community for pupils, and prospective pupils, staff, volunteers and visitors with a disability. The plan is developed around three planning duties: Improving Access to the Curriculum; Improving the Physical Environment and Improving Communications. The plan also takes account of the need to involve pupils in making decisions which are likely to affect them.

Equality Act 2010 Statement

It is against the law for a school or other education provider to treat disabled students unfavourably. This includes:

- direct discrimination, for example refusing admission to a student because of disability
- indirect discrimination, for example only providing application forms in one format that may not be accessible
- discrimination arising from a disability, for example a disabled pupil is prevented from going outside at break time because it takes too long to get there
- harassment, for example a teacher shouts at a disabled student for not paying attention when the student's disability stops them from easily concentrating
- victimisation, for example suspending a disabled student because they have complained about harassment

Reasonable adjustments

Schools have a duty to make 'reasonable adjustments' to make sure disabled students are not discriminated against. These changes could include providing extra support and aids (like specialist teachers or equipment). Schools are not subject to the reasonable adjustment duty to make alterations to physical features as this is a Local Authority responsibility. The buildings must be made accessible for disabled pupils as part of their overall planning duties.

Definition of a disability

You are disabled under the Equality Act 2010 if you have a physical or mental impairment that has a 'substantial' and 'long-term' negative effect on your ability to do normal daily activities.

Equal Opportunities

We do not discriminate (either directly or indirectly) against anyone on the grounds of their gender, race, ethnic origin, religion, ability, disability, sexuality or any aspect of their social/cultural background. Furthermore, the school community is committed to countering all forms of racial prejudice and discrimination. All procedures are designed to promote equality and diversity.

PART 1 - BRIEFING GUIDANCE

1.0 FIRST IMPRESSIONS

Access and approach

The first impressions of the school are important for attracting pupils, parents and staff. The visual impact of the school, its buildings and site were discussed and expressed in a design statement.

An easily accessible level and access is provided. Similarly, well- designed access is evident round the school grounds to enable participation in all school activities. This is achieved via a clear, well- organised and easily understood layout with clear signage giving directions to the relevant locations, so that users of the school site can find their way easily.

2.0 VEHICULAR CIRCULATION

Safe circulation, provision for parking, appropriate pedestrian/vehicular segregation and associated activities for all users was considered early on in the design. Transport provision where assistance is required was established at the outset, because this will have a significant impact on the site layout. The main points considered were:

- the provision of adequate and safe car parking for staff and visitors, including designated larger parking spaces for those with disabilities, with guidance from the Planning Authority about the acceptable numbers of car spaces and the production of a 'Green Travel Plan'
- provision is made for assisted pupil arrival and drop-off by coach, bus, mini-bus, taxi and car. There is sufficient safe space for disembarking. Vehicles are able to arrive, draw-up and wait in turn
- vehicle circulation and flow for set-down and drop-off, aims to avoid congestion by using one-way, in-out, or roundabout traffic-flow systems as appropriate
- the use of clearly marked crossings and speed-reducing measures for vehicles, in consultation with the local highways department and as appropriate for accessibility
- provision for access by bicycle and alternative forms of travel or transport, and bicycle storage
- access for fire engines, and the application of the fire-fighting strategy for the whole site, including access to water supplies with the required pressure
- access for emergency services, such as ambulances, allowing for ease of movement to appropriate areas of the school buildings and sites, such as first aid, medical-inspection or sports areas
- access for large vehicles for collection of waste and refuse and transport to safe storage areas, or for infection and vermin control,

has been arranged with the local authority's environmental-health and refuse-removal departments

- access for large vehicles for unloading bulk supplies, especially for kitchen and maintenance functions, with safe, approved approach, entry, parking and turning areas. These are, as far as possible, positioned away from the main entrance so as to ensure safety and avoid negative impact

The impact of the providing for the functional aspects of transport and external circulation has been carefully integrated with the design of soft and hard landscaping to give the school an attractive welcoming appearance. Appropriate planning softens some of the harder aspects of roads, footpaths, fencing, car parking and street lighting so that, for example, the hard landscape for car parking does not dominate over the school site and arrival/departure routes are attractive.

2.1 Arrival and departure

The beginning and end of the day, when all pupils are arriving or leaving school can be stressful for both pupils and staff. Creating an appropriate place with sufficient space for the required number of people to gather and wait can help to settle or calm pupils and can assist with this process, allowing for the safe grouping and appropriate dispersal of pupils. Some points considered are set out below:

- arrival and departure processes take time and resources which require operational planning to guarantee pupils' health and safety
- where there is a possibility that children may try to run out of school it is necessary to provide appropriate safe and secure environments
- the transfer of pupils in wheelchairs with assistance from the rear or side of a vehicle is a slow process and takes place in all weathers, so is best done under cover
- pupils with disabilities are encouraged to develop independent skills for access, orientation and wayfinding as part of their education, as this enables them to access the wider community
- providing an over-protective environment can be dull and unstimulating, so it will be necessary to balance safety alongside allowing suitable challenges to prepare pupils for the uncertainties of independent everyday living
- when designing for closely located schools it is necessary to avoid conflict of pupil routes, especially at peak times

Pupils may access the school through the main entrance, or alternative separate pupil entrances according to age and needs. Access depends on the school's individual approach, its site, management and staffing arrangements. Likewise, the handover of responsibility for pupils between transport escorts and the school is an operational matter that can change. Whatever the individual school circumstances, the design of these entrances aims to be age-appropriate and give a sense of identity.

The entrances have accessible manually operated doors (with a hold- open facility, if required) or automatically operated sliding doors. Security controls and/or an accessible security and draught lobby with outer and inner doors to suit are also provided, but entrances achieve a welcoming and convenient to use.

2.1.1 There is covered sheltered access to the entrance in order to provide:

- waiting spaces for parents with other children, if appropriate
- weather protection for pupils transferring to or from buses or taxis
- weather protection for an entrance with a level threshold

2.1.2 'Wayfinding schemes' enable inclusion for all pupils, by creating trails or using cues of colour, texture and sound. Where these are adopted, they are:

- planned according to the anticipated type and range of SEN and disabilities
- reviewed in relation to changing needs, the long-term use of the building and the permanence of such installations
- provide continuity throughout the whole school building and site

Wayfinding is enhanced by appropriately sited and well-designed signage.

2.1.3 Signage

Clear, easily understood signage assists with route-finding and orientation, and gives identity or focus. Signage is bespoke and has appropriately sized lettering, photographs and objects with visual contrast to the background, installed at an appropriate height and distance where it is clearly visible to all users.

