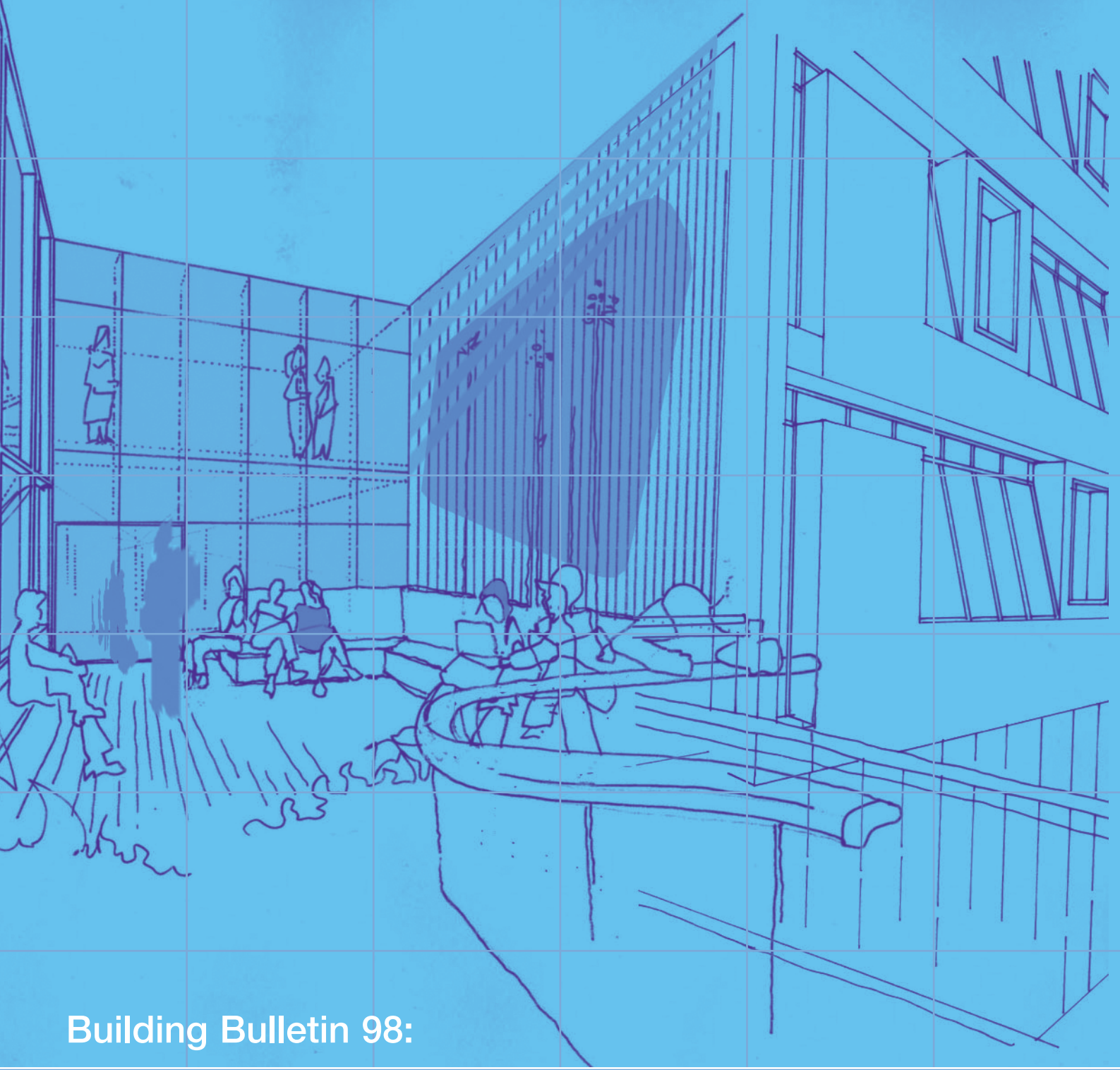


Building Bulletin 98:

Briefing Framework for Secondary School Projects

Revision of BB82: Area Guidelines for Schools (Secondary section)

department for
education and skills
creating opportunity, releasing potential, achieving excellence

Building Bulletin 98:

Briefing Framework for Secondary School Projects

incorporating secondary school revisions to
BB82: Area Guidelines for Schools

The key purpose of this document is to set out simple, realistic, non-statutory area guidelines for secondary school buildings (Part C) and grounds (Part D) which supersede those in Building Bulletin 82: Area Guidelines for Schools, published in 1996, and any revisions.

Following draft revisions and the publication of the Exemplar Designs for Schools, the recommended gross area of secondary school buildings has been further increased to an average of 18% above the maximum in 1996. Funding from the Department for Education and Skills (DfES) in 2005-06 and beyond, for instance in the Building Schools for the Future programme, will allow all new buildings to be built to these standards.

Simple graphs and formulae can be used to check that the number, size and type of rooms in both new designs and existing buildings are at least that recommended for six categories of usable space. These have been calculated to address the requirements, common to every school, of pupils with special educational needs (SEN) and disabilities, the school workforce and community use out of school hours. Similar standards are set for various categories of site area.

Crucially, a further 'float' is also recommended to accommodate the individual priorities of each school: whether facilities for the specialism or limited 'extended school' provision. Every mainstream school is expected to need at least the total net area recommended, which includes the 'float'. Some schools may then have further supplementary area over and above this, for instance for specially resourced SEN provision.

However, getting the area right is only part of creating facilities which support the educational aims and vision of each school. Design quality and appropriate specifications are also crucial. Part A of this bulletin offers a framework for every secondary school to develop a strategic masterplan, incorporating any future building project, whether major new buildings or minor refurbishments. Part B identifies the key issues that should be addressed in the brief to ensure that the design is in line with the organisation and preferences of the school.

The Government's continuing commitment to education is reflected in the recent sharp increases in capital funding for schools. In the light of this investment, it is now all the more crucial to ensure that any building project is in line with a long-term masterplan for the whole site.

The guidance in this bulletin will assist school staff and governors, with the help of Local Education Authorities (LEAs), dioceses, and building professionals, to develop a masterplan and a brief to the necessary detail and ensure that the priorities of the school are clearly expressed and can be carried through the design.

contents

page

Part A: The Briefing Process 5

Client Team 5
Outcome-based Approach 5
Preparing a Masterplan 7
Finding the Right Solution 7
Defining the Objectives 9
Developing the Options 11
Case Study 12

Part B: Design Criteria 15

Vision for the School 15
Implications for the Design 17
Organisation 17
Location Policies: Central or Local 17
Time Management 18
Using Technology 18
Furniture and Equipment 18
Extended School Facilities 19
Linked Provision 19
Shared Community Use 20
Curriculum Opportunities 20
Key Design Requirements 21
Flexibility and Adaptability 21
Access and Inclusion 22
Safety and Security 23
Environmental Performance 23

page

Part C: The Buildings 25

Gross Area of Buildings 25
Net Area of Buildings 27
Schedule of Accommodation 29
Basic Teaching Area 31
General Teaching Spaces 33
ICT Rooms 33
Practical Teaching Spaces 35
Performance Teaching Spaces 35
Halls 37
Learning Resource Areas 39
Staff and Administration 40
Storage 41
Dining and Social Areas 43
Non-net Area of Buildings 45
Toilets and Personal Care 46
Kitchen Facilities 47
Circulation 47
Plant 47
Internal Walls 47
Supplementary Areas 49

Part D: The Site 51

Total Site Area 51
Net Site Area: Playing Fields 53
Outdoor PE Facilities 55
Sports Pitches 55
Games Courts 55
Informal and Social Areas 56
Soft surfaced Areas 56
Hard surfaced Areas 56
Habitat Areas 57
Buildings and Access Area 57
Supplementary Site Area 59

Appendices 58

Explanatory Notes 58
Appendix 1: Example Schedules for Various Sizes 60
Appendix 2: Example Schedules for Various Curricula 62
Appendix 3: Key Formulae 64

Introduction

A good brief is the foundation for the success of any building project. The objective of the ongoing brief-making process is to clarify the intentions of the client and inform the design team of the requirements for the project[1].

This document is designed to assist headteachers, governors and other stakeholders in the creation of a brief for any major project in a mainstream secondary school, with particular emphasis on the following issues:

- Part A: the **process** of creating a brief, and how the brief for any building project should fit within a strategic masterplan based on the school's longer term vision for the future;
- Part B: the key **design criteria** that should be included in the brief to ensure that facilities are appropriate and adaptable to suit the changing circumstances of the future;
- Part C: minimum **building area** requirements for each of the six categories of space within the usable or net area, and for the remaining area of the buildings;
- Part D: minimum **site area** requirements for the various categories of outdoor spaces needed within the playing field area or net site area.

Side notes on each page give references to further information and guidance, including Exemplar Designs[2] and Room Data Sheets[3].

Context

It is important that the brief for any building project is seen in the context of the overall strategic masterplan, to avoid work being done in the wrong place or in the wrong order. It is equally important that the masterplan is in line with the aims of the Local Education Authority's (LEA's) Children and Young People's Plan, operational asset management plan (AMP) and other strategies, for instance for accessibility[4], community and sport.

1 **What is a Brief?** The NBS (National Building Specification) Educator states that 'briefing is the process of identifying a client's need and finding an appropriate solution. A brief is a product of that process and is produced at key points in the project and formalizes decisions and instructions in a structured document. The briefing process is iterative and moves from the general to the particular.' See **www.nbseducator.co.uk/briefs/homebriefs.shtm**.

2. Exemplar designs have been developed by some leading architectural practices working to a DfES brief, to improve the design quality of school buildings. The designs, including five secondary schools, are intended to develop a shared vision of 'Schools for the Future' and create benchmarks for well designed schools.

3. Room Data Sheets were developed for the exemplar design brief to identify the key design criteria for each room. The examples on the web site are indicative only, but they highlight the headings that should be considered at the detailed stage of the brief. See **www.teachernet.gov.uk/exemplars**.

4. The Disability Discrimination Act 1995, as amended by the Special Educational Needs and Disability Act 2001, introduced Part IV 'Education' which requires LEAs to have an Accessibility Strategy for schools to increase access to information, the curriculum and the physical environment for disabled pupils, over a three year period to March 2006.
See **www.teachernet.gov.uk/wholeschool/sen/schools/accessibility/**.

Acknowledgements

The guidance in this publication has been written and researched by the following team of DfES School Building and Design Unit building professionals, under the leadership of Mukund Patel.

Editor:
Beech Williamson

With assistance from:

Tamasin Dale	school grounds and formulae
Alison Wadsworth	furniture layouts informing room areas
Gill Hawkins	SEN issues
Richard Daniels	environmental issues
Nick Mayer	analysis

The Department would like to thank the following people who helped to in the preparation of the final copy:

d-squared architects	original graphic format and photography
Learning Through Landscapes	input to text and photography as marked
School Works	input to text
Sport England	input to specifications and text
Jenny Coldrick, NPS architects	input to masterplan

Commission for Architecture and the Built Environment (CABE)
The Charter School, Southwark and Blenheim High School, Epsom

We would also like to thank the following members of the steering group that advised on the draft revision of Building Bulletin 82: Area Guidelines for Schools, on which this guidance is based:

Michael Moore	Derby LEA
Mark Dolling and Ted Pawley	Milton Keynes LEA
Graham Dalton	Cardiff LEA
Peter Robson	Dorset LEA
Pat Gibson	Canterbury C of E Diocese
Paul Briggs	Hexham & Newcastle R C Diocese
Michael Lloyd	NAHT
Gary Redhead	SEO
Andrew Price	Jarvis Construction
Shirley Turner	RIBA Schools Forum and EBDOG
Georgina Franks	RIBA Schools Forum
John Waldron	RIBA Schools Forum

Part A: The Briefing Process

The initial strategic brief for any project will need to be written by the client team. It can then be developed with the wider design team as building professionals become involved[1].

Client team

Depending on the size and type of project, the client team will include:

- those responsible for the provision of pupil places and the school estate, usually the Local Education Authority (LEA) or diocese;
- the fund holder(s), who needs to be sure that the brief is achievable within the budget and allows for future changes (for instance in staff and organisation) and for community use;
- senior school staff and governors, who will need to ensure the design is suitable for the individual needs of the school;
- other stakeholders, for example community groups who may wish to use the facilities or those that could provide further funding for multi-agency provision on the school site, such as health or social services.

The users of the project, including pupils, should also be represented when formulating the brief[2].

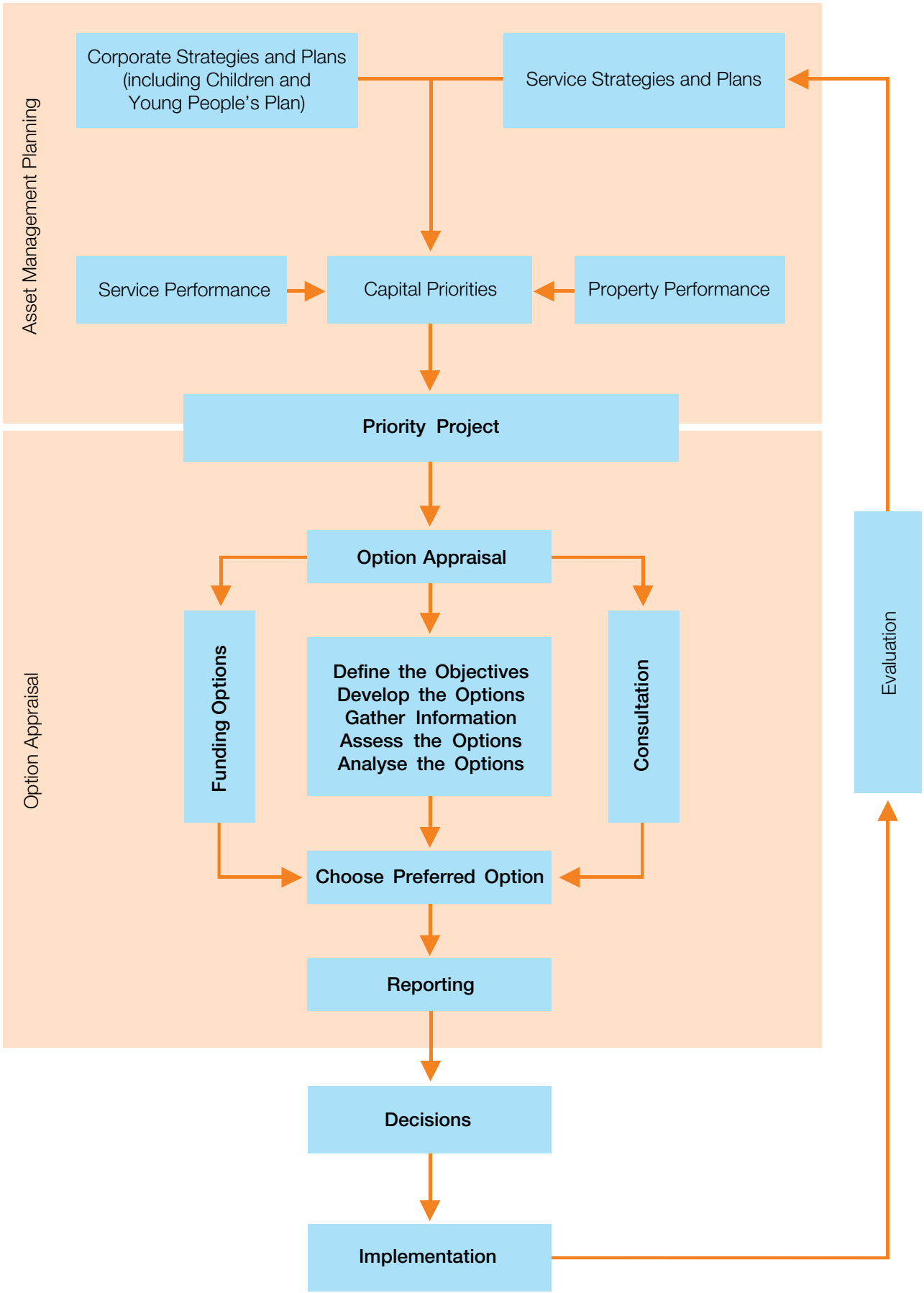
Outcome-based Approach

The best approach to brief writing is to define as clearly as possible the desired outcomes for the project, rather than attempting to specify design solutions to achieve the outcome. This will ensure the best value from the inventive design capability of the design team and constructor. In a PFI scheme, the brief in the form of an 'output specification' will also ensure that the risk of achieving the outcome is transferred to the provider[3].

1. A useful introduction to the roles of those involved in building projects is A Guide for School Governors: Developing School Buildings, published by the Royal Institute of British Architects (RIBA). Available, quoting ref: WS/GFG, from: RIBA Policy and International Relations, 66 Portland Place, London W1N 4AD, price £6.50.

2. School Works produces material to help set up participatory design projects in schools. Useful publications include Learning Buildings and the Toolkit. See **www.school-works.org.** Learning through Landscapes is a charitable trust which also puts the participation of pupils and staff at the heart of their advice and publications on the development of school grounds, to support the curriculum and other activities. See **www.ltl.org.uk**.
3. The Public Private Partnership Programme (4ps) publish guidance for PFI briefs, which can also be useful for non-PFI schemes. See **www.4ps.co.uk.**

Figure A.1: Option Appraisal in Context

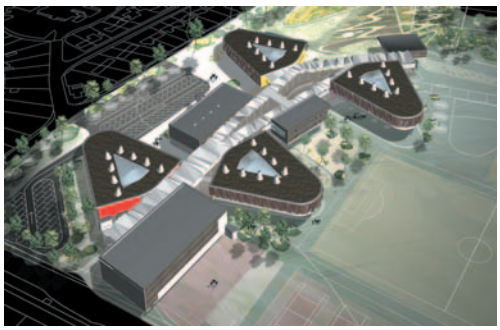


Preparing a Masterplan

A strategic masterplan, or Premises Development Plan (PDP), should be the first task for any school anticipating the need for improvements or alterations to their buildings or site. It will reflect the long term building implications of the school's education and community objectives, as set out in the School Development Plan.

To support the delivery of these objectives, all building projects – of whatever size or timescale – should then form part of this plan, like pieces in a jigsaw puzzle. This avoids early projects adversely affecting later ones, ensures best value and provides a framework for short-term funding opportunities.

Hint: Most LEAs will have a system of masterplans for schools, with various terms including Premises Development Plans, Building Development Plans and School Asset Management Plans.



Finding the Right Solution

The masterplan or PDP can be developed in the same way as any building project, following the steps of an Option Appraisal (as in figure A.1 opposite)[1]:

- to **define the objectives**, a basic comparison can be made between the future needs of the school and the ability of the current premises to support them;
- to **develop the options**, a feasibility study can be done by building professionals to look at various possible ways to meet the objectives;
- **information gathering** can then be done for each of the options, including whole-life[2] capital and revenue costs and design quality;
- to **assess and analyse the options**, scoring and weighting can be applied by setting out the options against the objectives in a table, combining financial and non-financial factors to produce a best value solution.

When the preferred option is chosen, it should provide a feasibility design that incorporates the school's vision of the future.

By developing the masterplan to feasibility design stage[3], strategic options that may have been envisaged, such a new sports hall or performing arts block, can be shown to be feasible and appropriately located. The scheme may also be usable as a 'reference design' if the entire school is covered by a contract for renewal.

1. Steps in an Option Appraisal are discussed in detail in Finding the Right Solution: a Guide to Option Appraisal, available on **www.teachernet.gov.uk/amps**.

2. **What are 'whole-life' costs?** A theoretical 'whole life cost model' can be calculated for any design, but the principle is simply to take the initial construction costs and add the running costs and replacement costs of items which form the building over a reasonable 'life time' such as 25 to 60 years.