Such suitable signage assists those with sensory impairments and those with communication and language difficulties, and enhance the development of independence skills by:

- using easily understood signs, symbols and objects of references
- incorporating Braille or tactile elements
- being voice-activated or including speech directions

2.1.4 Safety

It is essential to ensure safe external access and circulation for pedestrians of all ages in relation to the overall volume of vehicular use. Therefore, a clear strategy is essential to minimise the risk of accidents and covers:

- site capacity, allowing for sufficient space for the planned number of vehicles arriving and departing simultaneously in the morning and afternoon, in variable circumstances
- safe separation of pedestrians, wheelchair users and vehicles
- giving pedestrians precedence over vehicles within the school site
- pupils who are less mobile, less aware of risk and danger, or who are wheelchair-users with independent or assisted access
- safe arrangements for pupils being transported by bus or arriving on foot or by bicycle, wheelchair or buggy
- avoidance of projections and obstructions which could cause a hazard

- clear identification of hazards for the visually and hearing-impaired where these are unavoidable, such as vehicles

2.2 Internal circulation

2.2.1 Main entrance and reception

The main entrance and reception space is easily identifiable, attractive, user-friendly and welcoming.

It is readily accessible, well-lit and has visible means for obtaining assistance, if required, communicating with reception.

The main entrance and reception have several important functions characterised by:

- pupil arrival and departure
- arrival and departure of staff if there is no separate entrance
- arrival of visiting staff, therapists and outreach workers
- visitors' arrival and booking-in
- parents' arrival for appointments and enquiries

There is level access and main entrance doors with automatic operation for ease of access.

The lobby is secure which provides reception staff greater control over access and egress. This also acts as a draught lobby. It has automatic sliding doors on the outside and secure doors to the corridors controlled by reception (with a swipe card for approved card-holders).

Where doors to the main entrance has a large area of glazing, then manifestations are used to make them visible to those with visual impairment.

Every effort has been made to introduce daylight wherever possible, in order to create pleasant spaces, reduce energy consumption and allow borrowed light from other spaces (provided there is solar and glare control). Good quality lighting is essential for accessibility, and artificially lit circulation areas must not be dull and oppressive.

The design quality of circulation spaces makes a significant contribution to the ambience of the school as a whole. It can affect the morale of all users, as these spaces link the teaching and learning spaces together with all other spaces.

2.2.2 Internal circulation

Circulation spaces are both pleasant and practical to use, affording a means of moving around the building with ease, convenience and efficiency.

There have a simple, clear, easily understood internal layout with signage and wayfinding for both visitors and pupils, as appropriate.

For pupils with SEN and disabilities, it is essential that the arrangement of circulation space is both effective and efficient, because of the impact of travel time and its potential for erosion of curriculum access.

2.2.3 Function and size

Corridors serve different functions and demand frequency of use, occupancy and volume of traffic. The designs allows sufficient space for wheelchair accessibility for pupils, staff and visitors.

Circulation spaces are sufficient and fit for their purpose in terms of size, number and type. They are a suitable shape in relation to their width, length and height.

2.3 The shape of teaching spaces

The shape of teaching spaces helps to support flexible curriculum arrangements and the creative configuration of furniture and resources, whilst maintaining safe supervision and contributing to a comfortable environment for teaching and learning.

The shape aims to enhance the effectiveness of curriculum delivery and facilitate access to improved learning opportunities. It also helps to define the space's character and its sense of place, providing cues and associations for wayfinding and identifying what learning experiences are available. These are all important for pupils with SEN.

2.3.1 The type of activities which take place and fitness for purpose

In a teaching space, a variety of teaching and learning styles will need to be accommodated effectively within the chosen shape. Activities undertaken will reflect pupils' age, the type of their needs, interactions and play. They may include individual or group work (with wet or dry activities), quiet work, one-to-one sessions, projection, or the use of whiteboards, computers and specialist equipment, some of which is bulky.

The shape supports the use of ICT in learning, so that whatever the layout, the pupil and teacher should be able to see each other, the visual display or whiteboard and the demonstration area.

Access to all areas of the teaching and learning space for pupils with physical, motor or sensory difficulties is imperative. Consequently, the shape of a space must allow pupils' unrestricted movement and access to learning.

Minimising effective circulation routes in the class base maximises the remaining space available for flexible teaching and learning arrangements, whilst ensuring accessibility to all areas.

Providing the maximum unbroken length of wall enables flexibility for projection purposes, and for the display of work and resource material.

The shape allows effective levels of supervision, ensuring safe access and egress; safety and security of pupils, teachers and assistants must be maintained. Health and safety requirements for supervision of pupils

undertaking specialist activities necessitate good sight lines, especially if these activities involve risks. Ensuring clear sight lines for both active and passive supervision is essential.

2.3.2 Flexibility and adaptability

The shape of the spaces facilitates a number of different uses now and in the future, giving a 'loose-fit' arrangement. Adjacent spaces are compatible and inter-relate (allowing, for example, flexible use by means of adjoining doors).

2.3.3 Sustainable approach

The shape supports a sustainable approach for providing comfortable learning environments, with technical services supplied and located conveniently.

2.3.4 Relationship with the outside

Maximum benefit from a range of outdoor experiences, and social and learning opportunities, is derived by the direct relationship of the teaching space to the immediate external environment. The need for direct access to external areas will depend on curriculum activities, as well as on the type and range of special educational needs.

The outdoor space is therefore integrated into the whole design. Consideration has been given to the points below.

2.3.5 The rationale and purpose for direct access to the outside

Experience of the external environment is an essential part of the curriculum. Class bases opening directly onto an external area are beneficial for pupils in the Foundation Phase.

Enhancing the connection to external spaces, with appropriate views from the inside to outside, can help to facilitate the delivery of the outdoor curriculum.

A covered outdoor space makes a positive extension to the class base.

Direct access to the outside provides effective emergency escape from practical specialist-subject spaces, performance spaces and halls. Having a means of escape is of great concern to those with SEN and disabilities and these requirements should be established early on and set out in operational drills

2.4 Links between teaching spaces

It is important to maximise access to the curriculum and enhance inter-related learning opportunities for all pupils. The design provides optimum links between spaces for:

- 2.4.1 The curriculum and its delivery - Effective relationships between teaching spaces supports the inter-relatedness of subjects and the mode of curriculum delivery. For example, links may be made between Mathematics and Science, Art and technology.
- 2.4.2 Links between teaching spaces and learning resources - Group rooms can serve enables flexible use and assists with learning and behaviour support.
- 2.4.3 Separation of noisy and quiet activities - Separation and careful siting of noisy and quieter activities is critical. Pupils who are more sensitive to distractions, or who have hearing impairments, should not be disadvantaged in their learning.
- 2.4.4 The proximity of practical specialist-subject spaces to other teaching spaces - Careful siting facilitates good timetable management and minimise travel time. Providing effective links between specialist-subject and/or general-teaching and/or therapy spaces can enhance pupils' learning experiences.