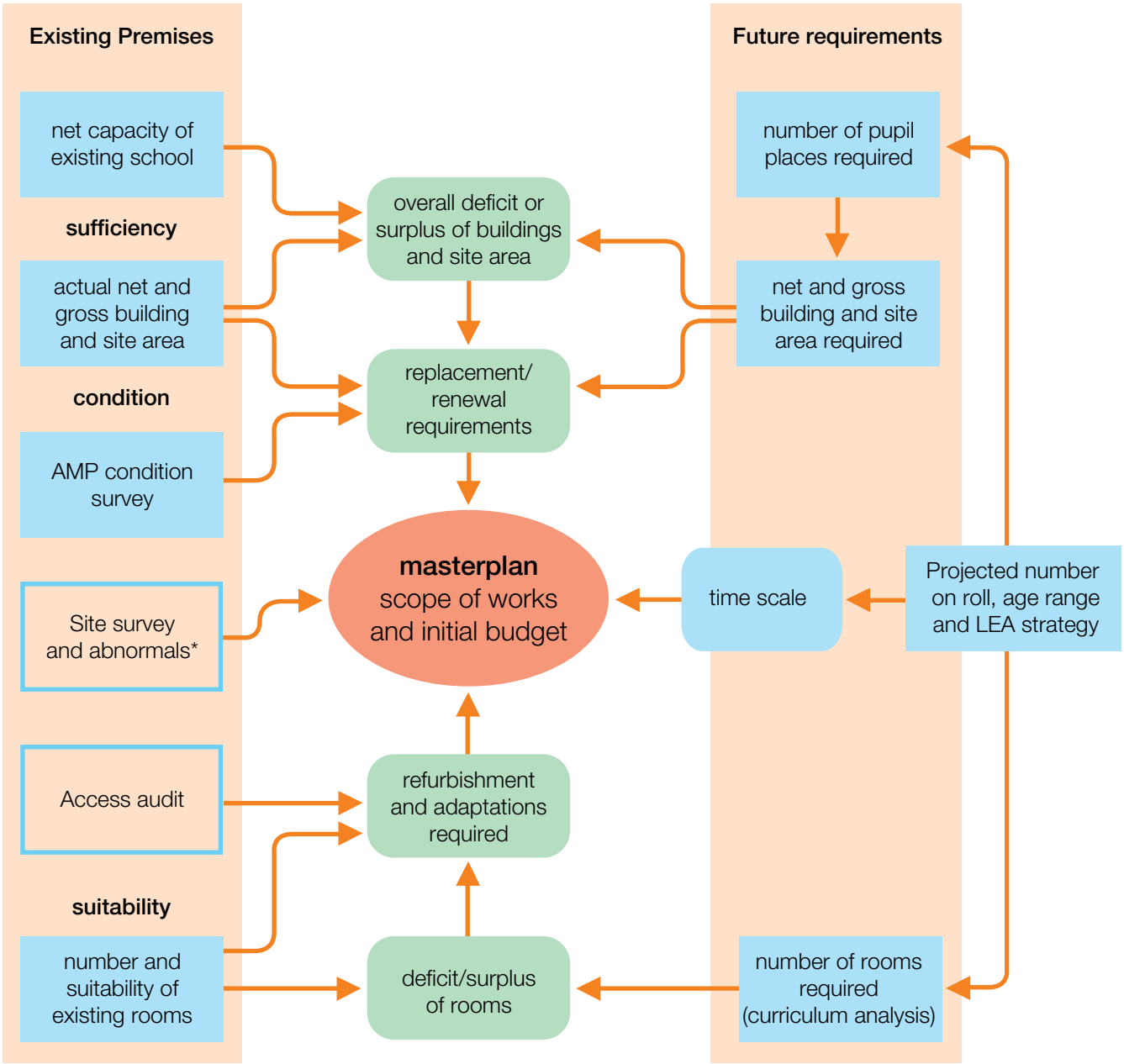
   For instance, a temporary structure may be cheaper to build than a traditional building which has a longer life time, but may be far more expensive to maintain and need to be replaced at least once in that time.

   In a PFI project, the PFI provider is likely to prefer a cost that may be more expensive 'up front' but cheaper in the longer term.

3. RIBA stage B: feasibility design is a recognised early stage of the design process, as defined by the Royal Institute of British Architects. It will usually involve a fee, possibly prior to any agreed project funding. See **www.architecture.com/go/Architecture/Using/Contracts.**

Figure A.2:

Master plan, or PDP, flow diagram, showing how data on existing premises can be compared with future requirements to identify the scope of works and possible budget.



* abnormals include site conditions which would require extra funding, such as drainage, gradients, split sites, constrained site or ground contamination.

Defining the Objectives

The masterplan or PDP should be based on an objective comparison between the future premises needs of the school and the current buildings and site (as described in figure A.2 opposite). This can usually be done by the LEA or school using existing data.

The **future need** will be based on:

- the projected capacity (number of pupil places)[1], in the context of the LEA strategies and policies;
- the recommended building and site area, both net and gross, for the required age range and capacity, based on the formulae in Parts C and D;
- a curriculum analysis[2] based on the individual needs of the school's planned curriculum.

Data on the **existing buildings and site** will include:

- the Asset Management Plan (AMP) condition survey and suitability survey[3], based on a curriculum analysis as above where relevant;
- the Net Capacity[4] of current buildings, including identification of any 'non-school and support' facilities;
- other AMP sufficiency data, comprising the current net and gross building area and overall site area;
- an access audit and accessibility plan[5].

This comparison, or gap analysis, can identify the **scope of the work** required and an **initial budget** based on:

- the demolition costs of buildings that need to be removed because they are surplus or beyond economic adaptation or repair;
- new build costs[6] of further or replacement gross building area, based on the shortfall of remaining area compared to that recommended for the planned capacity;
- refurbishment costs of existing facilities related to suitability needs;
- possible acquisition or disposal of land.

Depending on the possible projected growth or change in the capacity requirements of the school, the data above can also highlight the overall **timescale** required[7].

1. The capacity should take account of the anticipated likely number of pupils at school action, school action plus or with statements for SEN, which may require specialist facilities. Any specially resourced places for pupils with specific SEN or disabilities (such as a centre for sensory impairments) will require supplementary areas (see page 49).

2. The number and type of timetabled teaching rooms required can be calculated with the assistance of a Curriculum Analysis. See **www.teachernet.gov.uk/amps** for guidance.

   A useful rule of thumb is that the number of timetabled spaces will be N/21 + or – 2 in 11-16 schools, where N = the number of pupil places.

3. For guidance on Asset Management see **www.teachernet.gov.uk/amps**.

4. For information on net capacity assessment see **www.dfes.gov.uk/netcapacity**.

5. The Disability Discrimination Act 1995, as amended by the Special Educational Needs and Disability Act 2001, introduces Part IV 'Education' which requires schools to have Accessibility Plans to improve access for disabled pupils to the curriculum, the physical environment and information, over a three year period to March 2006. See **www.teachernet.gov.uk/wholeschool/sen/schools/accessibility/**.

6. Current costs per square metre (m^2) for the region can be found in the latest DfES School Building Projects: Costs and Performance Data. Available from DfES Publications.

   Hint: overall costs including fees, site works, furniture and contingencies are likely to be at least £1500 per m^2.

7. For instance, the project might be planned and timed to suit the gradually increasing roll of the school and to avoid disruption as much as possible.

Figure A.3: Key headings for the brief

Introduction, encapsulating an overview and the major objectives – expressed as 'desired outcomes' rather than 'preferred solutions' – and a description of the project.

Background Information, including:

- existing school facilities and environment, including AMP data and Access Audit;
- capacity requirements and age range of the school, in line with LEA strategies and policies and anticipated community use;
- the strategic masterplan and how the project fits into it (see page 7);
- personnel, listing the key point of contact, and roles and responsibilities;
- budget, based on the likely gross area to be built and whole-life building costs;
- programme of work, including key dates to be taken into account such as examinations and holiday periods.

Vision for the School, expressing the aspirations and philosophy of the school, in the context of the School Development Plan (see page 15).

Implications for the design, as discussed in Part B, including:

- organisation and management structure of the school, and preferences for the layout and location of resources and key relationships between spaces;
- intended community use and extended school facilities;
- furniture and equipment dimensions and specification.

Design requirements, as discussed in Part B, including:

- adaptability and flexibility, ensuring the design will suit as many variations as possible in the future, including possible requirements for expansion and developments in ICT;
- access and inclusion requirements, to allow for the curriculum and informal areas to be fully accessible to pupils with SEN or disabilities;
- safety and security considerations;
- sustainability and environmental design;
- environmental performance criteria, for instance for acoustics, ventilation and daylight.

Building requirements, as discussed in Part C, including:

- gross and net area standards to be achieved;
- organisation or location policies that can affect the design;
- the schedule of accommodation (see page 29).

Site requirements, as discussed in Part D, including:

- gross and net area standards to be achieved;
- any site constraints;
- land acquisition/disposal where appropriate.

Design performance requirements, including:

- legislation and non-statutory requirements, such as relevant DfES Building Bulletins and Sport England Guidance Notes;
- room data sheets, giving detailed information about the requirements of every room;
- standards of construction (for example lifespan requirements).

Facilities Management Requirements may also be included in the brief if the project includes the running of the facilities by the contractor (such as in a PFI project).

Developing the Options

The objective comparison above will set the context, but not provide the solution. The next step is to develop the overall brief in more detail and appraise some feasibility options for the whole school based on this brief. This will require the expertise of the LEA or educational consultants and architects.

At this stage, the brief should include a schedule of accommodation, with the right number and type of teaching spaces to suit the school's curriculum, an outline of the school's organisation, ethos and aspirations and their design implications, and other key areas summarised in figure A.3 opposite.

This will ensure that the designers involved understand the context as well as the specific requirements of the work, and are given the opportunity to propose options which may offer better solutions than those initially envisaged.

The final master plan will be based on a feasibility study, setting out a number of options which can be compared. These might include:

- a 'do nothing' option, to highlight how the current accommodation would cope with future scenarios;
- options which reorganise the existing building fabric, with different levels of replacement (and disruption);
- a total or substantially new build option[1].

All the options should be drawn up sufficiently to compare their educational advantages, likely disruption to the school, and longer term maintenance implications[2].

It is also crucial that the cost of each option is compared, both in terms of the initial capital cost and also the 'whole-life' cost over at least 25 years[3]. Costs should also include temporary rehousing of pupils if necessary, furniture and equipment (both fixed and loose)[4], and landscaping.

The masterplan is most likely to be realised through a single capital project[5] or a series of phased projects, but any smaller projects should not be at odds with the final scheme. Figures A.4 and A.5 on the next two pages show a case study example of a phased approach.

© Learning Through Landscapes

Hint: if the brief states that the final scheme should accommodate a number of rooms in a suite, the designer can investigate more options than if it states that the project is to provide a new space in a new building in a specific position, such as the courtyard.

1. This may include the use of exemplar designs. See **www.teachernet.gov.uk/exemplars**.
2. Other options in some schools could include accommodating the whole school on one site (if current site is split or constrained) or incorporating 'extended schools' facilities or other age ranges, with other funding.
3. see 'What are whole-life costs' on page 7.
4. Some furniture and equipment will be covered by capital funds and some by recurrent funding. This is discussed in detail in Section 3 of 'Furniture and Equipment: A Purchasing Guide', Managing School Facilities Guide 7, TSO 2000 ISBN 0 11 271092 1.
5. Such as BSF projects. The masterplan may need to allow for more than one option, for instance to allow a PFI provider to propose a completely new school where possible.

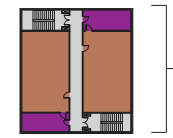
Case Study

Figure A.4: Existing: Plan of existing school buildings

In this real example, the existing school buildings provided a capacity of 750 11 to 16 places in a range of buildings. Figure A.5 shows the final master plan for the new school on the same site.

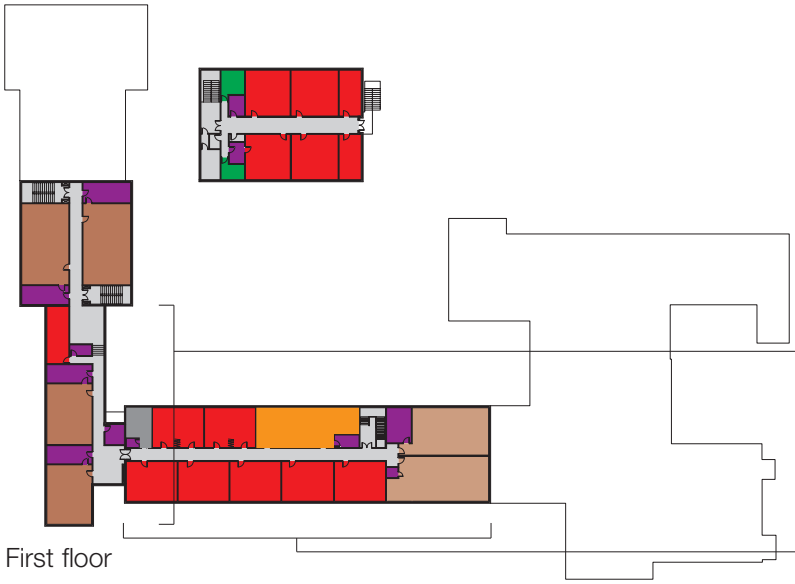
Key to both figures:

- general teaching
- science
- design and technology
- art
- music/media
- learning resources
- staff and admininistration
- storage
- halls and dining
- toilets and changing
- non-net area
- lift



Second floor

Block D 3-storey block with science labs on 2 upper floors
condition: good
suitability: 2 stairs very close, but efficient design



First floor

Block C link block with classrooms and science labs
condition: fair except for roof
suitability: changes of level and inefficient design

Block B 1950's general classrooms, library and art rooms on two sides of a central corridor
condition: good
suitability: art rooms and library too small

Ground floor

Block E changing rooms and gym
condition: poor
suitability: gym too small as main indoor PE space

Block F 2-storey 1960s 'ROSLA' block with D&T on ground floor
condition: poor
suitability: external fire escape stair; rooms too small

Block G single storey annex to back of hall
condition: fair except for roof
suitability: inefficient design with limited circulation

Block A 1950's main hall, stage, dining hall and kitchen
condition: good except for roof
suitability: good except for foyer/reception

Case Study

Figure A.5: Masterplan: Plan of new and refurbished school buildings

The refurbished buildings were to house 900 11 to 16 places plus a sixth form. The budget was based on the costs of repairing the areas in poor condition, addressing suitability needs and adding the extra places needed. The feasibility study for the whole school considered a number of options, from 'patch and mend' of all existing buildings to complete replacement. The final design allows each department to be in a suite, whilst still having the option to expand or contract into adjacent accommodation. For site plan see page 54.

Block D refurbished in phase 3 to accommodate ICT and general teaching, with support spaces in place of second staircase.

Block E and F replaced with two storey new build in phase 4, containing design and technology rooms at ground floor and science laboratories above, around two small atria.

Block C phase 2 new build sports hall, activity hall and changing around pupil/community entrance; classrooms and, on second floor, library. New staircase and lift resolving level changes.

Block B refurbished in phase 3, once blocks C, E, F and G were demolished (mainly due to their poor suitability) and the new block C built.

Block G demolished and replaced in phase 5 by extension to provide art and music spaces linking to back of stage in block A. This also completed the enclosure of the central courtyard. Further extensions to create an 8FE school allowed for at either end of this block.

Block A refurbished with new roof as phase 1, to provide the foyer, hall, dining and kitchen and create a new identity to the school in Year 1, while block B was temporarily used for all other teaching rooms.

Case Study

Figure A.6 and A.7:

Case study school buildings before refurbishment.

Blocks D (left), C and B.

Original entrance foyer between blocks A and B.

Figure A.8 and A.9:

Case study school after refurbishment and new buildings.

New pupil entrance and sports hall in place of block C, including a double-sided lift to ensure accessibility to split levels.

New roof to hall in block A and new foyer/visitors entrance.

Part B:
Design Criteria

This part highlights three types of design criteria that should be specified in the brief to ensure design quality[1]. Firstly, the 'vision' of the final school, which will affect the overarching design philosophy of any scheme. Secondly, the more practical implications for the design of the client team's preferences for:

- the organisation and management of the school, and the location of various resources;
- the size and type of furniture and equipment;
- any community use and/or extended school facilities.

And thirdly, some key design requirements crucial to the design of any school project:

- flexibility and adaptability to allow for change;
- suitability for the inclusion of pupils with special educational needs (SEN) and disabilities;
- safety and security; and
- environmental performance.

The choice: At the end of each relevant sub-heading, text in this colour highlights the choices that will affect the design.

Vision for the School

Any masterplan should ensure that the planned environment suits the identity, ethos and culture of the school. Among other overarching aspirations, the client's brief should communicate to the design team that the buildings should inspire and enhance:

- **educational performance:** opportunities to raise standards for all by offering an appropriate, adaptable and stimulating learning environment;
- **staff satisfaction:** vital for the recruitment and retention of the school's most important resource[2], it is influenced by the various aspects of the working environment as well as appropriate space for staff to rest and socialise;
- **pupil satisfaction:** affecting behaviour and self-esteem, and ultimately willingness and ability to learn;
- **community involvement:** an important way to extend the integration of the school and maximise effective access to facilities.

1. Design Quality

The Commission for Architecture and the Built Environment (CABE), in its publication 'Better Public Buildings', has identified good design as a mix of the following attributes:

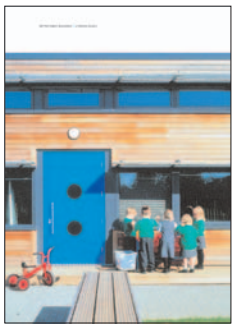
Functionality in use, or fitness for purpose, which can be checked against the criteria in the brief;

Build quality, including the need for whole life cost principles to be used;

Efficiency and sustainability, ensuring the design allows buildings to be delivered on time and on cost;

Designing in context, including the site and existing buildings, but also the need for the total design to be seen as a coherent whole;

Aesthetic quality and the need for a non-institutional, individual character.



The Construction Industry Council (CIC) has also developed Design Quality Indicators to help to ensure quality in design. See **www.cic.org.uk/** and **www.dqi.org.uk/**. A school specific design quality indicator being developed by the DfES is due for completion in 2005.

2. This is linked to School Workforce Remodelling, which is discussed at **www.teachernet.gov.uk/wholeschool/remodelling.** See also 'Removing Barriers to Achievement: The Government Strategy for SEN 2004'. **www.teachernet.gov.uk/sen**.

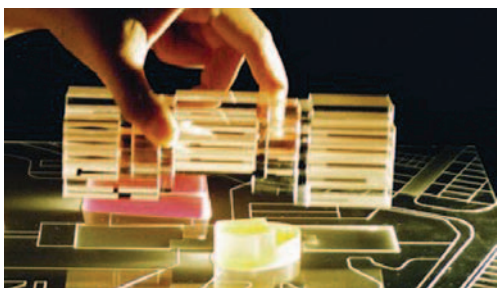
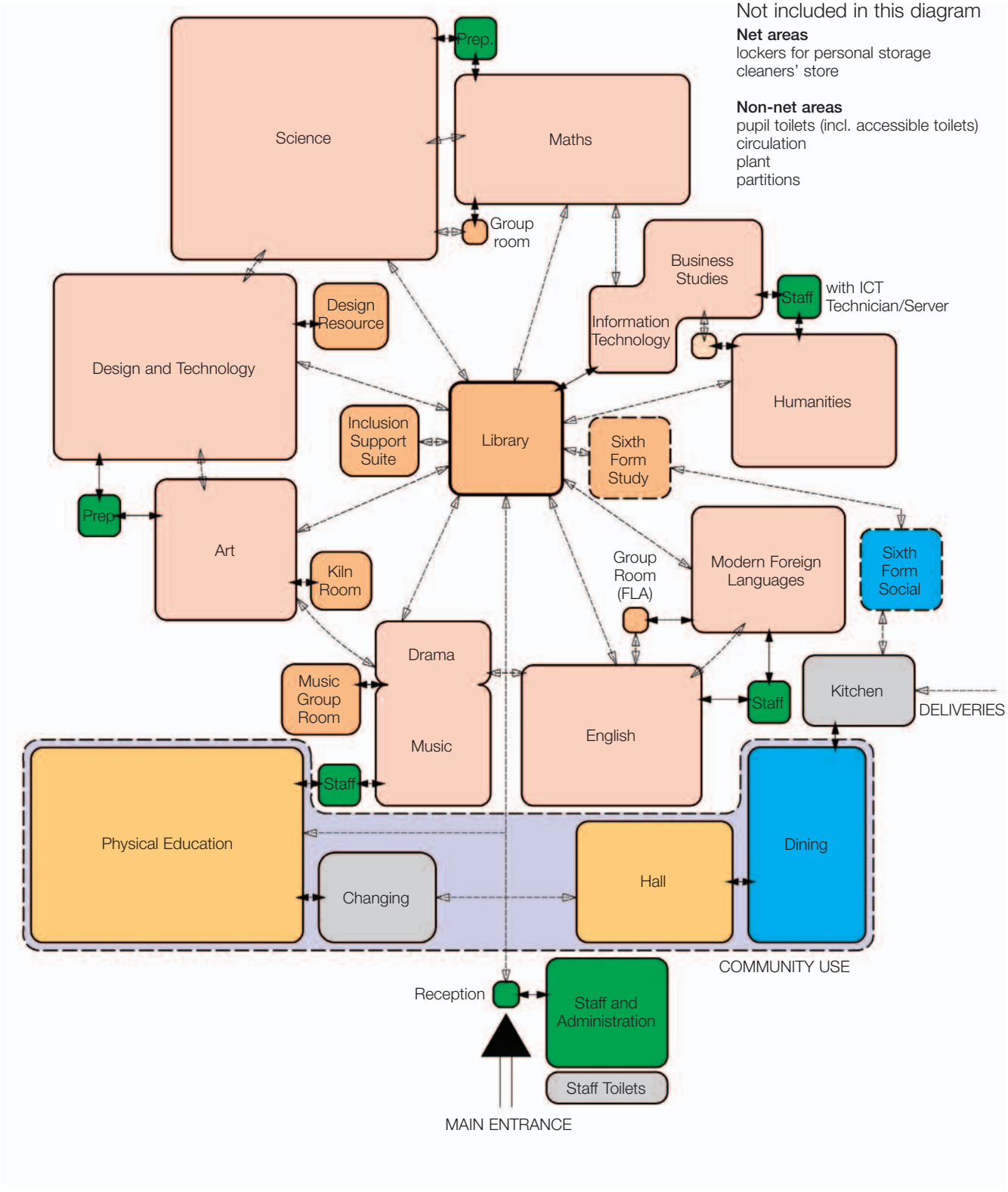


Figure B.1: Organisation Diagram

Diagram showing traditional departmental structure of a secondary school, and the useful links between subject areas. Various faculty options are also common which merge two or three adjacent subjects.