2.5 Optimum room relationships

A rationale for the inter-relationship of teaching spaces, their proximity and associated travel distances is essential. Age-appropriate independent travel is good for social learning but is difficult and tiring for some. Reasonable and convenient travel distances from the teaching spaces to the locations for dining, assembly, specialist therapy and respite are therefore well planned.

Ease of access and egress is essential. Teaching spaces are positioned to avoid congestion which can occur during arrival and departure times.

2.6 The location of toilet and hygiene facilities

Pupils who have SEN may also have physical disabilities, medical needs or a low level of immunity to infections. Meeting health and safety requirements is crucial for infection control and maintaining hygienic procedures and practices. Therefore, consideration of these needs are integrated into the design in a way which is sensitive and appropriate to the needs of all users. This involves:

- 2.6.1 Facilities which are age-appropriate, with respect to pupils' needs to ensure that dignity is maintained. Assisting progress towards independence in this way also supports social learning.
- 2.6.2 Providing convenient travel distances from all spaces to facilities for wheelchair-users for independent access, or for assisted access with support from staff, for whom the health and safety requirements are seen as important.

2.6.3 Ensuring convenient access to toilet, hygiene or changing provisions in close juxtaposition to all teaching spaces, especially practical specialist spaces, thereby supporting pupils in their access to learning.

2.7 Storage

For effective teaching and learning, curriculum delivery and the management of resources, sufficient suitable storage is essential.

Storage is provided in every teaching space for general needs, for specialist resources, security needs, mobility or specialist equipment and for personal belongings.

Storage is provided for pupils' personal belongings and provision for SEN is also provided. For example, pupils' mobility equipment may be stored in the teaching space to avoid blocking corridors.

2.7.1 The size of storage

Storage is needed for:

- large materials, equipment, loose furniture or mobility equipment, play equipment, manually moveable apparatus and manual handling bulky items
- specialist equipment, apparatus, small and large materials for practical specialist subjects
- pupils' work in progress

3.0 ICT

The effective use of ICT and advanced technologies can maximise social and learning opportunities by promoting individual attainment.

3.1 Information and Communication Technology (ICT)

Technology is accepted as an integral tool in meeting individual needs and creating an inclusive learning environment. It offers much to facilitate a variety of teaching and learning styles. To create a transparent interface between technology and the broadest spectrum of learning opportunities, detailed planning, design and implementation was essential. This ensures that pupils with SEN and disabilities are included and gain maximum benefit from its impact on their learning.

The school building design aims to accommodate current and future requirements for the technologies used by all staff, pupils and community users. The design positively impacts upon the success of delivering ICT both as a subject and across the curriculum.

Schools are increasingly viewed as community resources, so visitors are provided with appropriate access, not just in terms of access to computers but taking full advantage of facilities such as induction loops, Braille,

recorded literature and translation facilities for other languages as appropriate.

3.2 Current and future needs in relation to ICT

There is increasing use of ICT in all teaching and learning spaces. Therefore the requirements for different interfaces, access technology or specialist equipment in relation to the type and range of special educational needs and disabilities of the pupils must be established.

The use of ICT has been carefully considered and, as with all subjects, layouts prepared to show that all pupils' needs can be accommodated.

Consideration of ergonomics and space requirements ensure that the use of computers in relation to adjustable height furniture, and by those who use wheelchairs and standing frames are all possible.

White / interactive boards are positioned carefully and are height adjustable so as to enhance communication and interaction in relation to the size and shape of class bases. This is of particular importance for those pupils who may rely more on their visual sense. The pupils and teacher should be able to see each other and the whiteboard clearly and with ease.

The view of the white / interactive board are not impaired by glare, shadowing or silhouettes, or obstructed by equipment or building structure.

Appropriate good-quality lighting, blinds and positioning are essential. Fixed computers sited so as to ensure non-glare conditions.

The use and location of ICT should be separated appropriately from water.

4.0 **ENVIRONMENTAL SERVICES AND TECHNICAL SUPPORT**

It is essential to provide a comfortable learning environment whilst maintaining a coherent sustainable whole-school approach designed to meet a range of special educational needs.

The following key issues act as a checklist for all spaces:

- 4.0.1 Natural daylighting and orientation with glare and solar control preferred
- 4.0.2 Good-quality artificial lighting and the most appropriate type(s) of controls
- 4.0.3 The means of natural ventilation, its operation and control preferred
- 4.0.4 The need for and type of mechanical ventilation and controls
- 4.0.5 The means and type of heating and cooling with adjustable local controls
- 4.0.6 Acoustic quality and the level of sound insulation, absorption or noise control
- 4.0.7 Water supply and drainage services for hot and cold water to sinks, waste pipes and drainage or sprinkler systems
- 4.0.8 Health and safety, security, means of escape
- 4.0.9 Wired services for electrical or electronic power or data communications and alarm systems (for telephone, staff alarms, fire alarms, fire/smoke

detection, door alarms and controls, security alarms and detection), electronic ICT services for delivery of curriculum and for SEN.

In addition to the above, the following specific issues are considered for practical specialist subjects.

- 4.0.10 Higher levels of illuminance are required for detailed work, with a flexible range of provision for daylighting, artificial non-glare luminaires and appropriate task lighting.
- 4.0.11 Rapid extract ventilation of unwanted smells, fumes, heat and dust may be needed, as well as ventilation through opening windows, which should not be fouled by blackout or dim-out material or blinds.
- 4.0.12 Appropriate acoustic quality and sound insulation for specialist spaces, eg in technology, music and drama spaces and halls for physical education (specialist provision for hearing impairment is provided).
- 4.0.13 Technical support services of hot and cold water, gas and electrical services with sufficient power outlets, rapid-extract ventilation and rapid access to emergency power and gas services for cut-off.
- 4.0.14 For health and safety reasons, ease of access and adequate clearance space for the operation of alarms, fire-prevention and detection devices and for maintenance and emergency work.

5.0 BUILDING ELEMENTS – MATERIALS AND FINISHES

It is important to provide an appropriate and enriching sensory environment to meet the type and range of special educational needs in terms of fitness for purpose.

Appropriate specifications, careful use of materials, specialist functional details and good quality construction are all essential. Consideration of sustainability, robustness and durability have been made, as well as of practical maintenance and whole-life costs.

It is essential that building elements are appropriate and fit for purpose. For each teaching space this has involved decisions about:

- window type – size, glazing, operation, view out, blinds or blackout
- door type – size, glazing, operation, ironmongery, protection and signage, internal fixed or opening, glazed window or screen, type, size, view
- glazing and acoustic requirements
- general ironmongery – handrails, guarding, protection corners

Designing for accessibility and inclusion is essential for all spaces. This involves careful consideration of materials and finishes as well as of design quality. The following aspects have been considered in relation to these:

- providing well-organised, wide, clear circulation with routes that are easily identified, understood and accessed, through changes in floor texture and orientation landmarks, clear signage and wayfinding
- allowing sufficient space for circulation for wheelchair users and their support workers or carers, as well as for people with buggies, pushchairs and prams

- avoiding glare from natural and artificial light sources and providing good quality lighting and blinds suitable for users
- enhancing visual clarity using colour and tonal contrast between surfaces (especially for door openings, doors and door handles) as well as to warn and define clearly all surfaces at changes in level or surfaces
- design with an awareness of acoustics, and planning for noisy and quiet spaces. Reducing background noise, and understanding the relative need for sound insulation and sound-absorbing or reflecting materials
- using ceiling or soffit surfaces with good light reflectance, acoustic and maintenance qualities
- using smooth, non-abrasive, impact-resistant, easily maintained wall finishes with acoustic absorption at high level and protection corners if required
- using floor surfaces which are hard wearing and easy to maintain, and which have suitable slip resistance and acoustic backing, as required. Avoiding visually confusing highly polished patterned floors.

Part 2 – DESIGN OF SPACE, COMPONENTS AND SERVICES

As a principle, a design-quality approach has been adopted in line with SENDA and DDA, to meet the needs of the pupils and staff (instead of just meeting the basic minimum regulations as a maximum).

In many cases, a far higher quality of design than the basic standard of provision has been provided in order to meet the needs of pupils with SEN and disabilities.

Relevant building legislation summary list is given below:

- DDA, as amended by SENDA 2001 Part 4: Education
- Building Bulletin 102 – Designing for Disabled Children and Children with Special Education needs
- BB93 – Accoustic design of schools
- BB101 – Building Bulletin 101 – ventilation in school buildings

- DfES Guidance Note: Accessible Schools

- DfES Constructional Standards 2001

- Current Building Regulations as amended

- Building Regulations Approved Document M 2004: Access to and Use of Buildings

- BS8300: Design of Buildings and their Approaches to Meet the Needs of Disabled People

- HSE guidance

- The Education (School) Premises Regulations 1999

- The Education (Independent School Standards) (England) Regulations 2003

- Section 77 of the School Standards and Framework Act 1998

It must be understood that such legal provisions are a basic minimum standard only. Reference is made in the brief to further relevant documents, guidelines and statutory legislation.

FLEXIBILITY AND ADAPTABILITY

During the life of the building, many changes may occur which the building and site should be able to accommodate to a reasonable extent without excessive disruption and cost.

Such changes are inevitable and within schools there are many drivers for them, such as:

- intake of pupils with a wide range of age, type and changing educational and health needs
- ICT and other technological advances
- head teachers and school management needs
- curricular approaches
- new teaching methods
- increasing outreach and training
- multi-agency working
- extended schools
- community use

The design incorporates strategies for flexibility and adaptability so as to accommodate to these changes using effective strategies involving the factors outlined below:

Structure and services solutions

Considerations will include:

- permitting the rearrangement of internal walls to new configurations over time

Configuration of rooms, their layouts, furniture, fittings and equipment

- encouraging flexibility within the teaching spaces in terms of room size, standardisation, room shape, loose and fixed furniture and linking spaces together
- understanding the practicalities affecting pupils and staff, as well as school-management issues.

CEILINGS

Generally, materials have been selected which have good light reflectance, in order to give an even distribution of light at the work plane, and to avoid glare.

Lighting fittings have been chosen which minimise glare, are easy to clean and maintain, and avoid dust collection. Acoustic-absorbing materials have been used as required in the ceiling and/or for the upper surface area of walls at high level. Careful specification of suitable materials is essential as part of the whole-design approach (see BB93).

WALLS

An assessment of the need for a load-bearing or permanent structure and lightweight construction has been made in relation to adaptability and flexibility for the life of the building.

Strategic positioning of structural and service cores, efficient structural grids, horizontal and vertical spans, as well as fire compartments and means of escape distances, was a requirement.

Walls have sufficient strength, stability and impact resistance. For example, planning was made for the installation of hoists.

Ease of maintenance was considered for the life of the building. Generally it is better if walls are smooth and non-abrasive. Therefore, a decorated, plastered finish was preferred to smooth-painted or fair-faced blockwork.

Materials which give an institutional or unwelcoming appearance were avoided.

Protection to exposed corners were also avoided.

Wall surfaces have smooth, hard impervious/impermeable surfaces, and be free from fissures, open joints, crevices that permit, dust, dirt and insects, and be easily wipeable and cleanable for infection control and ease of maintenance.

Walls near wet areas are tiled or have sufficiently large splash backs to fittings.

In very particular cases, walls to some rooms used for respite or calming may require soft, impact-resistant finishes, such as an appropriate non-abrasive carpet up to dado or a higher level, in order to prevent distressed pupils harming themselves.

Provision for display materials have been integrated into the design with display boards in order to avoid visual clutter and sensory overload, confusion and distraction.

Visual contrast between the wall and floor surfaces, doors, their frames and furniture, is essential. Use of tactile stimuli, signage and wayfinding has been carefully considered.

FLOORS

Floor coverings are hard-wearing, non-abrasive, smooth and non slip. They are an acoustic-absorbent surface or backing which allows for greater wear and tear and is dirt and soiling-serviceable, but still attractive.

Specialist advice from manufacturers has been obtained so that floor use, fitness for purpose and appropriate cleaning can be guaranteed.

The choice of floor finishes was influenced by the type of pupils, their age and the mobility aids which they use. Wheelchair tracking is provided in the hall and corridor and such an appropriate floor covering was required.

A combination of hard and soft floor finishes works well in class bases and circulation areas. The rationale for use, and the proportion of hard and soft floor finishes in teaching spaces, was identified and agreed with the school staff.

Carpets which are soft, can help with acoustic performance and be appropriate for floor work.

It is essential that the correct specification is made, so as to ensure that friction burns are avoided for children who spend a lot of time on the floor or who move along the floor surface.

Specialist carpets should have impervious backing, and be washable where there is frequent spillage and heavy traffic is anticipated. Such carpets can, however, retain unwanted odours and be harder to clean and maintain. This is an issue to be managed where there are vulnerable pupils, because infection control is vital.

Hard finishes are impact-resistant and hard-wearing, floors). They must be non-slip and safe in dry and wet situations. The vulnerability of pupils and the risk of falling to the ground and being hurt should be assessed and taken into account.

Non-slip sheet flooring with acoustic backing (lino or equivalent) is water-resistant, hygienic and suitable for use around wet areas such as sinks.