Implications for the Design

At a more practical level, a number of key decisions about the organisation, management and pastoral support systems of the school can have major implications for the layout of the site, particularly where there are site constraints, or where existing buildings are suitable but not ideally placed or orientated.

It is therefore important that the brief clearly sets out the school's preferences for the following issues, taking into account the likely future direction as far as possible.

Organisation

The school may prefer a departmental structure (as shown in figure B.1 opposite), larger faculties or other groupings[1]. Some schools prefer an upper and lower school structure, particularly where there are split sites. Similarly, sixth form accommodation may be partially or significantly separate.

Alternative options for registration and pastoral care are becoming more common, including mixed age registration groups, 'house' systems (particularly in larger schools) or 'schools within schools'[2].

These alternatives can involve all but the most specialist teaching spaces (such as design and technology rooms and halls) being provided in various points around the school site, dispersed resources and social areas, and less movement around the school. However, this can also involve more duplication of facilities and higher numbers of support staff.

Location Policies: Central or Local Resources?

Various types of resources may be deliberately centralised, with the advantage of easy access to support staff and specialist equipment. Alternatively, they may be spread around the school, with the advantage of easy access to departments or faculties and shorter travel distances. This will clearly have an effect on the final design.

The choice: The brief should specify the location policy under each category of space, as discussed in similar boxes in Part C, covering ICT, examinations, learning resources, staff accommodation, personal storage and dining facilities.

1. Variations 5 to 7 of the secondary school exemplar design brief are examples of these organisational options. Go to **www.teachernet.gov.uk/exemplars** and find 'secondary exemplar design brief annexe 1' for schedules of accommodation.

2. Schools within schools are considered in the exemplar designs compendium Exemplar Designs: concepts and ideas, page 13. See **www.teachernet.gov.uk/exemplars** for a pdf version or order by emailing **dfes@prologistics.co.uk.**

Hint: Although it may seem sensible to house departments in different blocks, it may be less easy to expand or contract a department if it is in a separate block or wing that exactly suits its initial requirements.

Time Management

The way that the school day is timetabled can significantly affect the design. Staggered timetables can reduce the demand for area – from half the school being able to access dining facilities while the other half is in lessons[1], to whole year groups, such as the sixth form, being taught at different times of the day and reducing the demand for timetabled teaching spaces.

Using Technology

Classrooms may be furnished for registration groups of 30 or more, but may normally be used for much smaller teaching groups. More space can be made available within each room by:

- using swipe cards for registration and avoiding registration classes; or
- using laboratories with appropriate furniture and services 'cut-off' for registration/pastoral groups.

ICT and interactive whiteboards may allow more subjects to be taught in the same classroom and reduce pupil movement and crowded circulation areas, particularly in multi-storey buildings.

Furniture and Equipment

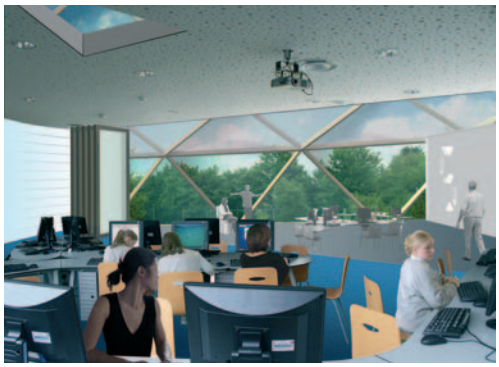
Careful consideration of the activities required in each room should identify the items of furniture and equipment needed, which can then inform a number of layouts. To avoid compromises, the preferred layout options and size of furniture[2] should be drawn within the plan of the room to ensure the dimensions and size are sufficient.

If the brief covers furniture and equipment, strength and stability should be assured by using relevant standards. It is also important to consider ergonomics. Care must be taken to ensure that the chairs and tables provided are compatible heights and suitable for pupils using them[3].

The choice: The options described on this page can mean that some space can be used more effectively. For instance, some teaching rooms can be furnished for group sizes smaller than 30, allowing more space for larger tables or more layout options.

1. If this option is to be available, the dining and social facilities should be positioned such that their use cannot disturb pupils in quiet lessons or study.

Hint: If using a 'split lunch' system, it may be easier to have a minority of pupils eating lunch at any one time: this can make the prevailing activity in the school quiet work, rather than noisy social activities, at all times, as well as reducing queues.



2. Tables of 600mm x 1200mm, typical in schools today, are appropriate in 'small' classrooms with an area in zone B on page 30. To allow more table top space for the older age groups and for portable ICT in the classroom, larger tables of 700mm x 1400mm may be more useful (particularly where the room is predominantly for the sixth form or KS4), and these will fit in 'standard' classrooms in zone C on page 30.

With either size of tables, room areas at the top of the zone will offer more options for variations in layout and circulation space around tables than the bottom of the zone. To allow for the varying needs of disabled pupils, the examples above also allow for a 700mm x 1400mm height adjustable table, located for easy access and circulation.

3. Both ergonomics and strength and stability standards for furniture are referred to in 'Furniture and Equipment: A Purchasing Guide', Managing School Facilities Guide 7, TSO 2000
ISBN 0 11 271092 1

Extended School Facilities

Any mainstream secondary school can provide extended school[1] activities and services, outside the school day, to help meet the needs of its pupils, their families and the wider community. Some schools may provide more extensive provision for non-school use during the school day.

Extended school facilities will generally fall into one of three levels of provision:

- *access to school facilities by the wider local community* beyond the school day should be available in any school, addressed through the design and management of the building and the provision listed above;
- *flexible multi-use areas for use by others* within the school during the school day, such as a parent/community room or SEN facilities that may also be used for community health care, may be accommodated within the 'float' area or some 'supplementary area' funded by the LEA;
- *major areas for dedicated non-educational services* would require supplementary areas (see page 49) funded through the joining up of other funding streams, such as Sure Start or Primary Care Trusts.

The location of any facilities that will be used by the community should be carefully considered, taking into account access, security, child protection and parking.

Linked Provision

Some facilities may be accessed nearby, such as a swimming pool or specialist vocational resources. The brief should identify the implications of any such linked provision.

1. For further information on extended schools, see **www.teachernet.gov.uk/wholeschool/extendedschools.**

Hint: Use by the community can affect VAT charged for building projects in Voluntary Aided schools and others where funding is not via the LEA.

Shared Community Use

The level, frequency and likely timing of community use should be assessed early in the briefing process, in conjunction with the Local Authority's strategy for sports and leisure amenities[1].

Shared spaces are likely to include the main hall or performance space and its ancillary facilities, and sports facilities, both indoor and outdoor. Links with adult learning provision and other local schools may also lead to shared use of some specialist learning spaces such as ICT suites or art and drama facilities. The design should allow these parts of the school to be open and heated while others are closed and secure.

Facilities which will encourage community use outside the school day, and are allowed for within the recommended gross area (page 25), include:

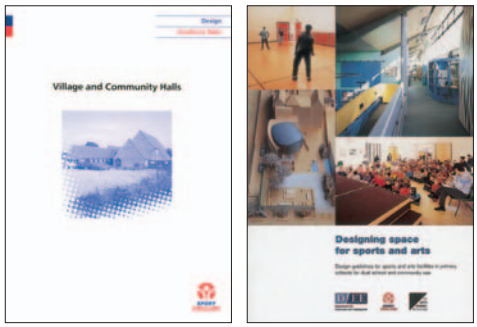
- alternative 'reception' facilities and access for out-of-hours use;
- sports hall, activity studio and changing facilities suitable for public use;
- accessible toilets and lockers for use by adult visitors;
- a community office and storage spaces separate from those used by the school;
- environmental learning areas available to be managed in partnership with specialist groups and the local community.

Curriculum Opportunities

The whole site development, or the process of change involved in upgrading an existing school, is a major opportunity for pupils to study and experience citizenship and education for sustainable development first hand. This can include conflict resolution and the balancing of financial, social, practical and environmental criteria.

The brief should highlight the need for designers, contractors and the school to take advantage of this opportunity, in line with the requirements of the DfES Action Plan for Sustainable Development in Education and Skills[2].

1. Refer to Sport England Technical Guidance Notes 'Village and Community Halls', 'Access for Disabled People' and 'Designing Space for Sports and Arts'. See **www.sportengland.org/resources/resource_downloads.shtml.**



Hint: Shared use can affect the requirements for emergency lighting and fire escape provision to suit public use. Community use during the school day can increase the demand for car parking.

© Learning Through Landscapes

2. School Works and Learning through Landscapes have direct experience in how to plan and manage this type of pupil involvement. See **www.school-works.org** and **www.ltl.org.uk**.

Key Design Requirements

The following issues should be identified as essential in the brief for any project.

Flexibility and Adaptability

The flexibility to allow for change must be a key design requirement. Whatever layout is preferred, it must be adaptable to allow for future changes, for instance for different timetable models to be adopted. What is suitable now will, as often as not, need to be changed in a few years.

Flexibility is needed to allow for day to day change of use, such as accommodating different teaching arrangements in a classroom through movable furniture[1] and portable ICT (see page 33).

Adaptability is needed to allow for long-term changes such as developments in the 14 to 19 curriculum or the implications of evolving ICT. The consequences for the school of the future are difficult to predict, but room sizes may need to change (to match varying group sizes) and servicing requirements may alter (see page 32).

Avoiding fixed furniture as much as possible and limiting the range allows flexibility. Furniture can also provide flexibility by performing a number of functions, although this must be offset with the need for simple products which are not difficult to repair or replace (see page 18).

It is important to be clear what needs to be adaptable (for instance internal walls being able to be removed and rebuilt without affecting the structure or major services) and what should be flexible for more frequent change. For instance, sliding/folding doors can often be underused and ineffective, but may be useful to allow rooms to change size to match unpredictable sixth form group sizes or to allow for an examination space[2].

1. The pictures above show how the furniture layout of a standard classroom can be rearranged to suit different learning styles: from Building Bulletin 92: Modern Foreign Languages: A Design Guide TSO 2000. ISBN 0 11 271093 x.

2. See exemplar design secondary school brief at **www.teachernet.gov.uk/exemplars**.

Access and Inclusion

Access and inclusion must be allowed for in the design, reflecting the Government's commitment to promoting inclusion of pupils with special educational needs (SEN) and disabilities into mainstream schools. This means that such pupils should be able to have access to the whole curriculum and participate in school life[1].

Particular attention should be given to:

- appropriate space for pupil support, whether educational (for instance through small group rooms), therapeutic, social or medical;
- an easily understood layout and suitable use of colour and good signage;
- good quality acoustics and lighting[2] (and perhaps a higher specification in specialist areas);
- access designed for all to information, the curriculum and the physical environment[3] (for instance including both a ramp and steps where there is a small change of level[4]).

Part C recommends minimum sizes for teaching spaces that allow for pupils with SEN and disabilities and assistants. The range of facilities allowed for within the recommended gross area (page 25), to ensure an inclusive school, also include:

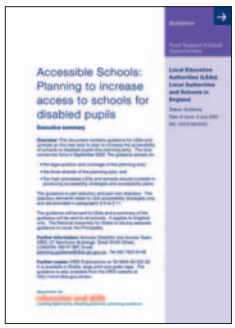
- SEN resource base (see page 39);
- multi-purpose small group rooms for specialist teaching and pupil support;
- office space, medical and therapy rooms for peripatetic staff and health professionals;
- meeting rooms for parents and carers;
- storage space for educational and mobility equipment;
- accessible toilets and hygiene facilities for assisted use;
- suitably wide corridors (see page 47).

In some schools, very high numbers or increased needs of pupils with SEN and disabilities will require additional specialist SEN resourced provision (in supplementary area, page 49). Alternatively, there may be a co-located special school for pupils with complex needs, which will also have implications for the mainstream school.

1. Typically, pupils with speech, language and communication needs, specific learning difficulties, moderate learning difficulties, sensory impairments physical disabilities and medical needs will, as far as possible, be included in most mainstream schools. Refer to BB77 Designing for SEN: Special Schools, to be updated 2004.

2. See BB90: Lighting Design for Schools TSO 1999. ISBN 0 11 271041 7; and BB87: Guidelines for Environmental Design in Schools, May 2003 web version, at: **www.teachernet.gov.uk/energy** and BB93: Acoustics in Schools at: **www.teachernet.gov.uk/acoustics.**

3. As defined in The DfES Guidance Note: Accessible Schools: planning to increase access to schools for disabled pupils LEA/0168/2002 **www.teachernet.gov.uk/sen.** For details of access requirements refer to Building Regulations Approved Document M, 2004 and BS 8300.



4. Note that changes of level of one step only are not permitted in Approved Document M (above), either internally or externally.

Safety and Security

Safety and security[1] are over-arching issues, which should be considered in conjunction with requirements for greater community access. Security is as much about creating a feeling of a secure, organised, safe environment, as it is about the specifics of surveillance and supervision of access. Particular attention needs to be given to:

- access control, for instance to ensure visitors can be shown to an interview room from reception, but cannot enter the school without permission;
- securing the building 'envelope': walls and roofs, but particularly windows and doors;
- having clearly defined site boundaries, using appropriate fencing and/or planting;
- electronic measures, such as intruder alarms;
- a health and safety audit of the design to ensure it is appropriate for adults and pupils with special needs or disabilities.

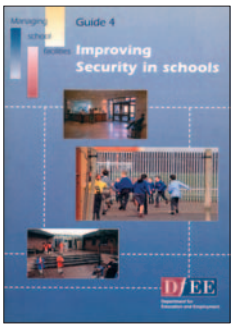
Environmental Performance

The brief should specify sustainable and environmental design such that a BREEAM rating[2] of good, very good or excellent is achieved. The choice will have cost implications, both in the short and long term, so the rating set in the brief should be considered carefully.

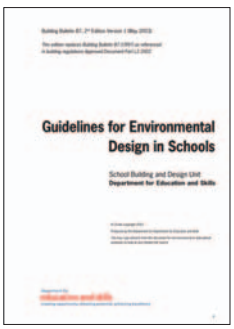
To ensure a reasonable level of sustainability, BREEAM considers a wide range of factors, including site security, community use and site selection, alongside better known environmental issues such as energy efficiency, minimising waste and using appropriate materials.

Environmental performance criteria are also crucial, particularly for acoustics, heating, ventilation and daylight. Many of these are now statutory and are vital to ensure comfortable, suitable teaching space. Acoustic and energy calculations must be provided for all designs[3].

1. See Managing School Facilities Guide 4, *Improving Security in Schools*. TSO 1996. ISBN 0 11 270916 8. Single copies available to schools from DfES Publications free of charge. Otherwise from TSO.



2. The Building Research Establishment Environmental Assessment Method (BREEAM) for schools (available by 2005) will assist in guiding the design, and should be used to assess the environmental performance of new designs. See **www.bre.co.uk/breeam.** See also BB87 at **www.teachernet.gov.uk/energy** and BB93 at **www.teachernet.gov.uk/acoustics**.



3. Section 1.2 of Building Bulletin 93 (above) explains how the designer must demonstrate compliance to the Building Control Body, to comply with the Building Regulations.

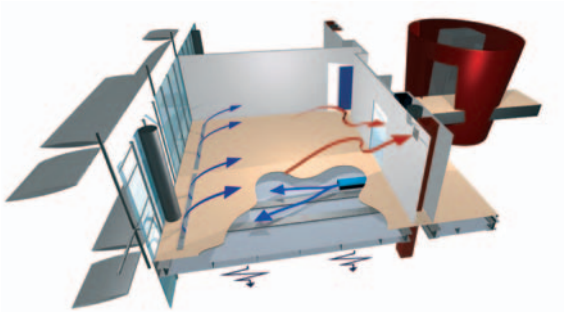
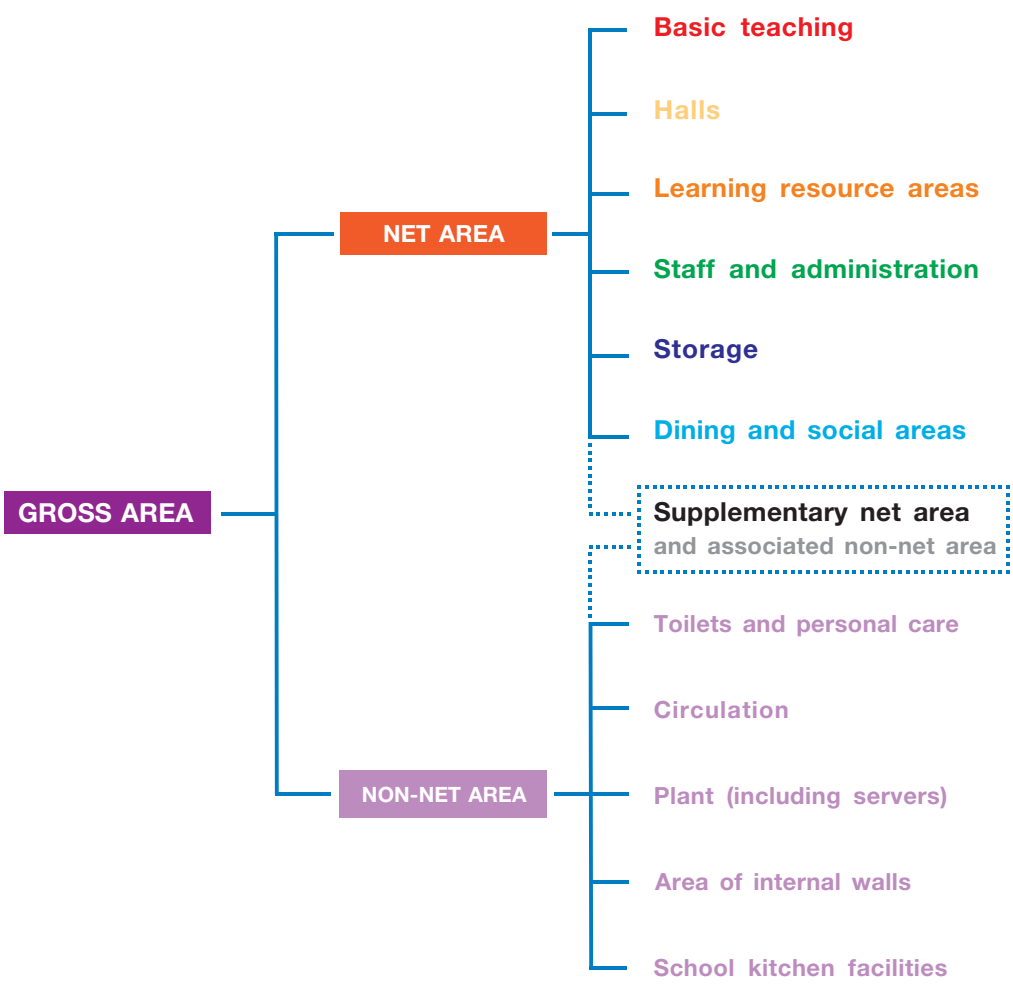


Figure C.1: gross and net area defined

Supplementary net area, which will be separately funded, should be added to the total net area to ensure the non-net area is increased proportionally.



Part C:
The Buildings

Setting out the appropriate areas for the different components of the school buildings requires careful and methodical discussion by the briefing team. This part sets out a clear and simple process for establishing the areas required for the accommodation schedule.

Gross Area of Buildings

Area recommendations for buildings are separated into two categories:

- *net area*, or usable area, which can be accurately calculated from the formulae in appendix 3 and in figures C.2 and C.3; plus any agreed supplementary net area; and
- *non-net area*, such as circulation, which will be more variable depending on the design, the configuration of existing buildings and site constraints, but will generally increase in proportion to the net area.

The total of these categories gives the gross area of the buildings[1], as described in figure C.1 opposite.