The specification for ceramic tiles for wet areas, such as in showers and hydrotherapy, was ascertained appropriately, especially where there are ramps and changes in level. Reference can be made to BS8300, current BS or DIN for slip-resistance standards, bearing in mind the cleaning methods employed.

Highly polished floors which lead to glare and visual confusion have been avoided, as should highly patterned floors. There is visual contrast with the wall surface and use of colour differentiation between floor materials can assist with wayfinding and give variety to the space.

THRESHOLD AND ENTRANCES

Level thresholds to the external areas are essential. Any metal upstand or abrupt change in level can impede wheelchair accessibility and cause a barrier or hazard. Staff are not expected to lift chairs over thresholds and risk damage to their back.

Specialist threshold carpeting has been used in front of external doors (in addition to or instead of mat-wells).

DOORS AND DOOR OPENINGS

The correct selection and specification of all doors in circulation spaces is critical. All openings must be wide enough for those in wheelchairs or having other physical disabilities, or else by their support workers.

Doors should be easy to identify, user-friendly to operate and allow good visibility on both sides of the door for all users.

Doors in all buildings can be difficult for wheelchair users and those using mobility aids and their support workers to use, especially if fitted with door closers. Manoeuvring heavy doors and the use of door closers can often be problematic. Where the use of door closers cannot be avoided, all closers open at least a full 90° and be fitted with a hold-open device with a delayed action closer to suit the weight of door.

Some people do not have upper body mobility and need assistance. Automatic operation of the doors by sensors on some doors has been provided.

Specification of doors and their operation as an integral element along with other technical aspects of design and an assessment made in relation to the following:

- clear opening width
- weight of the door
- fire resistance
- acoustic performance
- ventilation needs
- need for vision panels
- ease of door operation
- the need for alarms, security, safety and containment
- the specification of finishes in relation to maintenance, kick-plates and wheelchair protection
- signage, symbols and objects of reference.

Doors have the appropriate strength, durability, robustness and integrity. Fire resistance and sound insulation will need to be considered.

Door surfaces have impact-resistant, smooth, durable, hard-wearing and easily cleaned and maintained surfaces.

Door releases are connected to the fire alarm system. A fire strategy was developed at the outset in support of such solutions including;

Use of laminate finishes can introduce colour. Consideration of ease of methods of repair and maintenance for damage to doors and frames should be made.

Doors to class bases have vision panels at high and low level to allow smaller pupils and those in wheelchairs to see whether someone is coming through the door from the other side. The appropriate safety glass has been used, along with manifestations and blinds for obscuring or privacy, if required.

The selection of ironmongery for doors to classes required careful thought and discussion with the staff, and the rationale for access and egress by pupils and their supervision was assessed.

The specification of ironmongery and security impacts on school management and supervision of pupils. Consideration was made for the provision of:

- door handles with a D-handle profile were preferred for accessibility

- double-lever handles with reversed top lever, with snib to limit egress. Where these are required, a suitable number of responsible adults must be retained in the space in the event of an emergency
- deep kick-plates, anti-finger-trap/finger guards and wheelchair protectors to door frames and door seals
- visual contrast and suitable signage to doors. It may also be necessary to incorporate tactile stimuli or support for objects of reference.

INTERNAL GLAZED SCREENS

Manifestation was required to large areas of glazing. Glazed screens may also need to be designed to meet sound reduction requirements set out in BB 93.

WINDOWS

An even distribution of daylight across the whole room is the aim.

Natural daylight, whether from high or low vertical windows or roof lights, is maximised within the constraints of energy efficiency, solar control and glare.

Generally it is beneficial to have a view out of the class base. Low-level glazing conforms to safety standards.

Windows should not present a hazard and are high level. Such a measure prevents pupils from climbing out of windows if distressed.

Security locks are in place where required

Window-opening manual or automatic control gear has been carefully planned.

The area and type of openable window is part of an overall ventilation strategy. Adequate ventilation is needed to maintain an appropriate level of oxygen. Opening windows may not be adequate, can cause draughts and can reduce sound insulation and heat loss. Passive ventilation with slot ventilators is the solution. Attention also has been paid to individual needs and a checklist of design details is set out below:

- Design to avoid damage to fittings from pupils who climb upon boxings, window cills, downpipes or external fencing.
- Use of simple detailing and reduce complexity and changes of plane so as to be simple to read and reduce the opportunity for obsessiveness on details for some pupils.
- Balance the need for security and independence.

Use of heavy-duty specifications to eliminate risks through design but avoid institutional appearance:

- robust materials, but find right balance between tough, hard-wearing, easily maintained materials and special equipment, and everyday domestic/ordinary items.

- Safety precautions for damage to doors, wiring, plumbing, plaster and glass.
- Simple, strong, solid and attractive furniture and equipment.
- Robust sanitary equipment and ironmongery.
- Avoidance hard-edged corners, edges for furniture, wiring, plumbing or electrics.
- Avoidance of ledges, recesses and tight angles where dust particles can be trapped, to allow ease of cleaning.

The following was used :

- sealed skirting boards
- low-dust-retention fixtures/fittings
- splash-backs to sinks (where not height-adjustable) and intact seals around sinks
- welded/sealed joints to prevent water egress
- seals around pipes, ducts and conduits running through floors and walls.

ENVIRONMENTAL SERVICES

ENERGY AND SUSTAINABILITY

Sustainable design is vital. A successful school design will achieve a balance which results in a high-quality environment at all times of the year, low energy usage, minimum harm to the environment and best value for money.

The sustainability issues impacting on a special school are common to most schools. The overall energy use, however, may be higher in some schools due to the higher internal-design temperatures, increased use of mechanical ventilation and requirements such as hydrotherapy.

Efficient management of energy requirements is imperative and has been used as an integral part of the learning experience for the whole school.

It was essential that there was a high level of environmental awareness brought to bear and careful consideration across all aspects of a building, from the conceptual stage through to detailed design.

The requirements for energy conservation are set out in detail in BB87 and Part L of the Building Regulations was followed

Environmental issues were examined in turn below for lighting, heat, ventilation, acoustic ancillary facilities and services.

BREEAM Pre Assessment – Excellent rating was achieved

LIGHTING

Appropriate lighting is the most important for vision. About 70-80% of information is gained through the visual sense. Good lighting is, therefore, essential for effective teaching and learning.

The following requirements for a satisfactorily lit environment are achieved:

- sufficient luminance on the working plane for good visual acuity
- good lighting of the teacher's face to face communication and interaction
- avoidance of glare and silhouetting (teachers or pupils faces can be in shadow against a window or against bright or highly reflective surfaces), reflections, cast shadows and any other interference which causes visual confusion
- good visual contrast is essential in the physical environment

Natural lighting: sunlight and daylight

Daylighting

Daylight has been maximised and natural light is the prime means of lighting during daylight hours, wherever possible.

Sunlight and daylight have been controlled to avoid excessive solar gain and glare. People need a connection to the outdoors and a view out onto a sunlit area was considered adequate.

Natural lighting is as positive and desirable. High levels of natural light are perceived as uplifting to the spirit. Low light levels can create gloom and are perceived as depressing, resulting in poor visibility and discrimination of the surfaces of spaces and this may increase anxiety or contribute to accidents.

Larger windows present more opening area for providing natural daylighting and ventilation.

With appropriate insulation values, the total energy use for lighting is a significant percentage of the total energy consumed. High-performance glazing minimises heat losses.

An even distribution of daylight across the class base is achieved to reduce the need for artificial lighting, reduce energy use and maintenance costs.

Design avoids excessive roof overhangs and deep window reveals which can radically reduce daylight reaching the class base.

Artificial lighting

Detailed advice on lighting design for special needs was referenced via in Building Bulletin 90. There is no single solution and what may assist one person may well not assist another. Lighting for all pupil areas is in accordance with the guidance above to ensure that accommodation is used flexibly for the full cohort of pupils.

Lighting quality and type follows the recommendations of BB90. These requirements have been adhered to for all lighting. In addition the following factors were considered:

Lighting controls may be needed for various activities in different areas of a class base. Control of lighting satisfies pupil needs and enhances the learning environment. The increasing use of computers, projectors and whiteboards exacerbates visual problems.

Other points to consider are:

- Windows at corridor ends can cause glare.
- A 'white' board on a dark coloured wall can be a glare source whereas a traditional 'blackboard' would not.
- A view of a daylight scene through a window can be a disabling glare source.
- Higher illuminance may be of assistance to the visually impaired, depending upon the cause of the loss of acuity.
- Both loss of field and loss of acuity can occur together.

- High-gloss finishes and high-reflectance surfaces may also be a source of glare.

The following specifications were used to guide the design of the lit environment in schools with SEN provision.

Lighting specification
2% Daylight Factor
Minimum for assembly halls but 4-5% ideally
4-5% Daylight Factor
In mainstream schools, 2% average daylight factor is adequate for most areas. A higher daylight factor on the working plane, in class bases, corridors, practical areas and teaching areas is preferable for schools with pupils with SEN
0.3-0.4 Minimum Uniformity Ratio
The ratio, minimum/average daylight factor, is applicable to side-lit rooms. Daylight penetration for rooms deeper than 6m will need to be considered. The deeper the room and the higher the floor to ceiling distance, the greater is the need for additional daylight at the back of the room, which can be achieved with clerestory or roof lights in single-storey buildings.
0.7 Uniformity Ratio
For top-lit spaces, higher uniformities are expected. Borrowed light or light shafts can be used on lower floors (loss of floor area and safety/guardings of voids should be considered).
350 (lux)
Good quality electric lighting is essential. Lighting should be capable of the luminance required by BB87. 350 lux is the lighting level required in all general teaching areas.
500 (lux)
Maximum level required for detailed work such as painting. Task lighting for individual pupil needs, especially for pupils with sensory impairments.

HEATING AND THERMAL COMFORT

Thermal comfort for pupils is a combination of air temperature, dry resultant temperature, humidity and air movement. Depending on the particular difficulties of individual pupils, the temperature at which thermal comfort is achieved in a room may vary. Outlined below are the design temperatures for a variety of environments that were used to address the needs of a wide range of pupils.

Controlling room temperature

To maintain a comfortable temperature for occupants, it will generally be necessary to have a means of supplying additional heat into an environment to counter the effect of seasonable temperature fluctuations, variable occupancy and airflow etc.

Control systems

It may be difficult for some pupils to verbalise their discomfort in a given environment. Teachers and carers must be aware of this and be able to respond to the needs of the pupils. Should any space be used for more than a transitory period, a limited degree of temperature control must be available. Individual room controls are in place, located to prevent both pupil access and interference.

Ambient design temperatures
18°C-21°C
This temperature is in line with conditions required by mainstream schools. Pupils are normally clothed, ambulant and reasonably active, even if sedentary at work.
23°C
This applies to special schools and resourced provision where needs of pupils tend to be complex, varied, including pupils with physical difficulties or profound and multiple learning difficulties. If pupils are non-ambulant, or with very low activity rates, the design temperature should be slightly higher. The capacity to operate at this higher temperature should be balanced with impacts on energy consumption. Excessively high temperatures should be avoided. This may be distressing to individuals, some of whom may not be able to verbalise their discomfort. Some form of solar control will also be required to prevent direct sunlight from falling on pupils with limited mobility.
25°C-30°C
In locations where pupils may be wet or partially clothed for a significant length of time, rapidity of air movement can lead to chilling by evaporation. To compensate, a higher design temperature may be required. Where medical inspection, bathing and changing are carried out, the air speed in these environments should not exceed 0.1 ms^{-1} at 25°C.
28°C
When this temperature is reached or exceeded, overheating is said to occur. Measures should be taken at the design stage, as a priority, to ensure this does not occur where pupils have a high level of need to be met. Additional thermal gain, potentially caused by specialist equipment, may often be countered at a much lower occupant density in teaching spaces.

Heating methods

Radiators

These are normally the most suitable choice. In special schools they should be low surface temperature types. Any that may be touched should have a surface temperature below 43°C.

To minimise the collection of dust and pathogens that can be sources of infection to vulnerable pupils, radiators should be smooth, without convector fins, easy to clean, accessible and robust.

Low-level boxing and exposed pipework should be avoided. Both provide an opportunity for pupils to stand or climb on them. To avoid this, distribution should be planned at an early stage and routed through floor ducts. Should this not be possible, the pipework and boxing should also be smooth, easy to clean and robust.

Risk assessments should be undertaken, as pupils who have behaviour, emotional and social difficulties may be at less risk from standard radiators.

However, younger pupils, those with more complex needs and pupils with SEN and disabilities should only be exposed to low-surface temperature radiators in broad-range special schools.

Underfloor heating

This may be a legitimate source of additional heat, but only in carefully identified situations.

A surface temperature of $23 \pm 2^\circ\text{C}$, the comfort temperature for low activity, should not be exceeded.

As a result, further heating may still need to be supplied to the room through additional sources. This may also be the case in areas near external doors.

The warm-up time can also be considerably longer for underfloor heating than conventional radiator systems.

It will be unsuitable in locations where large areas of the floor may be covered in matting.

For reasons of hygiene and odour control, underfloor heating should not be used in locations where there may be regular spillages and in toilet and hygiene areas.

Fan Convectors

These are not generally recommended in teaching spaces and halls as they can be a source of problematic background noise. By circulating dust and contaminants, fan convectors can also promote cross-infection.