The gross area required will depend on the design and layout of buildings. Generally, the gross area of new buildings may vary between 140% and 145% of the net area (such that the net is 69% to 71.5% of the gross), depending on the layout and type of site[2]. In existing buildings, this may rise to as much as 150%. In new buildings, the gross area will need to be at least 140% of the net area unless compromises are made in the provision of circulation space[3].

The total net area required by an inclusive community school should not normally need to exceed the recommended net area for the number of pupil places and age range of the school.

Further **supplementary net area**, and a proportional increase in non-net area, may be needed if there are specially resourced non-school or support functions on the school site (as discussed on page 49).

Decisions about any facilities to be provided within supplementary net area will vary widely due to specific local needs and other joined up funding streams[4].

Hint: It is important to realise that it will be the budget, rather than the gross area, which will be the determining constraint on the project. So the gross area could be larger than that recommended, as long as it can be achieved within the budget allocated.

1. The gross area is measured to the internal face of external walls in all parts of all buildings on the school site(s) that are intended to be secure and weather-tight, except residential or farm buildings in use as such, or buildings condemned by the LEA as structurally unsafe.

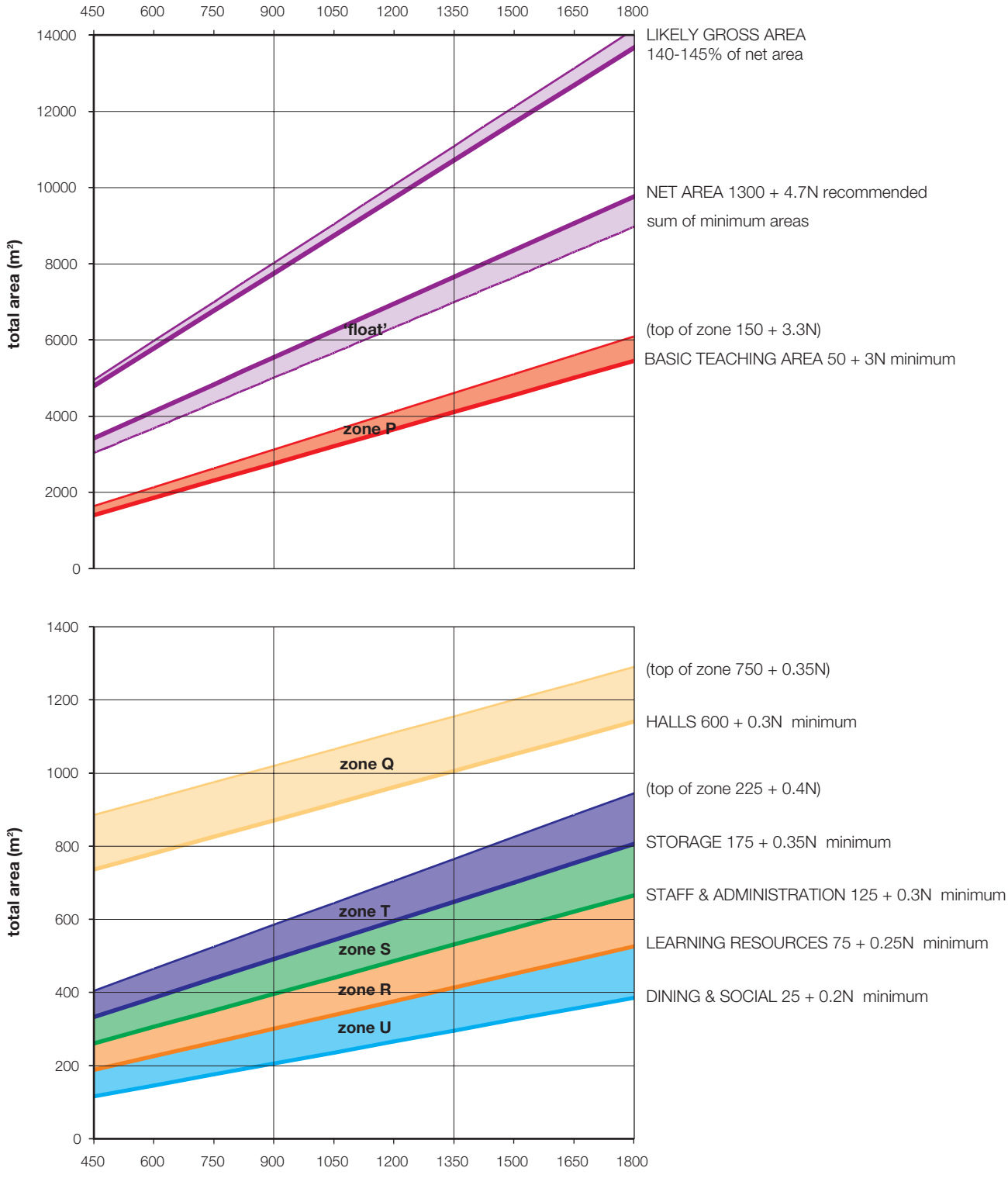
2. The budget for new schools should allow for a gross area that is around 142.5% of the recommended net area.

3. In some cases, such as sloping sites, this may need to increase.

4. It is important that the budget allows for any supplementary area that is required over and above the recommended net area.

Figure C.2: 11-16 net and gross area

Graphs showing recommended areas for total net and gross area, and categories of net area in 11 to 16 schools. Note that the areas in the top graph are at a different scale to those in the lower graph (so that the basic teaching area, zone P, is usually more than all the other areas put together).



Net Area of Buildings

The net area[1] is made up of rooms within the six categories of space listed below, plus any supplementary net areas for non-school or support functions, as discussed above. In diagram C.2 opposite, the likely areas of each category for 11 to 16 schools are shown as zones P to U.

- basic teaching area (zone P);
- halls (zone Q);
- learning resource areas (zone R);
- staff and administration (zone S);
- storage (zone T);
- dining and social (zone U).

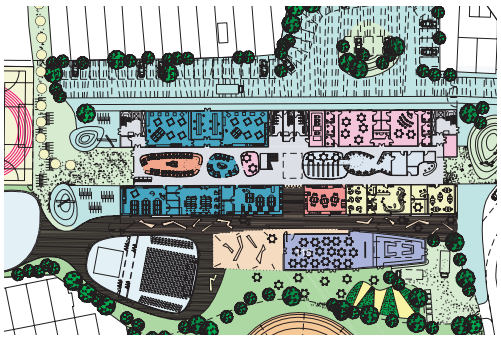
The bottom of each zone, which can be calculated using the formulae shown, represents the minimum recommended area for that category of space.

The total area for each of these categories should be at least the minimum recommended in this bulletin (i.e. the bottom of the zone). If any of the individual categories are insufficient for the site[2] (even if the total net area is enough) this is likely to compromise the best use of the buildings.

An area greater than the minimum but within the zone will usually be required for each category. The overall recommended net and gross area allows for the area of each category of space to average around the middle of each zone, through the provision of some 'float'[3]. In practice, the float can be used to provide extra accommodation where it is most needed by each school: for instance, it could be used for an extra dance studio, further staff accommodation or a larger library.

Funding for major school projects[4] will generally be based on the recommended gross area (plus any agreed supplementary areas), and this will clearly **not** be sufficient for all categories of space to be at the top of each zone – decisions have to be made against the particular priorities of the school (see Part B).

1. The net area includes all spaces in the gross area of buildings, except toilets, washrooms and showers (and lobbies to them, including changing rooms), plant areas such as boiler rooms, circulation space, school kitchens and the area taken up by internal walls.



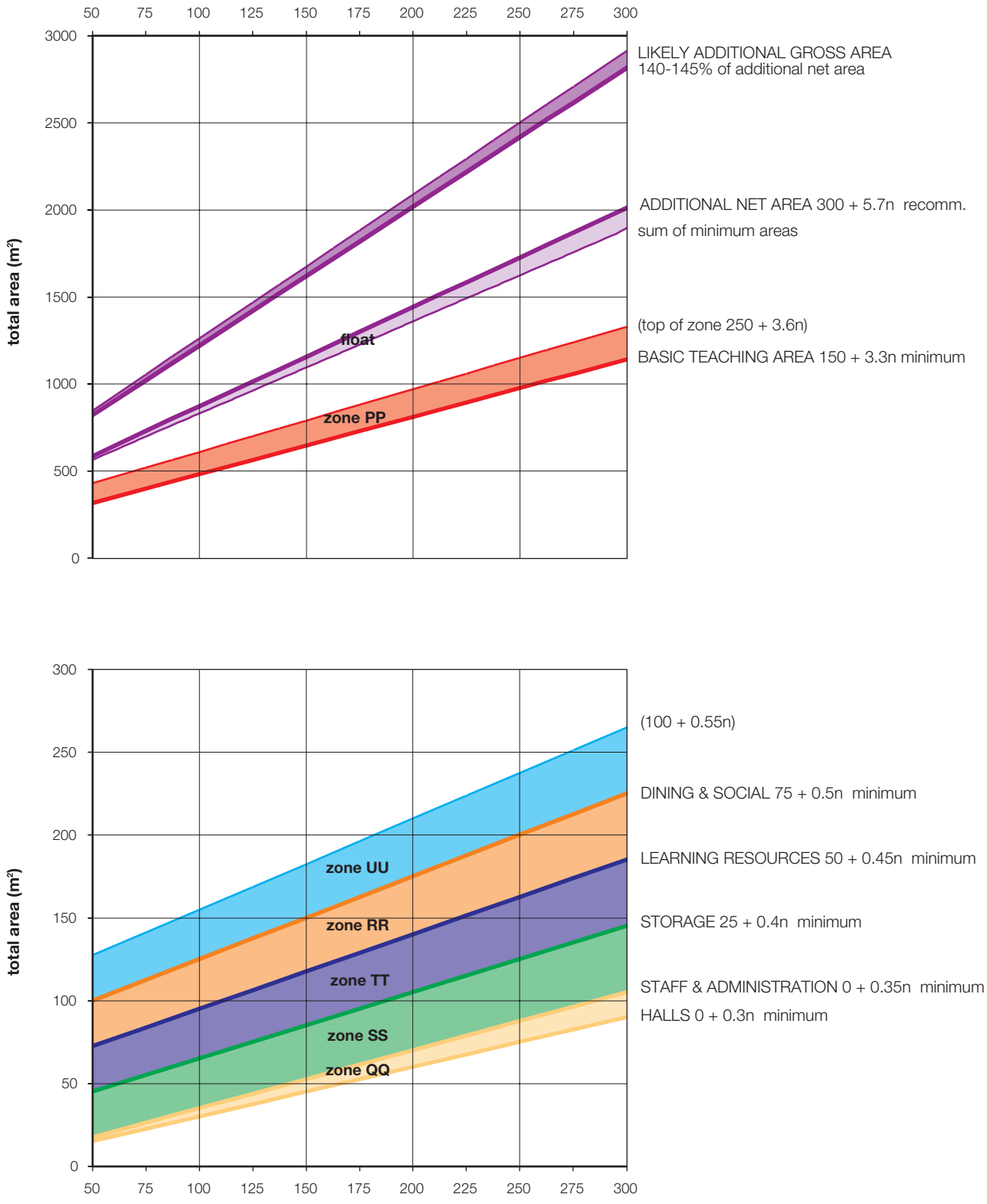
2. **split sites** (where a significant part of the school is provided on each site) will generally need to use the full formulae for each site, except for halls, to allow for the replication of resources required.

3. **What is the float?** When you add together the recommended minimum area of each category of space, the total will be around 8 to 11% less than the recommended standard for the total net area. This difference provides the 'float' which can be used to enhance some areas, depending on the priorities of the school.

4. Such as within the Building Schools for the Future programme.

Figure C.3: post-16 net and gross areas

Graphs showing recommended areas for total additional net and gross area, and categories of net area, in sixth forms in secondary schools. Note that the areas in the top graph are at a different scale to those in the lower graph (like figure C.2).



The graphs in figure C.3 opposite show zones PP to UU representing the recommended area for the six categories of space, as discussed above, for additional sixth forms in secondary schools.

Schedule of Accommodation

A core part of any brief will be the schedule of accommodation to be provided. A schedule for the whole school will include spaces in all of the six categories of space.

This bulletin includes two sets of example schedules that can be used as a starting point for developing a schedule individual to the school.

- In appendix 2, schedules for four sizes of 11 to 16 school and two sizes of additional sixth form are listed in order of the six categories[1].
- In appendix 3, different schedules are shown for the same sized school, showing a number of possible variations. These are listed by department, which may be a more accessible format, but mixes categories[2].

Whichever format is used, the total of each category of net area should be totalled and compared to the minimum recommended standard.

The next few pages give some guidance on the spaces required within each category. Each category:

- **must** include spaces required by regulation;
- **should** include spaces or areas in line with best practice and non-statutory guidance;
- **may** include other spaces where appropriate to the school's priorities or preferences.

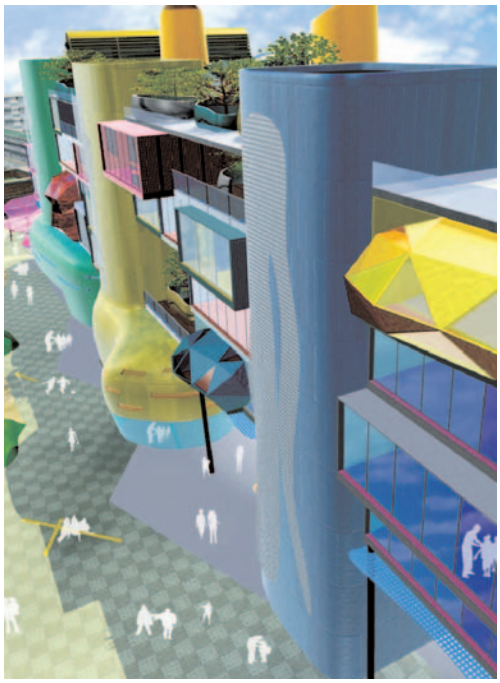
The number and type of timetabled teaching spaces, within the basic teaching area and halls area, will depend on the demands of each school's curriculum. These in turn will determine the type of teaching storage required and some learning resource areas.

The number of each type of teaching space will usually only vary from those used in appendix 2 by plus or minus one, but the final brief should be based on a 'curriculum analysis' specific to the individual school's demands[3].

Hint: bear in mind that these are guidelines. The specific objectives of each school should be considered when making decisions about how much area to allocate to each activity – for instance, taking account of its specialism.

1. These schedules, at the back of this book, are not intended to be prescriptive, but to indicate one of a number of possible sets of spaces, based on a typical curriculum and organisation.

2. Similar curriculum based variations for an 1150 place 11-18 school can be found in the exemplar design brief variations 8 and 9. See **www.teachernet.gov.uk/exemplars**: secondary brief annex 2.

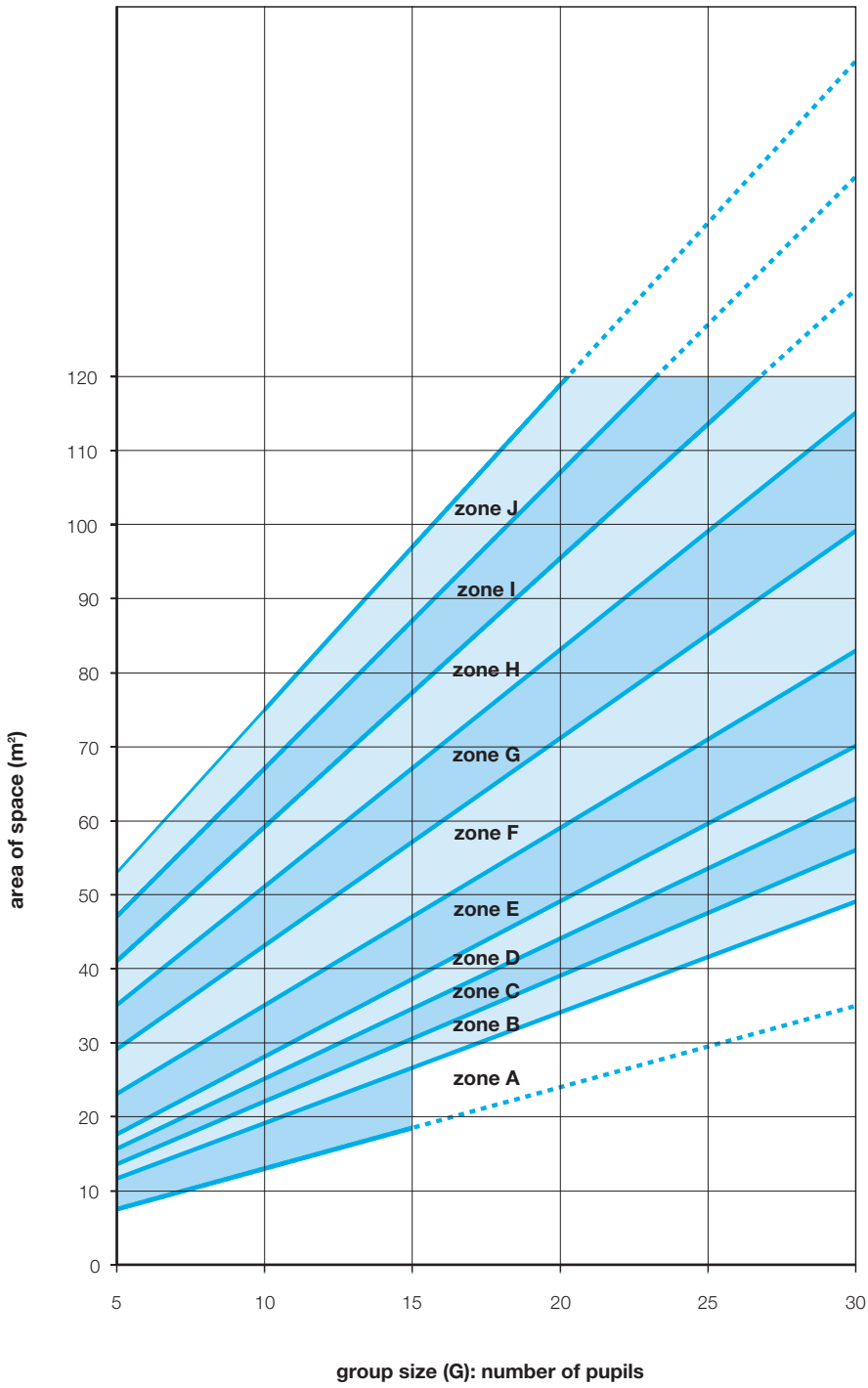


3. The number and type of timetabled teaching rooms required can be calculated with the assistance of a curriculum analysis. See **www.teachernet.gov.uk/amps** for guidance.

   A useful rule of thumb is that the number of timetabled spaces will be N/21 + or – 2 in 11-16 schools, where N = the number on roll.

Figure C.4: size of teaching spaces

Graph showing zones of recommended area for teaching spaces within the basic teaching area. The bottom of each zone represents the minimum size recommended for the group size, and can be calculated using the formulae shown.



(top of zone: 31 + 4.4G)

Zone J: resistant materials
(including CAD CAM or heat treatment)

(27 + 4G minimum)

Zone I: food room

(28 + 3.6G minimum)

Zone H: electronics and control systems,
sixth form science laboratory

(19 + 3.2G minimum)

Zone G: large art room (textiles or 3D), textiles,
sixth form art room, graphics products

(15 + 2.8G minimum)

Zone F: standard art room, science laboratory

(11 + 2.4G minimum)

Zone E: Information Communications Technology (ICT),
business studies, language laboratory

(7 + 2.1G minimum)

Zone D: large classroom
(6 + 1.9G minimum)

Zone C: standard classroom
(5 + 1.7G minimum)

Zone B: small classroom
(4 + 1.5G minimum)

Zone A: small group room

(2 + 1.1G minimum)

Basic Teaching Area

Basic teaching area comprises all timetabled teaching rooms except halls (within zones P and PP), and should include the following types of space:

- *General teaching classrooms:* at least three for every 150 pupil places.
- *Practical areas:* at least one science laboratory for every 150 pupils and usually at least one design and technology space or art room for every 150 pupils;
- *'Performance spaces':* at least one music, drama or media space in the school (dance and PE are covered under halls on page 37).

It may also include other timetabled rooms for ICT, business or specific vocational studies, or a multi-gym.

The graph opposite (figure C.4) gives area guidance for individual teaching spaces within the basic teaching area, depending on the maximum group size. A curriculum analysis can identify the maximum group size in each subject[1]. However, to allow for a flexible set of spaces, the general rule used in the example schedules is to use a maximum group size of 30 for all spaces except design and technology (based instead on 20) and any spaces used specifically for the sixth form, such as seminar rooms.

This maximum may only be needed for some groups and for registration. In the same typical model, class sizes usually average 25 to 27 in Key Stage 3 and less in Key Stage 4 and the sixth form, so some rooms may not need to accommodate as many as 30 unless used for registration (see page 18), while a few may need to accommodate more. This is important to remember when considering how the full curriculum can best be accessed by all pupils, including those requiring assistants or mobility equipment.