Radiant Ceiling Panels

These have the advantage of high surface temperature not being a problem. These are generally not a preferable solution as thermal stratification can occur. Adults may feel hot particularly around head height. Pupils, particularly those that spend some time on the floor, may not be provided with enough heat.

Underflow heating was the chosen option.

ACOUSTICS

Classroom management alone cannot ensure that speech communication is sufficiently audible and intelligible if the classroom acoustics are not adequate, or if a child has a hearing or listening difficulty. In order to ensure that children are able to hear the teacher and, to a lesser extent, their peers, a number of technological solutions have been developed.

Noise transmission from the outside, from circulation areas or other teaching spaces is also a matter for consideration in the design if ambient noise levels are to be kept within the standard. Noise distraction and high ambient noise levels are particularly unacceptable in a special school, or resource provision, where pupils may have hearing impairment and communication difficulties.

In a special school there will be a proportion of pupils who are hearing-impaired. There will also be a proportion of pupils with highly sensitive hearing. Generally, special schools have a lower occupancy level and therefore, background noise will be lower than in mainstream schools. This will, however vary according to local situations.

Although the acoustic guidance in BB93 is not intended specifically for the design of special schools provision, it does provide a lot of information on the needs of hearing-impaired children and is, therefore, a good starting point for design decisions. Generally, the standards in BB93, if adopted and applied correctly, will provide a good-quality acoustic learning environment.

Where there are specialist needs for pupils with hearing impairment, reference can be made to section 6 BB93 and the case studies in section 7.

To develop strategies for assisting children with hearing and listening difficulties, refer to publications by the Royal National Institute for the Deaf [13], the National Deaf Children's Society [14] and DfES [15].

Specialist advice from the advisory sensory service to ensure compliance with current standards. Acoustic calculations for most spaces was un-deadened Carpets provide some absorption in a class base but not a sufficient amount, therefore acoustic material on walls, at high level, were needed. Acoustic baffles, suspended from ceilings and in light fittings, were also used.

VENTILATION

Good air quality is necessary for the learning environment. Appropriate levels of oxygen are required to contribute to concentration, while reducing the build up of carbon dioxide will help to reduce drowsiness in pupils. An effective ventilation system can aid the achievement of both of these goals. Ventilation is an important hygiene requirement as well as a comfort requirement. In some schools, such as those for pupils with severe (including profound and multiple)

learning difficulties, the planning of ventilation should take the risk of cross- infection into account.

Natural ventilation

In designing a natural ventilation system the principles outlined in BB87 (2003) was applied.

Additional factors considered in the context of SEN provision included:

A ventilation strategy sensitive to seasonal variability. In winter, when it is cold outside, pupils may also have wet clothing.

Opening windows is not always suitable ventilation solution as it can lead to draughts, an inflow of external pollutants, heat loss, issues with blinds and increased sound transmission.

Occupant control over any automatic-opening ventilation are provided with silent' opening systems.

Mechanical ventilation

Methods other than air conditioning were mostly used to control the building temperature. Some air conditioning has been added.

Mechanical ventilation are in place for hygiene areas for vulnerable pupils. The supply ventilation filtered, to at least F4 standards with pre-filters to increase the life of main filters and in certain cases, to F6 standards.

Good access is essential for maintenance of ventilation systems and ductwork to avoid the risk of infection.

Ventilation	
<i>Teaching spaces</i>	
2.5 air changes / hour minimum	Natural ventilation ideally needs to contribute to controlling internal temperature
<i>Halls, gym, dining, physiotherapy</i>	
8 litres per second per person of 2.5 air changes per hour whichever is the greater. Ventilation should be sufficient to limit CO ² to 1500 ppm and control odours.	Rate can be reduced for intermittent occupancy of short duration. Dependent on density and time period of occupation.
<i>Specialist teaching spaces</i>	
Supply air should	Mechanical supply (unless a suitable natural route for make-

<p>be sufficient to replace process extracted air, control internal temperature and control odour/CO²</p> <p>Extract air should be sufficient for requirements for fume, steam and dust removal and to control internal temperature and CO²</p> <p>Heat recovery is recommended to reduce energy consumption.</p>	<p>up air can be provided) and mechanical extract will be required to the following areas:</p> <p>Design and technology where required to remove dust and fumes.</p> <p>Science rooms. Ventilation via fume cupboards should be avoided as they are seldom switched on.</p> <p>Sensory rooms.</p> <p>Food technology.</p>
<p><i>Laundries, soiled holding or waste, cleaner's rooms</i></p>	
<p>5 air changes per hour minimum</p>	<p>Mechanical extract with provision for natural or mechanical make up as appropriate.</p>
<p><i>Hygiene, lavatory and changing areas, medical inspection rooms and sick rooms</i></p>	
<p>10 air changes/hour minimum</p>	<p>Mechanical extract to outside, provision should be made for make-up air, which should be heated and filtered.</p> <p>Heat recovery might increase risk of cross-contamination of supply air. Heat recovery is recommended.</p> <p>Wall-type combined extract and supply fans are now available to assist with heat recovery and should be considered in preference to normal extract-only fans.</p>

INFECTION CONTROL

Mechanical ventilation can transmit infection in two ways. Pathogens carried in the air, on dust and in droplets that evaporate, all contribute to the airborne transmission of infection. The second mechanism is through a common vehicle, such as shoes or wheelchairs.

For mechanical ventilation the vehicle may be water that exists in air-cooling towers. Bacteria that cause Legionnaire's disease can breed in cooling towers and can then be transmitted in a mist through the building, or to the outside air.

Ventilation cooling systems have been designed to avoid contamination and growth of bacteria. They should be maintained at the recommended temperatures to prevent growth of Legionella.

Any recirculation of air within a pupil area will increase both the risk of cross-infection and the circulation of allergens and so has been avoided. Supply inlets draw air from a clean environment, and extract outlets are positioned such that there is no risk of re-circulation into a supply inlet or natural ventilation opening.

Extract systems or transfer arrangements have been designed to ensure there is no possibility of back draughts from one area to another.

Hygiene, wc, shower areas, areas holding soiled clothes or clinical waste and laundries should all be mechanically ventilated.

WATER SERVICES

All hot water delivered at outlets such as basins, sinks and showers used by pupils are at a temperature no greater than 43°C. Fail-safe thermostatic mixing valves provided locally to the outlet have been used. Guidance for prevention of Legionella given in BB87 (2005) has been followed.

It is essential that sufficient cold water storage is provided which have to provide for a high level of needs to be met. Water use is considerably higher than for mainstream schools. Tables in design guidance for mainstream schools were not, therefore, thought to be appropriate. Sizing of water services plant and distribution were based on calculated maximum simultaneous demand from proposed outlets.

ANCILLARY MECHANICAL SERVICES

Sprinklers

Based on advice from the Assembly, fire authorities and insurers, a sprinkler system has been used.