The minimum size for each space, represented by the formulae at the bottom of the relevant zone, generally allows for one wheelchair user, assistants, and an increasing amount of portable ICT equipment (including projectors)[2]. However, it does not allow for any significant storage in furniture or coat and bag racks, as this is allowed for under the storage category.

Space sizes used in the example schedules in Appendices 2 and 3 are generally in the middle of the relevant zone, to allow for further flexibility of furniture layouts and more wheelchair users or assistants.

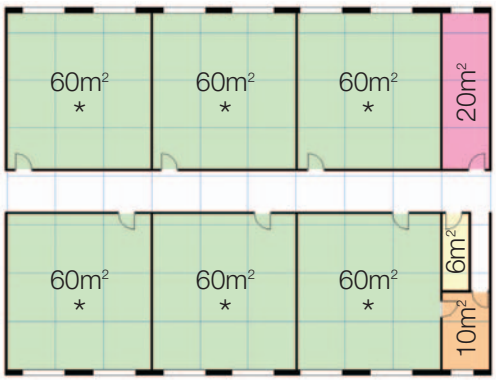
1. The maximum group size may be smaller than 30 because the year group is taught in more groups, or it is only an optional subject and options are taught in smaller groups. Maximum group sizes in design and technology are generally recommended to be 20.

© Learning Through Landscapes

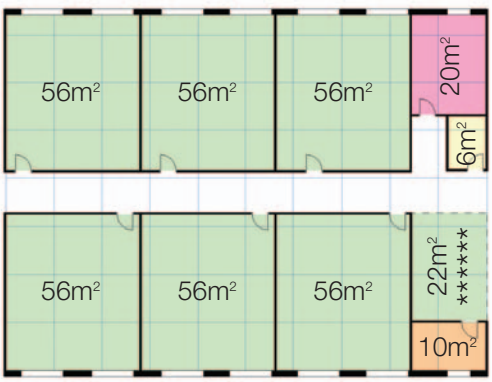
2. More detailed information on individual spaces should be identified in Room Data Sheets such as those on the web. See **www.teachernet.gov.uk/exemplars**, Secondary Exemplar Design Brief Annex.

Figure C.5: six classroom ‘cluster’ options

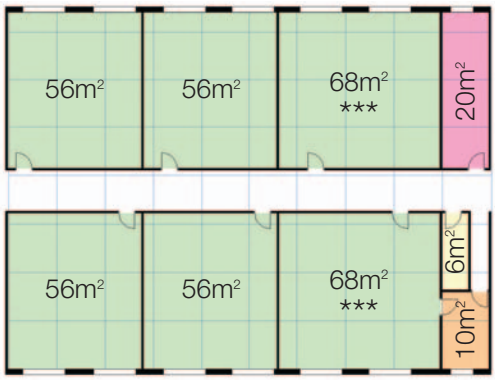
The diagrams below indicate how a ‘cluster’ configuration of two adaptable areas of 180m², plus ancillary space, on either side of a circulation route or shared resource area, can suit a variety of provision for different schools and for future learning options.



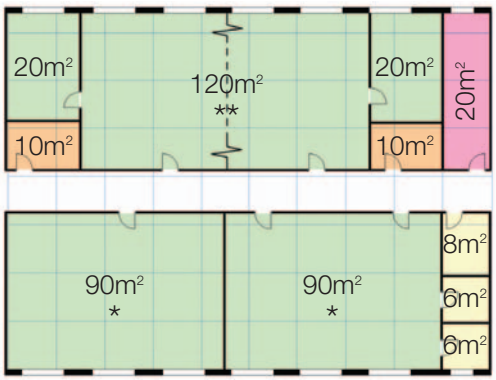
Six 60m² classrooms with some portable ICT in each.



Six 56m² classrooms plus an ICT ‘cluster’ for up to 12 computers.



Four 56m² classrooms and two 68m² classrooms, large enough for ICT workstations.



Longer term option using the same adaptability to create 90m² practical rooms or a large area for team teaching with adjacent small group rooms. This may have implications for the capacity of the school.

Key:

- basic teaching
- staff workroom
- small group room
- store

* number of computer workstations (notional)

Note: corridor shown at 2.1m wide for diagrams, but other configurations may be preferred.

General Teaching Spaces

Almost half the subjects taught in secondary schools are 'general teaching', normally requiring standard classrooms. These include English, mathematics, modern foreign languages[1], history, geography, religious education, general studies and personal, health and social education (citizenship).

In new schools these should all be at least standard classrooms (zone C in figure C.4) to ensure each has sufficient room for wheelchair users and assistants, as well as accommodating computers for up to 60% of the maximum group[2]. Ideally, this can be within a cluster configuration as shown in figure C.5 (opposite), allowing for future adaptability[3].

In existing buildings, some may be small classrooms (zone B), but there should be at least one standard classroom in each department, and alternative facilities for untimetabled access for ICT (see page 39). A few large classrooms (zone D) can be useful to allow further activities such as map work or role play.

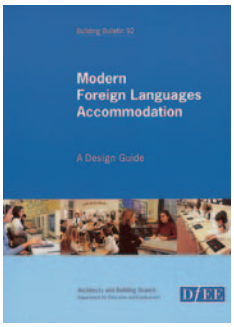
ICT Rooms

In addition to increasing portable ICT, there is likely to continue to be a need for one or two specialist ICT rooms (zone E in figure C.4), equipped with personal computers for each workstation, to teach computing as a subject, or to accommodate a language laboratory. However, the demand for further untimetabled ICT rooms or clusters, for other subjects to use as a bookable resource, is likely to diminish as laptop or tablet computers become more common[4].

Rooms in zone E may also be appropriate for business studies (perhaps with a smaller maximum group size) or non-practical vocational courses.

ICT location policy: in the future, ICT facilities used in subjects other than ICT are likely to be mainly in classrooms, perhaps using advances in portable, wireless technology. However, schools may prefer current trends of specialist ICT rooms for timetabled classes, one larger room in each department having ICT, or departmental clusters with access for everyone. Part of the 'float' area should be used to provide any of these options, but each will impact on the design.

1. Refer to BB92: Modern Foreign Languages Accommodation: A Design Guide TSO 2000. ISBN 0 11 271093 x



2. Assuming the use of some tables of 1400 x 700, suitable for laptop or flat screen computers, and space for an adjustable height table and specialist equipment for a pupil with SEN or disabilities.

3. In the schedules in appendix 2, all general teaching classrooms are at least 56m² (the minimum in zone C for a group of 30), but a further 4m² is included to allow for larger classrooms or other variations as in figure C.5. See also exemplar designs compendium pages 16 and 17 at **www.teachernet.gov.uk/exemplars**.

4. In the exemplar design brief, the only specific ICT facility is two ICT rooms, on the basis that, at 59m², all general teaching classrooms are large enough to accommodate personal computers at up to half of the workstations, or laptops or tablets at all of them. For further information on ICT in schools see the British Educational Communications and Technology Agency (Becta) at **www.ictadvice.org.uk**

Figure C.6: area requirements for typical group sizes

The table below gives a quick reference summary of areas for different general, practical and performance teaching rooms for three maximum group sizes, based on the middle of the zones in figure C.4. However, this will vary depending on the activities to be accommodated. It is important for the design/briefing team to exercise judgement based on the particular needs of their school, using the detailed guidance in the Building Bulletins referred to in the text.

	Recommended area (m^2) according to group size			
Space type	**for 20**	**for 25**	**for 30**	**zone**
small classroom	35	43	51	B
standard classroom/seminar room	43	51	60	C
large classroom	48	57	66	D
ICT room or business studies	55	66	77	E
language laboratory	55	66	77	E

science laboratory KS3/4		77	90	F
sixth form science laboratory	90	105		H

general art room for KS3/4		77	90	F
large art room (textiles or 3D)		90	105	G
sixth form art room	77	90		G

textiles room	85			H
graphic products	85			H
electronics and control systems	90			H
resistant materials	112			J
resistant materials/engineering	116			J
food room	101			I

music classroom		57	67	D
music recital room		77	90	F
drama/audio-visual studio		77	90	F

Practical Teaching Spaces

Practically-based subjects, including science[1], design and technology[2], art[3] and some vocational courses require a range of specialist teaching spaces. These fall into two types[4]:

- 'light practical'(zones E to H) with water, drainage and perhaps gas services and resistant finishes; and
- 'heavy practical' (zones I and J) with fixed machines (such as lathes or cookers), very resistant finishes, heavy electrical loads and usually a need for some specialist extraction.

Figure C.6 shows typical areas in the middle of the relevant zones. Light practical spaces can often be accommodated in similar clusters to general teaching (as in figure C.5), although all but science laboratories, which will be serviced by a central preparation room, will need at least one accessible 'walk-in' store accessed from the room.

Heavy practical rooms tend to be large and, because of the configuration of furniture and equipment, generally need to be at least 8m wide.

Performance Teaching Spaces

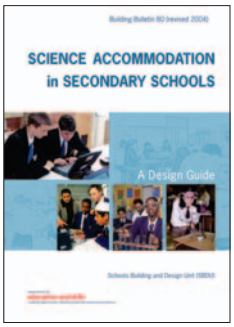
Music[5], drama and media studies will require spaces with appropriate acoustic properties, and blackout facilities where necessary, with access to a hall for performances to audiences larger than the class group. Dance would be taught in spaces in the halls category.

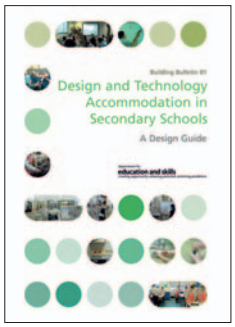
These spaces may also be suitable and popular for community use and this should be considered when specifying their location and other requirements[6].

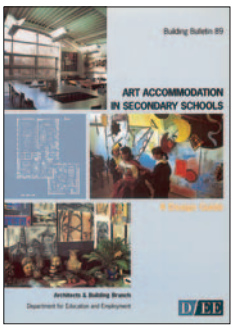
Support Spaces

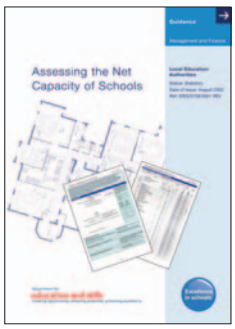
Access to support spaces is also important, covered under learning resource areas on page 39. This is particularly true in music, where a class group should be able to break into four or five smaller groups in small group/practice rooms and an ensemble room.

1. see BB80: Science Accommodation in Secondary Schools: A Design Guide. TSO revised 2004. ISBN 0 11 271039 5
2. see BB81: Design and Technology Accommodation in Secondary Schools: A Design Guide. TSO revised 2004. ISBN 0 11 271039 5
3. see BB89: Art Accommodation in Secondary Schools. TSO 1998. ISBN 0 11 271029 8
4. These types also match net capacity definitions, as in Assessing the Net Capacity of Schools DfES/0739/2001 REV. See **www.dfes.gov.uk/netcapacity**.





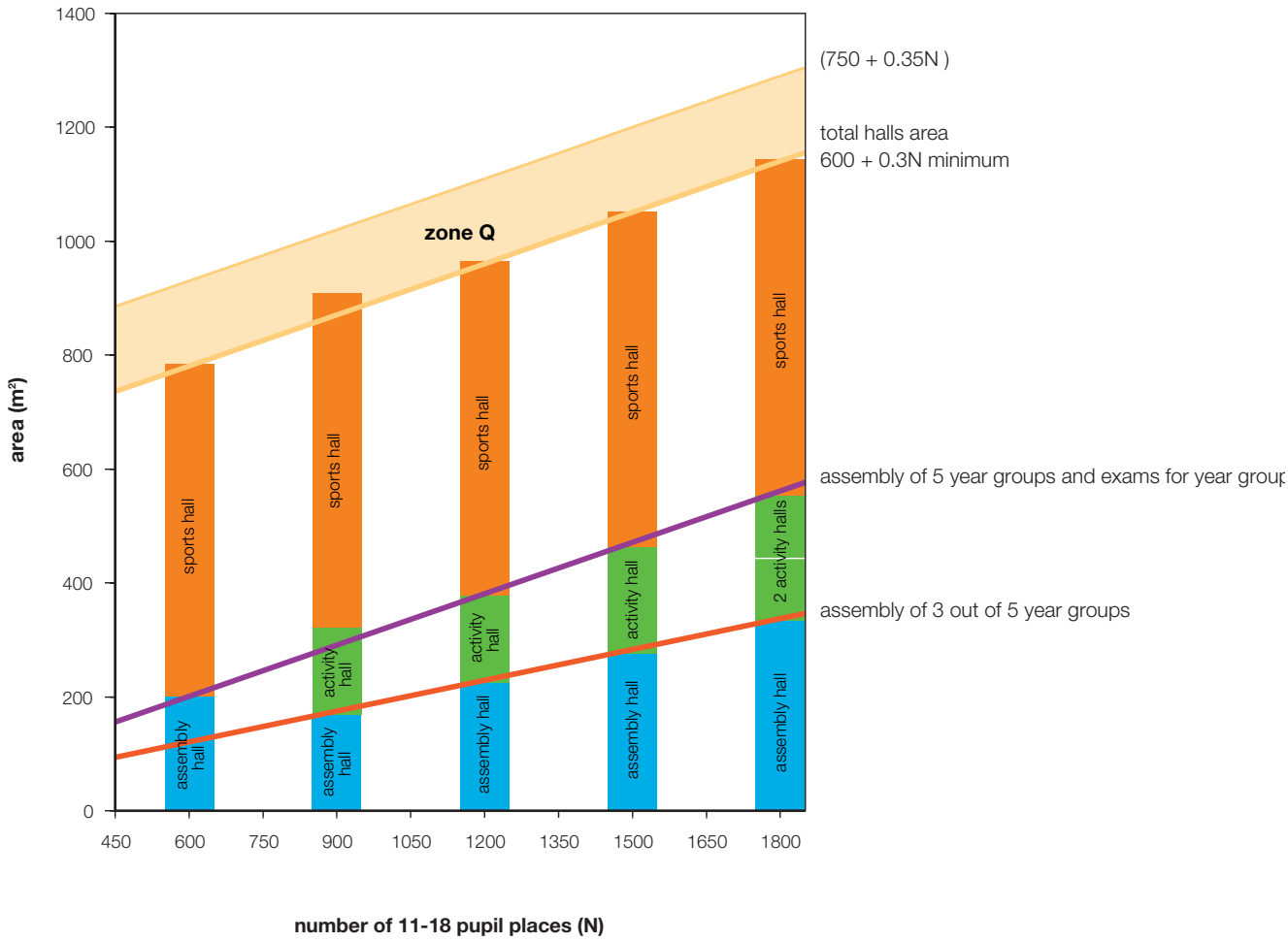




5. see BB86: Music Accommodation in Secondary Schools. TSO 1997. ISBN 0 11 271002 6
6. Refer to Sport England Technical Guidance Notes and 'Designing Space for Sports and Arts'. See **www.sportengland.org/index/get_resources/resource_downloads.htm**.

Figure C.7: size of halls

Graph showing recommended area for halls for any secondary school, including those with sixth forms. Lower broken line indicates area needed for three out of five year groups in an 11 to 16 school to assemble at one time, which may be most suitable in larger schools. The broken line above this indicates the area needed for the whole school to assemble: equivalent to 0.3m^2 per pupil.



Halls

Halls are large spaces[1] that have particular height, finish and acoustic criteria, depending on their use.

In new schools over 450 places[2], the total area (zone Q for any secondary school) should include:

- a main hall sufficient for assemblies of at least half the school at one time, examinations, public performances, parents' evenings and community events;
- a 'four-court' sports hall, which should be designed to Sport England's specifications, including the critical minimum dimensions for four badminton courts of 18m x 33m x 7.6m high[3];
- an activity studio of at least 145m^2, with a minimum internal width of 10m and height of 3.5m and a sprung floor[4], for some gymnastic activities, dance[5] and examinations if required.

In existing schools, there should generally be at least three large spaces totalling a similar area and volume as those described above.

The graph opposite (figure C.7) shows how these spaces could fit within the recommended zone for halls in secondary schools. In smaller schools, decisions need to be made as to the use of the 'float' area (see page 27), which may be used to provide an activity studio. The hall or sports hall may accommodate gymnastics and dance if it has a sprung floor and extra space for wall-hung equipment, if the demand for indoor PE spaces can be satisfied by two spaces and if other subjects such as drama have their own teaching space.

The minimum recommended area (600m^2 + 0.3m^2 per pupil place) allows for any school to have a sports hall or equivalent that need not be used for examinations, as the remaining area will be sufficient for a full year group and a fifth of any sixth form to sit an examination[6]. This relies on the main hall being sufficiently separate to the main school and circulation routes to avoid any disturbance, but allows full use of the sports hall by the PE department and ensures that this space is not required for activities that are not planned for in the normal specification[7].

Examinations location policy: the briefing team should consider carefully the implications of examinations and their preferred location, and the impact on the location and specification of halls, as well as storage.

1. Generally over 150m^2, with high ceilings. See net capacity guidance at **www.dfes.gov.uk/netcapacity**.

2. Schools with below 450 pupil places may require community use and funding to justify a four-court sports hall, although the area formula allows for it.

3. A larger area may be required for some uses. See Sport England Guidance Notes 'Sports Halls: Sizes and Layouts' (ISBN 1 86078 108 X) and 'Sports Halls: Design' (ISBN 1 86078 094 6).

4. To comply with BS7044 part 4.

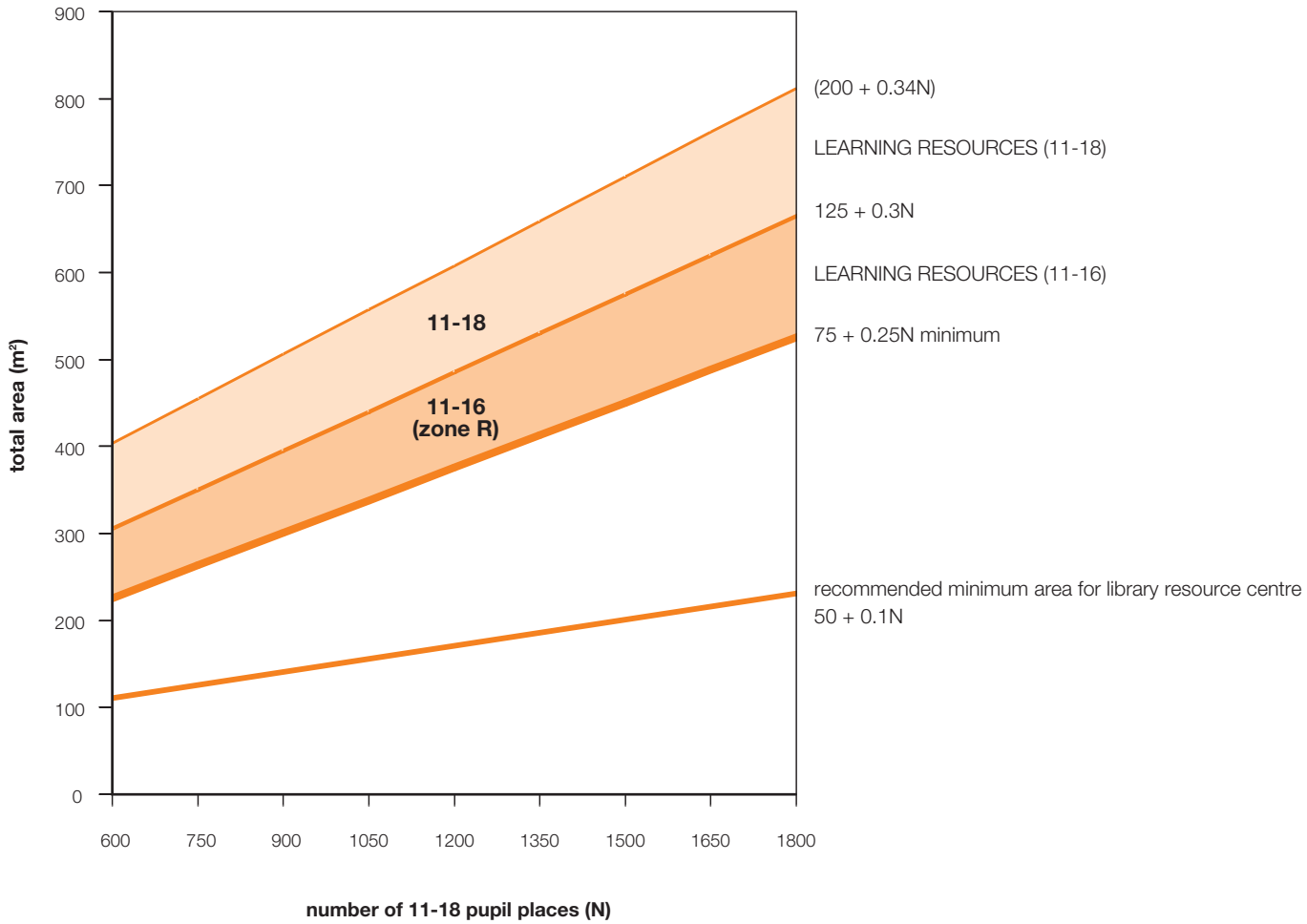
5. Further guidance on dance studios is available from the National Dance Teachers Association. See **www.ndta.org.uk**.

6. This area is also equivalent to the area of the full compliment of pupils standing in an assembly, so if it is all in one space (or linked spaces), a full assembly can also be achieved without using the sports hall.

7. The recommended specification of the sports hall will be based on a maximum group of 60 pupils plus staff, involved in physical activities. See Room Data Sheets at **www.teachernet.gov.uk/exemplars**, Secondary Exemplar Design Brief Annex 4.

Figure C.8: total area of learning resources

Graph showing recommended learning resource area for 11 to 16 schools (zone R) and 11 to 18 schools with a typically sized sixth form (based on a proportional use of zone RR). It also shows the minimum recommended area for a single library resource centre for any secondary school. The higher end of the range could apply to a school with decentralised resource facilities, local ICT clusters and a variety of specialist support spaces.



Learning Resource Areas

Learning resource areas are spaces used for learning but not timetabled for lessons. The total area (zones R and RR) for this category of space should include:

- the library resource centre[1] totalling at least 50m² plus 0.1m² for every pupil place (as in figure C.8);
- small group rooms throughout the school: at least one for every 150 pupil places, ideally spread around the school with some accessible directly from adjacent teaching spaces, to provide discrete, quiet spaces for learning support, for instance with a foreign language assistant, behaviour management or private counselling[2].
- SEN resource base for learning, behaviour, therapy support and case conferences;
- music group/practice rooms and an ensemble room totalling about four for each timetabled music room;
- specific area(s) for sixth form study where necessary.

And may also include:

- local resource areas within departments such as design and technology;
- a small recording studio or control room;
- a kiln room, darkroom or other ancillary areas;
- local ICT clusters (see ICT policy page 33).

The graph at figure C.8 (opposite) shows the total recommended area for all learning resources for an 11 to 16 school (zone R) and the area for a typical 11 to 18 school, based on zones R and RR.

Resources location policy

Learning resources accessible to pupils may all be in one library resource centre, or may also be found in local resource areas in some departments. There may be two libraries, for the main school and the sixth form for example.

Some facilities for the inclusion of pupils with SEN and disabilities may be central to the school, while others may be more dispersed through the school, to allow more immediate access for all and better integration.

Hint: avoid two-storey libraries, unless one floor can be unsupervised (for instance for sixth form study) while the librarian is on the other.

1. The library resource centre will include books, maps, CD-ROMs and artefacts available to the whole school. For more info see Cambridgeshire library service at **http://www.camcnty.gov.uk/library**.

2. Counselling can be useful for anti-bullying or personalised learning. See **www.standards.dfes.gov.uk/personalisedlearning/**.

Hint: do you need the darkroom? With the increasing popularity of digital photography, darkrooms for art may not be required. Dark conditions for physics or food testing may be best achieved through black-out blinds, to allow bigger groups and better utilisation.

Staff and Administration

The staff and administration area comprises most non-teaching areas (except storage and dining). The total staff and administration area (zones S and SS) must[1] include:

- an office for the head teacher, preferably of at least 12m²;
- medical inspection (MI) room, which, if there is a separate 'sick bay', may also be used for visiting therapists or other support for pupils with SEN and disabilities;
- work and social space for teaching staff, usually in the form of local departmental staff work rooms and a central staff room for social use (see policy below).

And should also include:

- offices for other senior teaching staff, particularly heads of year, who will need privacy for interviews and pastoral support;
- a main office with storage space for confidential records and a link to reception;
- additional accommodation for the bursar and other administrative staff;
- reprographic facilities[2].

It may also include:

- a meeting room or conference room[3] (usually adjacent to the head's office);
- caretaker's office;
- a 'sick bay', near to the reception and main office, where pupils who are sick can wait to be picked up (this is different to the MI room above).

Staff Location Policy

A social area for staff is usually centrally located. Staff work rooms may well be in a central staffroom, to encourage interaction, or in smaller department- or faculty-based workrooms (but not both, as the resultant space would be significantly underused).

1. The Education (School Premises) Regulations 1999 require any secondary school with over 120 pupils to have an office for the head teacher, and all schools to have an MI room and space for staff to work and socialise.

Hint: generous provision for individual offices will use up float with debatable effect! 8m² is recommended.

2. Reprographic facilities, and possibly ICT printing services, can usefully be positioned in a central room (but not in circulation areas) with appropriate staff and ventilation services available.
3. If there is not a meeting room, the head's office will usually need to be at least 30m² for meetings. A separate meeting room has the advantage that it can be used while the head's office is occupied.

Storage

The total area of storage (zones T and TT) must include:

- lockers or coat and bag storage for all pupils to store their personal belongings during the day, equivalent to at least 2m^2 per class group.

And should include the following teaching storage:

- shared accessible stores[1] for books and materials in general teaching subjects, one of at least 6m^2 for every general teaching department, preferably accessed from a circulation area or perhaps a shared staff workroom;
- specific accessible stores[1] for materials, equipment and pupils' work in progress in practical subjects: at least one of 6m^2 per teaching room except science laboratories, and two for each art room;
- large, central preparation/storage areas for science laboratories[2], food rooms and resistant materials workshops[3], ideally one for all science and one or two for design and technology;
- a shared instrument store of at least 10m^2 in music;
- PE equipment storage opening onto the long side of sports hall and activity studio: at least 10% of the size of the teaching space[4].

Some of this storage can be in teaching spaces[5]. However, this can reduce the usable area and flexibility of the room. Other storage should include:

- secure storage for valuable items such as examination papers and school and personal records;
- storage bays suitable for mobility equipment around the school, which may be used for temporary storage of bulk stock where there are no pupils with disabilities requiring such equipment[6];
- storage for maintenance equipment, cleaners' and caretaker's equipment;
- further separate storage for community use, for instance, of the sports hall.

Personal storage location policy: lockers and coat and bag racks may be located in classrooms, centrally (perhaps in a theatre style cloakroom, manned at certain times of the day), or in corridors or social areas: ideally in circulation areas of at least 2.7m wide[7], but not dead ends.

1. Accessible or 'walk-in' stores should be laid out, with an appropriate door, to allow items to be accessed from within the store room.

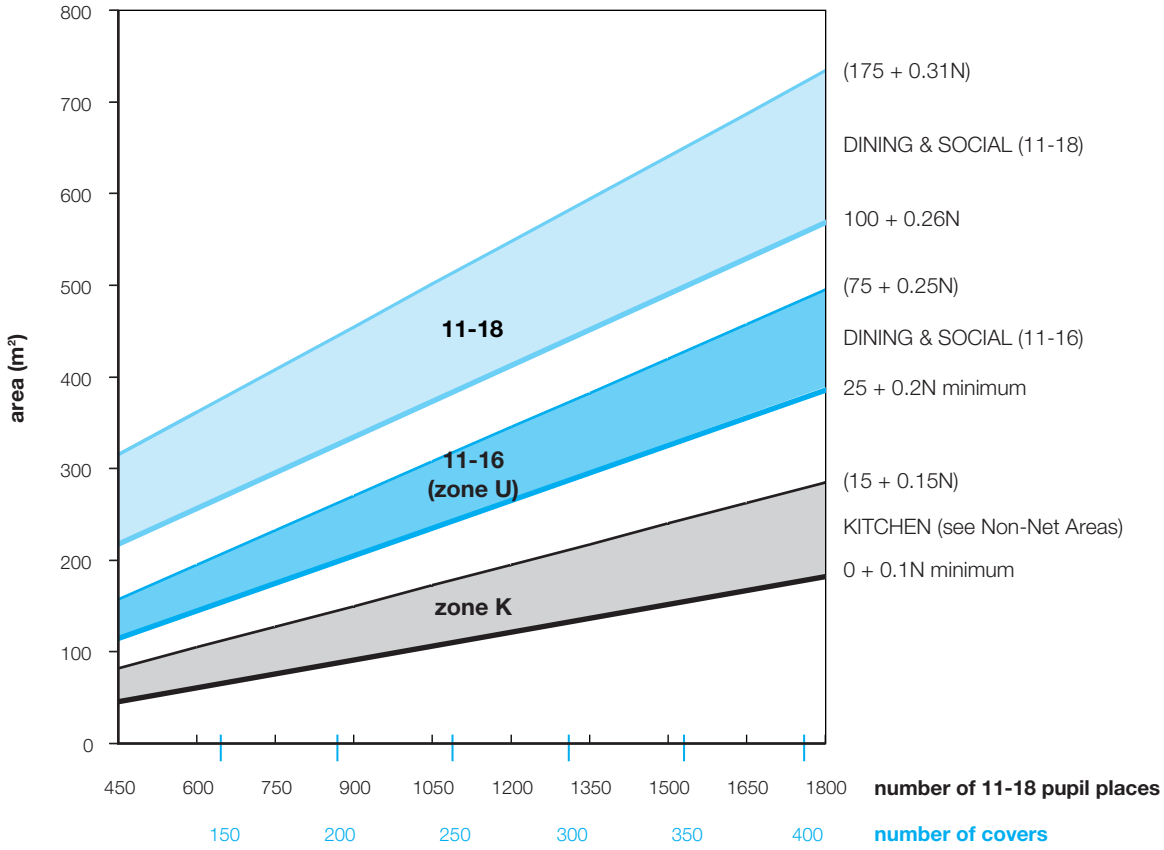
   Hint: storage in walk-in stores can be more economic on space and easier to manage than storage in teaching spaces.

2. Around 13m^2 per laboratory, see BB80: Science Accommodation in Secondary Schools: A Design Guide. TSO revised 2004. ISBN 0 11 271039 5.
3. A preparation room of at least 30m^2 for resistant materials and a smaller one for food. See BB81: Design and Technology Accommodation in Secondary Schools: A Design Guide. TSO revised 2004. ISBN 0 11 271039 5.
4. This is a minimum figure. Sport England recommend 12.5% and a minimum of 45m^2 for a one court hall. Note fire containment issues for mat storage.
5. Full height storage, such as lockers, coat and bag stores or cupboards, should be counted as storage area rather than teaching area.
6. Where pupils do need mobility aids, they may often have three items that need to be used at different times, with significant implications for storage space.

7. Building Regulations Approved Document M, 2004 requires corridors with lockers to be at least 2.7m wide.

Figure C.9:

Graph showing recommended areas for dining and social for 11 to 16 schools (zone U) and 11 to 18 schools with a typically sized sixth form (based on a proportional use of zone UU). Zone K indicates the recommended area for school kitchen facilities, including servery, staff and storage space (see page 47).



Dining and Social Areas

The total area of spaces used predominantly for dining and socialising (zones U and UU) should include:

- sufficient and appropriate areas for those pupils who wish to eat meals, based on a number of 'sittings';
- spaces specifically for sixth form pupils to use for social and non-teaching purposes.

And may include:

- further provision for cold meals or snacks, for instance from vending machines;
- social areas for other year or 'house' groups.

As well as a traditional dining hall, there are opportunities to create a much wider range of eating spaces, cafes, buffet areas or 'cyber-cafes' that offer nutritious food. Many schools use this facility to provide breakfast and other meals for both pupils and staff, and it can become a vibrant heart to the school community.

Figure C.9 (opposite) shows recommended dining and social area and kitchen areas. The area per 11 to 16 pupil is based on around 75% to 80% of pupils eating, and the equivalent of three sittings[1], plus time for gathering and dispersing. There is then an allowance of around 0.9m^2 per 'cover'.

The size of the kitchen facilities will also depend on the type of catering, but will generally be within zone K in figure C.9. School kitchens are covered under non-net spaces (page 47). Chair and table stores, which are needed if the space is to be used for other purposes, would be part of the storage category.

Dining location policy

Will the catering provision be available all day? If not, better use might be made of this space by providing the storage and resources to clear away chairs and tables for part of the day. As discussed on page 18, staggered lunch breaks can also reduce the demand for dining area. The implications of timetabling and alternative uses will have an impact on the design and location of the dining area.

1. The number of sittings, or the equivalent in a system of continuous throughput, will depend on the type of food served. Traditional hot meals average around 20 minutes per sitting, while 'fast food' options may average around 15 minutes.

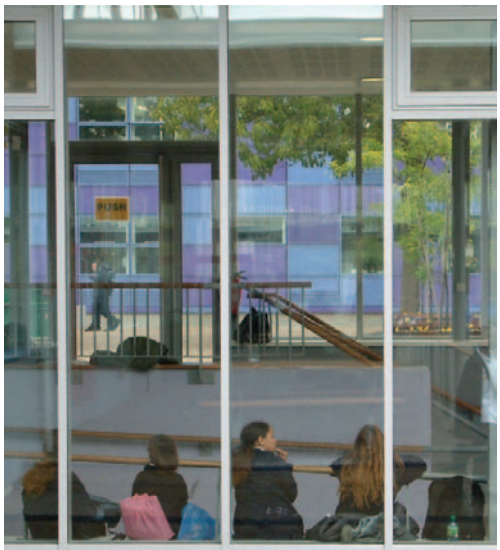
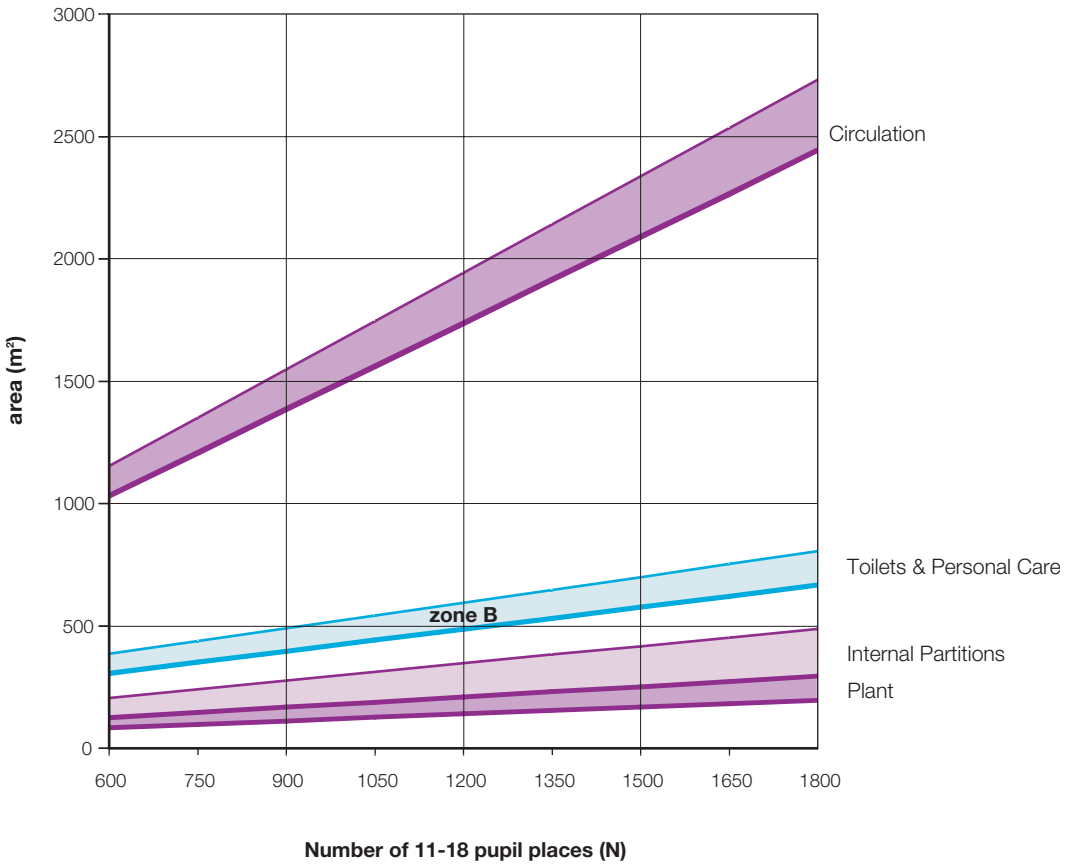


Figure C.10: non-net areas

Graph showing approximate recommended standards for non-net areas, assuming no supplementary net area. Zones without a an identifying letter are based on a percentage of the recommended net area, as on page 45. For kitchens see zone K in figure C.9 on page 42.



Non-Net Area of Buildings

The non-net area is made up of variable areas that are not included in the net area of the school. It comprises the five categories of space listed below, plus non-net areas supporting any supplementary net areas for non-school or support functions (see page 49).

- toilets and personal care (zones S and SS);
- kitchen facilities (zone K, page 42);
- circulation (25% to 30% of net);
- plant, such as boilers (2% to 3% of net);
- the area of internal walls (3% to 6% of net).

The first two categories of space will depend on the number of pupils, community use and, for kitchens, the type of catering arrangements in the school. The last three categories will generally be directly proportional to the net area, so it is important to include any supplementary net area in the total net area before calculating the requirement for these areas.

The bottom of the zone, or the lower of the proportions of net shown in brackets, represents the minimum recommended area for that category of space.

The total area for each of these categories should be at least the minimum recommended in this bulletin. If any of the individual categories are insufficient for the site[1] (even if the total non-net area is enough) it is likely to compromise the best use of the buildings.

An area greater than the minimum but within the zone or range above will usually be required for each category. The overall recommended gross area of about 142.5% of the total net area (such that net area is about 70% of gross) allows for the area of each category of space to average around the middle of each zone.

1. **Split sites** (where a significant part of the school is provided on each site) may need to use the full formulae for toilets and personal care or kitchens for each site that requires changing rooms or kitchen facilities.

Toilets and Personal Care

The total area of toilet and personal care facilities (zones S and SS on pages 26 and 28) must[1] include:

- toilets for pupils: at least one for every 20 pupils;
- separate toilets for staff: usually at least one for every ten full-time equivalent members of staff[2] (not including catering staff);
- accessible toilets for disabled pupils, staff or visitors[3];
- changing rooms with showers, near to indoor and outdoor sports provision.

And should also include:

- changing facilities for staff;
- a specialist hygiene room containing a shower, sluice, toilet, a changing trolley, fixed or mobile hoist and space for assistants[4].

Some of the spaces listed above may be designed to allow facilities appropriate to:

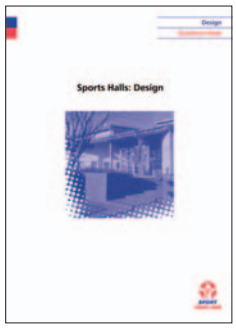
- adult community use, usually outside the school day[5];
- particular religious requirements, including orientation and ablutions.

The location and design of toilet and changing room facilities should balance the demands for both privacy and adequate supervision.

Normally it is sufficient to provide changing facilities for half a year group with equal and separate facilities for boys and girls in co-educational schools and further changing rooms for the sixth form[6]. Showers should generally be in the form of separate cubicles, with approximately one for every six or seven pupils changing[7]. In addition, at least one accessible changing area (with a sanitary fitting, wash basin and shower) should be provided in each changing area.

Toilet location policy: the size, location and design of toilets can have an impact on the potential for bullying, supervision and inclusion: from one or two central toilet 'blocks' to smaller facilities in every department, perhaps with fully accessible cubicles in each toilet.

1. The Education (School Premises) Regulations 1999 require one toilet for every 20 pupils, (rounded up to the next whole number) and changing facilities with showers for all pupils of 11 years or over.
2. Appropriate provision for staff is suggested in the Workplace (Health, Safety and Welfare) Regulations 1992, Approved Code of Practice.
3. Refer to Building Regulations, Approved Document M and BS 8300.
4. See The Manual Handling Operations Regulations 1992 as amended 2002 and draft Health and Safety Matters for SEN: Moving and Handling Pupils/Students HSE.
5. For information on changing facilities for community use see Sport England guidance note 'Sports Halls: Design' (ISBN 1 86078 094 6).



6. At least an area of 0.9m² per pupil plus 5m² for disabled users should be provided.
7. An area of at least 1.25m² per cubicle will allow a separate dry-off area.

Kitchen Facilities

The kitchen area (zone K on page 42) is often approximately half the area of the dining facilities, depending on the type of catering. It must[1] include:

- facilities for preparing food and drink, and washing up afterwards, where it is needed.

It should also include:

- food store rooms;
- facilities for catering staff, including changing areas, toilets and a chef's office;
- space for serving the food.

The size of the core preparation area will depend on the equipment needed, which in turn will depend on the type of preparation system to be used: from traditional, through cook-chill to pre-prepared 'fast food'. There should be easy access for deliveries and a secure site for bins.