Medical Gases

A significant proportion of PMLD pupils are oxygen-dependent. There may be a requirement for bottle storage. Any bottle store should be located with vehicle

access and trolley ramps to and from the store, and the store should be lockable, not vulnerable to vandalism and located with external access only. The store should be ventilated.

A risk assessment will be drawn up if and when oxygen is required

ELECTRICAL SERVICES

Wired services

A co-ordinated services-distribution strategy to, and within, each teaching space was required as part of the conceptual design to avoid ad hoc arrangements at a late stage in the design and construction.

These included:

- power, data, telephone, public address, staff alarms, fire alarms, fire/smoke detection, door alarms, door controls and security detection.
- audio-visual gadgets, picture-exchange communication system (PECS) and sound sensory systems to identify rooms, switches, storage, means of escape and communications.
- access-control systems, cards and intercom systems between rooms.

Safety

All outlets are protected by a residual-current device. Outlets avoid trailing leads as described in the next section.

Provision of outlets

The provision of electrical socket outlets is based on the actual and future estimate of the outlets in use per pupil and for general and staff use. Children may use at least one additional aid, some more, which will remain from additional task lighting, to hand-held or desk-mounted readers or IT devices.

The number, type and location of outlets critical as it has a significant impact on the success of the learning tasks and activities. Services have been sited to support effective teaching and learning, and the activities undertaken in the space. Their location should mean, for example, that pupils can see the teacher, the whiteboard and their computer simultaneously.

In a large teaching space, it was judged that perimeter sockets alone would be satisfactory because there would be little flexibility in the location of pupils needing access to power or data outlets. Trailing leads are unsafe and should be avoided. The optimum solution was to provide a combination of several types of outlet. Floor ducts have been provided.

Type of outlets	
Advantages	Disadvantages

Perimeter trunking or sockets	
Trunking can be sized to allow future installation of additional data and power outlets without major disruption. Wall-mounted sockets lack this flexibility. Some systems can be moved to suit new furniture layouts.	Restricts location of students or enforces unsafe use of trailing leads. Should be used in conjunction with solutions below.
Floor outlets	
Provides power to the centre of the room. Furniture layout can be reasonably flexible, depending on how many floor outlets are provided. When supplied via raised-floor system, additional outlets can readily be installed.	Can be a trip hazard and unsuitable where spillages are likely. Furniture needs to be located over outlets otherwise a trip hazard is still a possibility from trailing wires.
Outlets built into furniture	
Best solution in specialist teaching spaces such as design technology and science.	Can be used in general teaching spaces but restricts ability to change layout.
Power columns or overhead sockets	
Power columns allow furniture to be grouped around the column and are not so vulnerable to spillages. Additional columns can be provided when distribution is via floor or suspended ceiling.	Overhead outlets look untidy and cable management can be a problem. Power columns restrict flexibility of space, as for floor outlets, but not as much as perimeter.

ANCILLARY ELECTRICAL SYSTEMS

Help alarms and/or staff-call systems

Where staff may need to call for assistance rapidly, panic or staff-call alarms have been provided. These are in the form of a radio-tracked alarms worn by staff as it can void staff being a distance away from the button. It can be work on their person. The alarm allows for help to be immediately summoned, and indicates where help is required. All spaces have an internal telephone so that they are able to ask for assistance in the case of lower level incidents

Fire alarms

Fire-prevention and detection systems has been installed, in accordance with current regulations, as required by the relevant authorities. Such system is appropriate to pupil needs including both visual and audible alarms and places of refuge for pupils who will need assistance to vacate building. Specific risk assessments are in place as required needed. Fire extinguishers and other fire-fighting equipment should not intrude on circulation routes.

CCTV

This is increasingly used in schools for security of staff and pupils. The privacy and dignity of pupils have been considered, along with privacy of residents in surrounding areas when planning CCTV installation.

Security

A balance was required to balance the need for security and the appropriate freedom of movement of pupils, staff and visitors. Operational procedures are in place setting out strategies for staff, pupil and visitor entry and exit, means of escape and evacuation in the event of fire.

There may be occasions when a pupil attempts to leave the school site and this may cause a risk to their safety. To secure a safe environment for all pupils all external access and some internal doors can only be operated with an issued fob.

Speech-reinforcement systems and sound systems

A significant proportion of pupils will have hearing impairments and also the requirements of the Disability Discrimination Act for all staff and visitors need to be met. The following is a list of systems available:-

- amplification, systems to play music in hall and drama spaces, recording systems and PA systems
- specific systems to assist hearing-impaired pupils

Colour

Research has identified the minimum difference between colours in order to create a detectable contrast, for application to interior design. RNIB advice on visual contrast identifies three acceptable colour schemes:

1. **Monochromatic** – One colour is dominant and other shades are based around the reference colour – eg all shade of blue.
2. **Contrasting** – One dominant colour is selected, but there is a choice of intensities of that colour or a complementary colour (eg blue and orange).
3. **Harmonious** – One dominant colour with varying levels of intensity, combined with one or two other colours fairly close in the spectrum.

These contrasting colours have been applied to critical surfaces of key building components (ie walls, ceilings, floors, doors, features, fixed seating or hazards). Next, secondary features such as skirting boards and trims have also been considered. Secondary features include:-

- **signage** - contrast between characters and sign backgrounds
- **toilets** - darker colours behind white sanitary fittings, different colours for dispensers, toilet seats or roll holders
- **switches** - to contrast against background
- **circulation routes or paths** - contrast in colour and tone of floor or ground
- **access doors** - contrast between the door and frame or the frame and wall
- **visual tasks** - contrast between work-surfaces and utensils or materials

EQUIPMENT

Hoists

Health and Safety Manual-handling Regulations require the use of hoists. Ceiling-mounted hoists are available in all classes and hygiene areas.

Portable mobile hoists will take up more space than ceiling-mounted hoists and have been avoided as far as possible. The turning circle for a mobile hoist and support worker is 2300mm diameter (BS8300).

Mobility equipment and its use

It was essential that there be effective space-planning to allow for the use of mobility equipment by pupils and staff in the learning environment.

It is also vital that there be sufficient space for the appropriate manoeuvrability for functional use, including tolerances for clearances to other items of furniture or structure.

Wheelchairs are getting larger and more sophisticated. The design and technology is forever advancing in order to maximise life changes for people with

disabilities. Sufficient space so take account of these issues was a consideration in design and is an ongoing matter of operational management.

These considerations should take into account mobility equipment when occupied and in use, allowing for projection of limbs, bulky clothing or shoes, arm rests in different positions, upright or reclining seating (to almost horizontal), foot-rests and extensions.

Being on one level there are no ramps to cause trip hazards or disrupt movement of mobility aids.