Circulation

An area at least equivalent to 25% of the total net area (including supplementary net area) will be required to ensure that:

- all rooms are accessed from a circulation route, except store rooms accessed directly from learning spaces[2]:
- corridors leading to more than one or two teaching rooms have a clear width of at least 1.8m (1.9m in new schools and 2.7m where there are lockers)[3];
- smaller corridors have a clear width of at least 1.2m.

Plant

An area equivalent to at least 2% of the total net area will be needed to accommodate boiler rooms and a server room. Further area will generally be needed if ventilation plant, chimneys or vertical ducts are included in the design.

Internal Walls

The area of internal walls[4] will occupy an area equivalent to at least 3% of the net area, and up to 6% if the walls are wider to allow for acoustic separation and/or to provide thermal mass.

1. The Education (School Premises) Regulations 1999 require the school buildings to be 'adequate to permit the provision of appropriate ancillary facilities for the preparation or serving of food and drinks and the washing of crockery and other utensils'.

Hint: Effective and creative use can be made of circulation area: from spaces for informal gathering and display of work off corridors to large atria. However, ensure that any extra space can be effectively used if it is to be heated, lit and maintained.

2. Circulation area can be the routes within a larger room or atrium, and the remaining area will count towards the usable net area of the school if it is wider than 1.2m. See 'Assessing the Net Capacity of Schools' DfES/0739/2001 at **www.dfes.gov.uk/netcapacity**.

3. For details of access requirements in circulation areas refer to Building Regulations Approved Document M, 2004 and BS 8300.

4. The area of internal walls is included in the measured internal gross area of the buildings.

Figure C.11: Examples of Supplementary Net Areas

The table below gives examples of facilities or provision that would normally require supplementary net area, and a proportional amount of non-net area of circulation, plant and internal walls. These are listed under headings that match those used to identify area that is measured but excluded in net capacity assessments.

provision	likely funding
Early Years and Childcare	
• crèche	LEA
• child-care provision out of school hours other than support spaces for use of normal school facilities.	LEA/Sure Start
Adult Learning and Skills	
• adult Learning and Skills Facilities not available to the school during the school day;	Learning and Skills Council (LSC);
• centres for LEA Services, such as staff training;	LEA
• City Learning Centres	LEA
Specially Resourced Provision	
• Additional facilities providing a number of places for pupils with a specific range of SEN or disabilities (such as a support centre for 26 pupils with sensory impairments);	LEA/BSF
• Additional facilities providing a number of places for pupils with behaviour management problems, such as Learning Support Units	LEA/BSF
• Pupil Referral Units	LEA/BSF
• Accommodation for LEA designated support services, including peripatetic support staff	LEA
Extended Schools and Other	
• extra facilities to allow community use during the school day or not available to the school (such as a club room or bar)	Local Authority (LA) leisure or local community groups
• health care or 'multi-agency' provision other than joint use of MI or physiotherapy room or other facilities intended primarily for pupil use	Primary Care Trust
• public library	LA library services
• indoor swimming pool	LA leisure or New Opportunity Funds
• chapel or prayer room (if it is not available to the school for normal teaching)	Voluntary aided governors liability or diocese

Supplementary Areas

The briefing team should assess if there is a need for any supplementary net area within the project[1]. It is important to note that a dedicated, additional funding stream needs to be identified for any supplementary net area (unless it already exists in appropriate accommodation), as discussed in relation to extended schools provision on page 19.

There are three types of spaces that fall within this category:

- *area to accommodate the enhancement of school facilities:* this will include spaces which have been enlarged beyond the recommended 'standard', for instance to allow for spectators in the sports hall;
- *area to accommodate extra support facilities:* this will include separate spaces available to the school for specific uses, such as SEN specialist resources, City Learning Centres or Learning Support Units;
- *non-school provision:* this is separate space not normally available to the school, for example facilities for adult education or community use during the day.

Figure C.11 (opposite) lists some of the most likely types of non-school or support facilities[2] that would need supplementary area, and the possible funding sources that would cover this.

Supplementary area would not normally be required to accommodate small extended schools provision such as a parents'/ community room or office, or the priorities of general inclusion, specialist schools or vocational teaching.

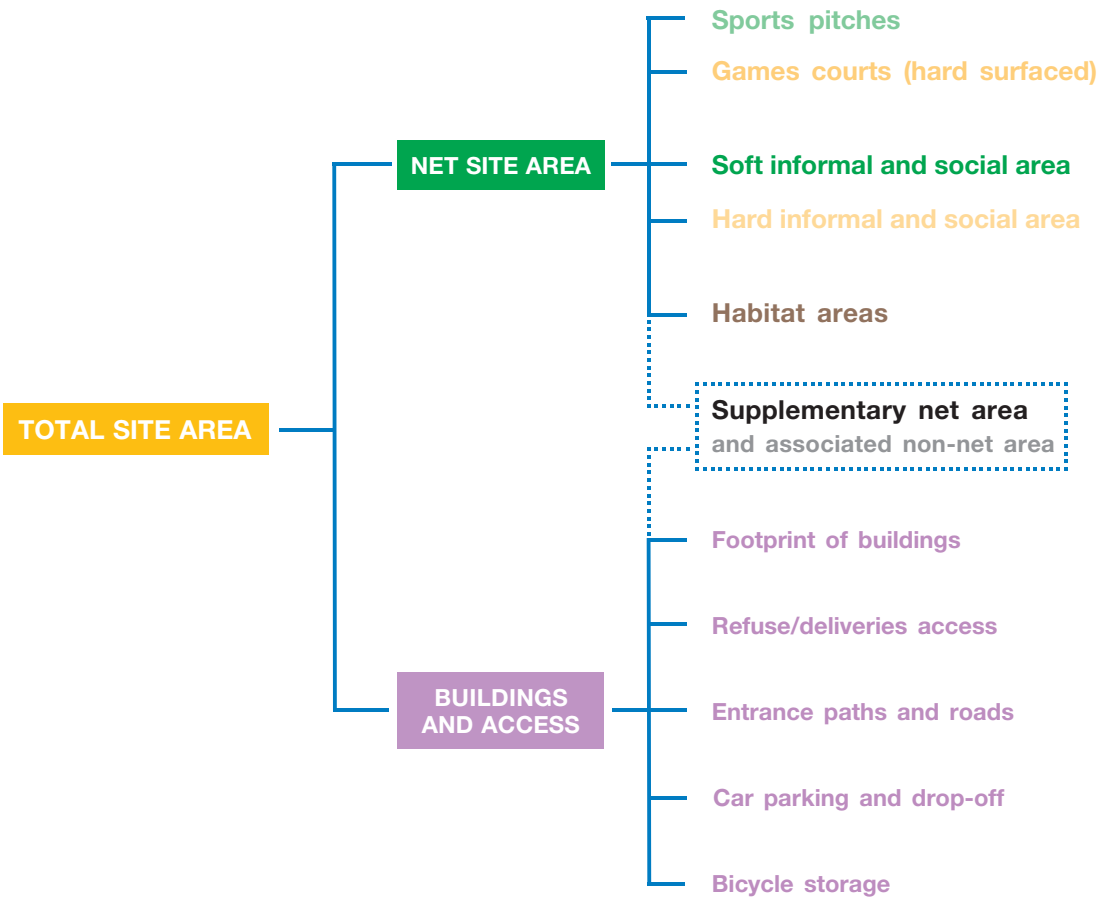
Although this bulletin does not include recommended standards for the supplementary net area, it is very important to include the desired allowance for supplementary net area in the total net area and the accommodation schedule. This will ensure that the allowance for non-net area is sufficient to allow for the circulation, plant and internal walls related to the supplementary area.

1. Non-school and support functions require further area over and above the recommended net area. They are not expected to be included in the float.

Hint: When considering the brief for a complete overhaul of the school, ensure the needs of all stakeholders are included, to avoid any current temporary provision having to remain for the want of funding.

2. As defined in Assessing the Net Capacity of Schools DfES/0739/2001 **www.dfes.gov.uk/netcapacity**.

Figure D.1: gross site area and net site area defined



Part D: The Site

This part deals with the site area for a school. School grounds are a valuable resource and have a significant effect on the ethos of the school and the quality of education pupils receive[1].

Total Site Area

The total, or gross, area of the site can be separated into two categories:

- *net site area*, legally the 'playing field' area, which can be accurately calculated from the formulae in appendix 1 and in figure D.2; plus any agreed supplementary net site area; and
- *buildings and access area*, which will be more variable depending on the configuration of new and existing buildings and site constraints, but will generally increase in proportion to the net site area.

The total of these categories gives the total (gross) area of the site, as described in figure D.1 opposite.

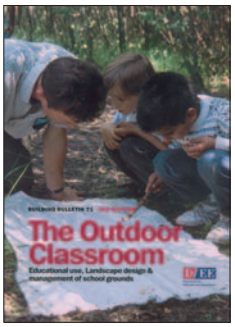
The total site area required will depend on the design of the site and the layout of the buildings. Generally, the total site area needed for a new secondary school may vary between 110% and 125% of the net site area (such that the net site area is 80% to 90% of the total), depending on the layout and type of site[2].

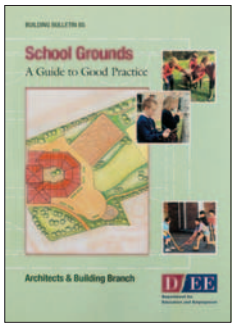
The total net site area required by an inclusive community school should not normally need to exceed the recommended net site area for the number of pupil places and age range of the school.

Further supplementary net site area, and a proportional increase in buildings and access area, may be needed if there are specially resourced non-school or support functions on the school site (as discussed on page 58).

Figure D.3 on page 54 shows a typical site plan with the various categories of net site area and buildings and access area shown.

1. Building Bulletin 71: The Outdoor Classroom second edition, TSO 1999 (ISBN 0-11-271061-1) and Building Bulletin 85: School Grounds, A Guide to Good Practice, TSO 1997 (ISBN 0-11-270990-7), give advice on the educational design and management of external spaces.



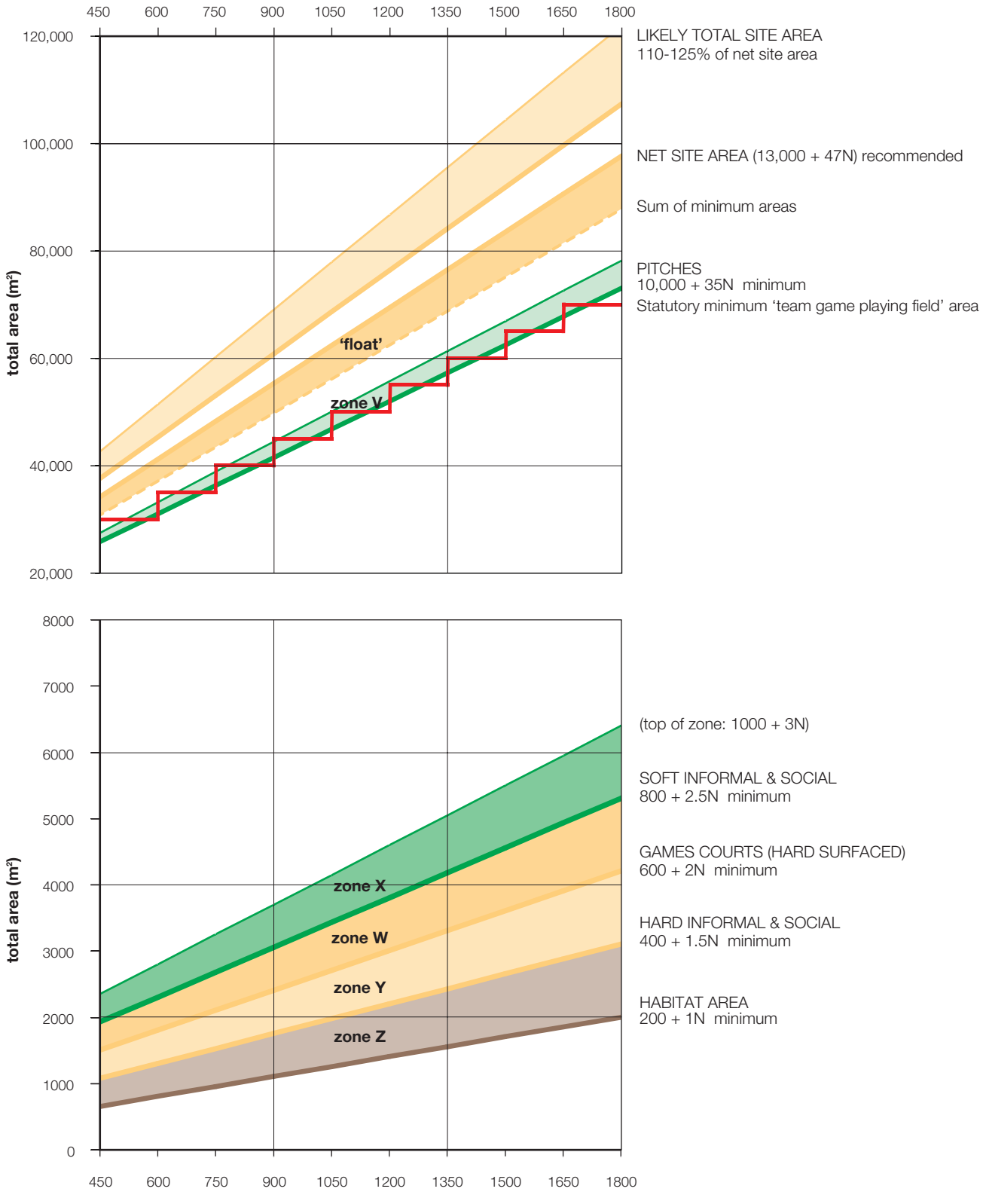


Hint: Site layout: dispersing buildings on the site may be easier for community access, and gives identity to departments or age related bases, such as a sixth form, and perhaps better supervision of enclosed outdoor areas. Linked, concentrated buildings can offer circulation without going outside, and more adaptability.

2. This calculation only relates to the total area of the site including playing fields. The proportion of buildings and access area on a confined site, or one where playing fields are elsewhere, will be much higher.

Figures D.2: site area

Graph showing recommended standards for total and net site area and for sports pitches for any secondary school, and the statutory minimum 'team game playing field' area required by the Education (School Premises) Regulations 1999.



Defining the total site area is an important step for a new school. Reviewing the site area against the graph of recommended areas (figure D.2, opposite) is also useful when considering alterations to an existing school. The range in the graph allows for variation in the shape and contours of the site, and size of the building complex.

Net Site Area: Playing Fields

The net site area, known as the 'playing fields area' in some cases[1], is the total of the following five categories of space:

- sports pitches (zone V);
- games courts (hard surfaced) (zone W);
- soft informal and social (zone X);
- hard informal and social (zone Y);
- habitat areas (zone Z);

plus any supplementary net site area needed for non-school or support functions.

The bottom of each zone, which can be calculated using the formulae shown, represents the minimum recommended area for that category of space.

The total area for each of these categories should generally be at least the minimum recommended in this bulletin (i.e. the bottom of the zone)[2].

An area greater than the minimum but within the zone will usually be designed for each category. The overall recommended net and gross area allows for the area of each category of space to average around the middle of each zone, through the provision of some 'float'[3], as with the buildings area.

In confined sites, the sports pitches area may be provided on a nearby site and/or through a single all-weather pitch[4]. Where there are no other outdoor PE facilities on the site, a multi-use games area (see page 55) within zone W should be provided on the site, to allow easy access for outdoor team games. The area of the remaining three categories of space may only be achievable at the zone or area below that recommended for normal sites.

The informal and social areas and Habitat can also be a rich resource for teaching work related to vocational courses such as horticulture, gardening, landscape design, art and design and land management.

1. Section 77(7) of the School Standards and Framework Act 1998, which is designed to protect school playing fields, defines 'playing fields' as 'any land in the open air which is provided for the purposes of physical education or recreation, other than any prescribed description of land'.

2. In **split sites** the total area for each category across all sites should be used. So, for instance, the sports pitches may all be provided on one site.

3. **What is the float?** When you add together the recommended minimum area of each category of space, the total will be around 5 to 10% less than the recommended standard for the total net site area. This difference provides the 'float' which can be used to enhance some areas, depending on the design of the site.

4. All-weather pitches count twice in area calculations. See page 55.

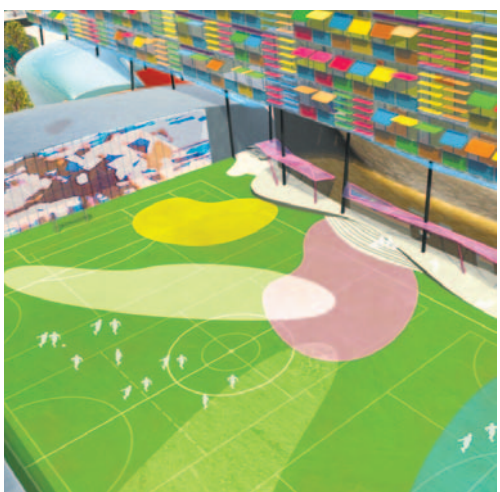


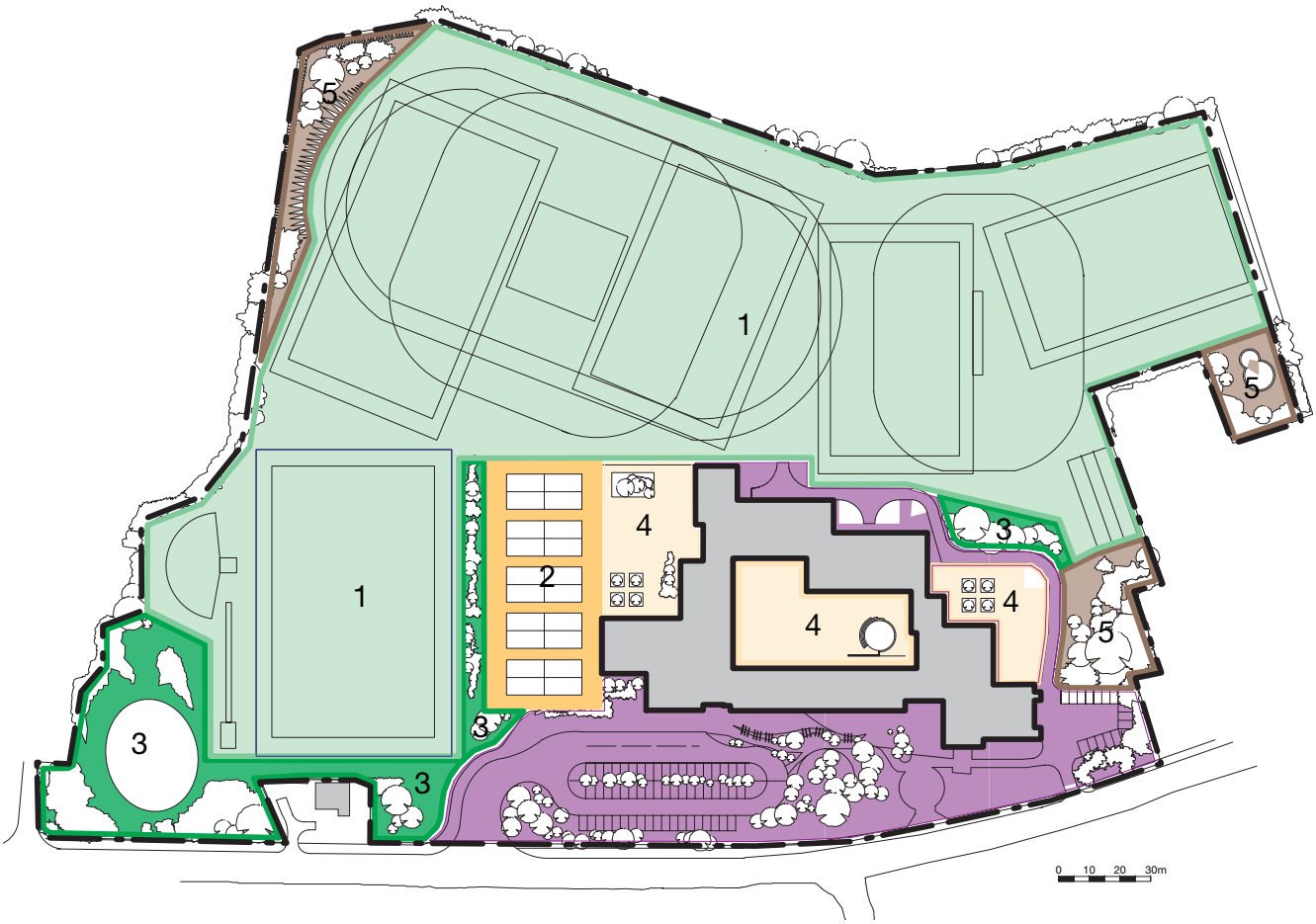
Figure D.3: typical site plan

A site plan of the secondary school used in the case study on pages 12 to 14, showing the different categories of site area

Key:

1 Pitches (49,013m²)
2 Games courts (2,875m²)
3 Soft informal and social (5,275m²)
4 Hard informal and social (3,666m²)
5 Habitat (3,023m²)

Remaining area is 'Buildings and Access Area'



Outdoor PE Facilities

The first two categories of net site area add up to the area used for Physical Education (PE) and will generally match the statutory requirement[1] for 'team game playing field area'.

Careful attention should be given to the layout of pitches, courts and practice areas[2]. Their location, size and shape should be based on a number of considerations including the statutory requirements, safety considerations, gradient, relationships between winter games pitches and summer athletics and cricket provision, orientation of pitches and accessibility[3].

Sports Pitches

The total area of sports pitches (zone V) must include playing field area laid out to suit team games including:

- winter pitches for the school's preferred team games, such as football, rugby and hockey;
- overlapping summer pitches, such as cricket[4], a 400m athletics track and facilities for field events.

All-weather pitches, including synthetic turf pitches[5] or polymeric surfaces[6], allow more intensive use than grass and, particularly with floodlighting, can also offer a popular community resource.

The area of all-weather pitches can be counted twice for the purposes of both these guidelines and regulations, as they can be used for significantly more than the seven hours a week required of team game playing fields.

Games Courts

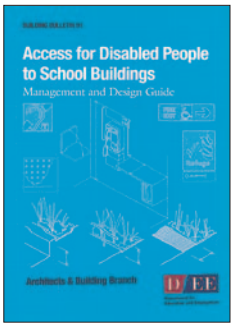
In new schools, the total area of hard surfaced games courts (zone W in figure D.2) should include:

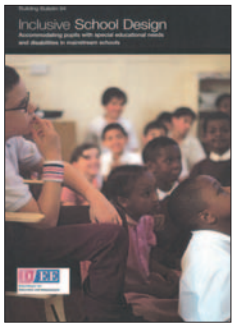
- a multi-use games area[7], with three netball courts overlaid, with critical dimensions of 60m x 33m plus margins;
- further tennis/netball courts in larger schools.

Laying out a variety of courts within a single multi-use games area makes supervision easier and extends the range of games.

In existing schools, a similar amount of hard surfaced area should be laid out for games[8].

1. The Education (School Premises) Regulations 1999 define 'team game playing fields' as 'playing fields which, having regard to their configuration, are suitable for the playing of team games and which are laid out for that purpose'.
2. Refer to Sport England 'Handbook of Sports and Recreational Building Design Volume 1: Outdoor Sports'.
3. Refer to Building Bulletin 91: Access for Disabled People to School Buildings, TSO 1999 (ISBN 0-11-271062-X), Building Bulletin 94: Inclusive School Design, TSO 2001 (ISBN 0-11-271109-X) and Sport England Guidance Note Access for Disabled People (ISBN 1 86078 149 7).





4. Cricket squares are often fenced in winter to protect the surface, as long as there is space to accommodate winter pitches around them.
5. See Sport England Guidance Note no. 596: 'Synthetic Turf Pitches'.
6. Such as shredded rubber bonded with bitumen, latex or polyurethane, on a base of concrete laid to fall. See Sport England Guidance Notes and BS7044 Part 4: 'Artificial Sports Surfaces – Specification for Surfaces for Multi-Sport Use'.
7. See Sport England Guidance Note 374: 'Multi-Use Games Areas'.
8. This area will count towards the current Education (School Premises) Regulations 1999 requirement for team game playing fields only if it is used for team games.

Informal and Social Areas

A variety of informal and social areas should be created to suit the learning development and cultural needs of pupils during breaks and before and after school, and for a range of more formal curriculum needs. These will include soft-surfaced, usually grassed, areas and hard-surfaced courtyards, paths and playgrounds.

Increasingly, the landscape design of these areas is being given equal status to the building design. It also has a great potential for promoting a sense of ownership of space by pupils and staff, thereby encouraging people to take greater care of their surroundings.

© Learning Through Landscapes

Soft-surfaced Areas

The 'soft' areas should be conveniently situated, safe and provide some shade. Imaginative landscaping and planting can provide a range of outdoor areas, including quiet areas that may be particularly appropriate to pupils with SEN or disabilities.

The total area (zone X in figure D.2) could include:

- grassed space to sit and socialise;
- sloping grass areas for spectators or a natural amphitheatre;
- landscaped or planted areas near to buildings.

Hard-surfaced Areas

To complement the soft informal and social areas, there should be hard-surfaced playgrounds and sheltered space for socialising and for the encouragement of healthy, active, creative outdoor play. Appropriate site furniture, such as seating, to accommodate larger outdoor study groups and smaller more intimate areas, is important. This area should also provide scope, through a range of hard surfaces and structures, for pupils to engage in outdoor art, theatre, dance and design.

The total area (zone Y in figure D.2) should include:

- hard-surfaced, sheltered space to sit and socialise, including those accessed from adjacent teaching spaces;
- large hard-surfaced areas for more active play.

And may also include rooftop play areas or 'playdecks' at upper floors that may be available to pupils in confined sites.

© Learning Through Landscapes

© Learning Through Landscapes

Habitat areas

Habitat areas can include a range of outdoor classroom spaces and designs to provide a valuable resource for teaching and learning across the whole curriculum, as well as for children's emotional, social and cultural development[1]. They are important for involving pupils in the life and management of the school.

The total habitat area (zone Z) should include grounds developed for a range of supervised activities, for instance meadowland, wildlife habitats (such as ponds), gardens and outdoor science areas to support the curriculum.

1. Details and examples are available from Learning Through Landscapes at **www.ltl.org.uk** and include a range of advisory services on the use, design and management of school grounds.

Buildings and Access Area

The non-net site area will vary depending on the configuration of the site and buildings. It will include:

- the 'footprint' of all buildings;
- delivery access;
- refuse areas (secure or distant from the buildings);

And will usually include:

- entrance paths, roads and related landscaping not normally available to pupils;
- car parking (usually equivalent to one parking bay per teacher plus a few bays for visitors and the disabled).

And may include:

- space for coaches, buses or taxis to safely drop-off pupils, particularly those with SEN or disabilities;
- secure bicycle storage for pupils.

It is most important to consider means of separating children's pedestrian access from vehicular circulation, delivery areas and parking and for providing adequate, visible secure bicycle storage for older pupils.

Supplementary Site Area

As discussed on page 49, any school may have supplementary areas for non-school or support functions. Any site area associated with these functions will be a supplementary site area, and may also need to be funded through other joined-up funding streams.

Some examples are play space for a crèche, extra car parking for community use, or enhancements to sports provision also used by the community.

Appendices

The following pages include two sets of example schedules of accommodation and the key formulae for all secondary schools[1].

Appendix 1 shows a full schedule of accommodation for four typical sizes of 11 to 16 secondary school and two typical sizes of sixth form. Each is shown only as an example, and is not intended as more than a guide to the possible options.

To highlight the various options available, Appendix 2 shows a variety of schedules for one size of school and, separately, its sixth form.

In practice, 11 to 18 schools would have the opportunity to be more flexible within the overall area recommended for each category of space, rather than treating the 11 to 16 and sixth form cohorts separately.

Figures highlighted in red in Appendix 1 indicate areas that are within the 'float' and could be used for other purposes. For instance, the extra area used to enhance the size of the classrooms to 60m^2 could be used for separate ICT rooms or clusters. The area of the activity studio could be used for other purposes depending on the preferences of the school[2].

Appendix 2 shows possible options in more detail, and lists them under subject headings. It takes a single size of 11 to 16 school, at 900 pupil places, and a typical sixth form for the same school, and shows different schedules for both. These options are used to highlight a number of likely variations that any school may choose.

- The configuration of classrooms is explored in the first few rows, under the subjects of English, modern foreign languages, humanities and mathematics[3]: option A uses some large classrooms, which might have ICT at the back or available as laptops or tablets, and some at the minimum recommended size; options B and C use ICT clusters within departments and option D assumes all classrooms to be 60m^2.
- The number of timetabled rooms varies in each option, in line with variations in the curriculum depending on the emphasis preferred by the school (for instance, because of a specialism). For instance, in the 11 to 16 schedules,

1. All appendices are also available as excel documents on the web at **www.teachernet.gov.uk/sbareaguidelines**.

2. In each case, the rooms have been chosen because their area most closely matches the amount of float used in the category of space in this example. The choice of room does not necessarily indicate that the type of room is optional – this will depend on the priorities and curriculum of the school.

3. Each option is achieved within an area equivalent to the number of classrooms at 60m^2 each.

the number of classrooms can vary from 20 to 23, the number of science laboratories from 6 to 8 and the number of design and technology rooms from 4 to 6 (seven including an untimetabled design resource area).

- All the 11 to 16 schedules include a four-court sports hall, but the activity hall or gymnasium may not be required or may be larger to provide a one-court hall suitable for community use, for instance in a sports college.
- The sixth form in option X uses standard classrooms and a small sixth from study area in each department, while option Y uses seminar rooms and a single sixth form study area typical of schools that choose to have a [separate] sixth form centre.

Any two or three departments may be linked as a faculty and other variations are obviously possible, including 'house' structures and 'schools within schools'[1].

1. As discussed in various exemplar designs. See **www.teachernet.gov.uk/exemplars**.

The colours of the text in Appendix 2 match those used in figures C.1 and C.2 to identify the six categories of net area and, in black, the non-net areas.

It is worth noting that the total area of each of the six categories of net area are within the recommended areas given in the relevant zones on pages 26 and 28.

Appendix 3 sets out the key formulae for calculating the minimum recommended area of the six categories of net area, the total net area (including 'float') and the likely gross area of both buildings and sites. Together, these can be used to calculate the requirements for any secondary school, including middle deemed secondary and 16 to 19 schools.

The area per pupil place for sixth forms in schools is different to that used by the Learning and Skills Council[2] for sixth form colleges by a proportion equivalent to the number of hours that students are expected to be taught. In sixth form colleges, this may be from 15 to 20 hours an week, whereas in a school it would be expected to be from 20 to 25 hours a week (with a proportional increase in area required).

2. See Learning and Skills Council Circular 02/20 'Guidance on College Property Strategies' at **www.lsc.gov.uk/National/Documents/Series/Circulars/circular_0220_project_grant_support.htm**.

Appendix 1

Example Schedules – BB98: for various sizes of schools

				11 to 16								sixth form			
number of places net capacity range				600 642 to 577		900 850 to 945		1200 1125 to 1251		1500 1399 to 1555		100		250	
	max. group size	average area (m^2)	net capacity places												
TEACHING															
basic teaching															
general teaching															
seminar room	16	43	26									**2**	86	**5**	215
classroom (see figure C.5)	30	56	30	**14**	784	**21**	1176	**28**	1568	**34**	1904	**2**	112	**2**	112
further classroom area	–	4	–	14	56	21	84	28	112	34	136	2	8	2	8
IT/business studies room	20	60	20									**3**	180	**6**	360
IT room	30	77	27	**1**	77	**2**	154	**3**	231	**4**	308				
science laboratory	30	90	30	**5**	450	**7**	630	**9**	810	**11**	990	**1**	90	**2**	180
design and technology				**4**		**6**		**8**		**10**					
food room	20	101	24	1	101	1	101	2	202	2	202				
resistant materials (incl. heat bay or CADCAM)	20	112	27	1	112	2	224	2	224	3	336				
electronics and control systems	20	90	30	1	90	1	90	2	180	2	180				
constructional textiles	20	90	30	1	90	1	90	1	90	2	180				
graphics room	20	77	27			1	77	1	77	1	77				
art				**1**		**2**		**3**		**4**					
large art room (textiles or 3D)	30	105	30	1	105	2	210	2	210	2	210				
general art room	30	90	30					1	90	2	180			1	90
music				**1**		**2**		**2**		**3**					
music recital	30	90	28	1	90	1	90	1	90	1	90				
music classroom	30	67	23			1	67	1	67	2	134			1	67
drama studio	30	90	28					**1**	90	**1**	90				
audio visual studio	30	90	28							**1**	90				
halls				**3**		**3**		**3**		**3**					
4-court sports hall	60	594	60	1	594	1	594	1	594	1	594				
activity studio	30	150	30	1	150	1	150	1	180	1	180				
main hall	2-5 year groups	–	30	1	200	1	280	1	290	1	300	add	30	add	75
total timetabled spaces				**29**		**43**		**57**		**71**		**8**		**17**	
learning resource areas															
SEN resource base	8	20	–	1	20	1	20	1	20	1	20				
small group room (SEN etc)	6	16	–	1	16	1	16	2	32	2	32				
small group/interview room (foreign language assistant etc)	4	10	–	2	20	3	30	4	40	5	50	1	10	1	10
music group/practice rooms	6	7	–	4	28	7	49	7	49	10	70	3	21		
music ensemble room	10	20	–	1	20	1	20	1	20	2	40				
recording/ control room	4	12	–	1	12	1	12	1	12	1	12				
kiln room	–	4	–	1	4	1	4	1	4	1	4				
darkroom	5	12	–	1	12	1	12	1	12	1	12				
library resource centre and careers	N/10	–	30	1	124	1	155	1	186	1	217	add	10	add	24
sixth form study areas												1	60	1	90
art/ design resource area	20	43	–									1	43	1	43
Total Teaching Area					**3155**		**4355**		**5480**		**6638**		**629**		**1295**

number of places				11 to 16								sixth form			
				600		900		1200		1500		100		250	
	max. group size	**average area (m^2)**	net capacity places												
Staff and administration															
head's office	–	12	–	1	12	1	12	1	12	1	12				
meeting room	–	–	–	1	16	1	16	1	20	1	24				
offices (senior management, head of year, SENco, librarian, caretaker, etc.)	–	8	–	10	80	13	104	15	120	18	144	1	8	1	8
community and other offices	–	8	–	4	32	3	24	3	24	2	16			1	8
SEN therapy/MI room	8	18	–	1	18	1	18	1	18	1	18				
entrance/reception and adjacent sick bay	–	–	–	1	13	1	16	1	19	1	22				
general office	–	–	–	1	33	1	48	1	63	1	78			add	8
staff room (social)	–	–	–	1	50	1	60	1	70	1	80	add	10	add	24
staff work rooms	–	–	–	5	70	5	100	5	130	5	160	1	20	1	43
reprographics	–	–	–	1	20	1	26	1	32	1	38				
ICT technician	–	8	–	1	8	1	8	1	8	1	8				
Storage (teaching)															
walk-in teaching stores:															
general teaching/IT/library	–	3	–	6	18	9	27	11	33	14	42	4	12	8	24
off practical, music or drama spaces	–	6	–	7	42	13	78	18	108	25	150			3	18
instrument and external stores	–	10	–	2	20	2	20	2	20	2	20				
PE stores	–	72+15	–	2	87	2	87	2	87	2	87				
science preparation room(s) and chemical store	–	13 per lab	–		65		91		117		143	add	23	add	36
food preparation room	–	12	–	1	12	1	12	1	12	1	12				
resistant materials prep. room	–	50	–	1	50	1	50	1	50	1	50				
Storage (non-teaching)															
central stock	–	–	–		12		15		18		24	add	4	add	6
SENco/wheelchair/appliances	–	12	–		12		12		12		12				
secure/exam/community stores	–	8	–	2	16	2	16	2	16	2	16	1	8	1	8
lockers for personal storage	–	–	–		42		63		84		105		9		23
community lockers (out of school hours)	–	4	–		4		4		4		4				
chair store	–	–	–	1	12	1	18	1	24	1	30	add	3	add	8
maintenance store	–	8	–	1	8	1	8	2	16	2	16	add	4	add	4
cleaners' stores	–	1.5	–	4	6	6	9	8	12	10	15	2	3	2	3
Dining/social areas															
dining area (hot meals)	N/4	–	–		160		215		270		325		36		80
social and sandwich areas	–	–	–		30		35		40		45		7		10
sixth form social	–	–	–										90		120
Total Net Area					**4103**		**5527**		**6919**		**8334**		**866**		**1726**
(BB98 recommendation)					(4120)		(5530)		(6940)		(8350)		(870)		(1725)
catering facilities	–	–	–												
kitchen (incl staff and stores)	–	–	–	1	68	1	101	1	134	1	167	1	11	1	28
toilets (and personal care)															
pupil changing rooms and showers	N/10	–	–	2	100	2	134	2	168	2	202	add	34	add	54
hygiene facilities	–	30	–		30		30		30		30		6		12
pupil toilets	–	2.6	–	varies	90	varies	129	varies	168	varies	207	varies	14	varies	34
staff toilets	–	3.5	–	varies	21	varies	32	varies	42	varies	53	varies	4	varies	11
circulation	assuming net around 70% of gross				**1128**		**1520**		**1903**		**2292**		**238**		**475**
plant	including server				**118**		**153**		**188**		**223**		**25**		**46**
partitions					**187**		**247**		**306**		**365**		**36**		**72**
Total Net Area					**5845**		**7873**		**9858**		**11783**		**1233**		**2457**
net as pecentage of gross					70.2%		70.2%		70.2%		70.2%		70.2%		70.2%

Appendix 2

Example Schedules of Various Curricula

basic teaching
halls
learning resources
staff and administration
storage
dining and social
non-net

curriculum emphasis				900 11 to 16 Places								215 16 to 18 Places			
				option A: science, design and technology		option B: music, sport		option C: performing arts, business and enterprise		option D: languages, art, humanities, mathematics and ICT		option X: science, design and technology, music, performing arts		option Y: languages, art, humanities, maths & ICT, business, sport	
net capacity range				834 to 927		850 to 945		865 to 962		882 to 981		137 to 361		153 to 378	
	max. group size	average area (m^2)	net capacity places	number of rooms	total area	number of rooms	total area	number of rooms	total area	number of rooms	total area	number of rooms	total area	number of rooms	total area
English, Modern Foreign Languages, Humanities and Mathematics		60		20	1200	21	1260	22	1320	23	1380	4	220	7	385
seminar rooms (sixth form)	16	43	26	–	–	–	–	–	–	–	–	–	–	4	172
large classrooms	30	66	30	8	528	4	264	–	–	–	–	–	–	–	–
min. classrooms	30	56	30	12	672	12	672	22	1232	–	–	–	–	–	–
classrooms	30	60	30	–	–	5	300	–	–	23	1380	4	240	3	180
ICT clusters	10	varies	–	–	–	1	24	4	88	–	–	–	–	1	32
small group rooms (including FLA) or sixth form study	12	varies	–	3	30	3	30	3	30	3	30	1	30	1	10
Head of Year offices	–	8	–	4	32	4	32	4	32	4	32	–	–	–	–
staff workrooms	–	20	–	2	40	2	40	2	40	2	40	add	14	add	21
general teaching store rooms	–	3	–	7	21	7	21	7	21	8	24	2	6	3	9
Information Technology/ Business Studies				2		2		3		4		4		7	
IT/BS rooms (sixth form or KS4)	20	60	20	–	–	–	–	1	60	1	60	3	180	5	300
IT room or language lab.	30	77	27	2	154	2	154	2	154	3	231	1	77	2	154
ICT technician	–	8	–	1	8	1	8	1	8	2	16	–	–	–	–
Head of Year office	–	8	–	1	8	1	8	1	8	1	8	–	–	–	–
staff workroom (shared with science)	–	20	–	1	20	1	20	1	20	1	20	add	7	add	14
ICT store room	–	3	–	1	3	1	3	1	3	1	3	1	3	2	6
server	–	8	–	1	8	1	8	1	8	1	8	–	–	–	–
Science				8		7		7		6		3		2	
science laboratories	30	90	30	8	720	7	630	7	630	6	540	3	270	2	180
small group room or sixth form study (shared with IT/BS)	–	30	–	–	–	–	–	–	–	–	–	1	30	–	–
science preparation room(s) and chemicals store	–	varies	–		104		91		91		78	add	49	add	36
Design and Technology				6 plus resource		6		5		4		1		0	
food room	20	101	24	1	101	1	101	1	101	1	101	–	–	–	–
food preparation room	–	12	–	1	12	1	12	1	12	1	12	–	–	–	–
resistant materials	20	varies	27	2	224	2	224	2	224	1	116	–	–	–	–
resistant materials prep room	–	50	–	1	50	1	50	1	50	1	50	–	–	–	–
electronics and control systems	20	90	30	1	90	1	90	1	90	1	90	–	–	–	–
textiles	20	77	27	1	77	1	77	1	77	1	77	–	–	–	–
graphic products	20	90	30	1	90	1	90	–	–	–	–	1	90	–	–
design resource area	12	50	16	1	50	–	–	–	–	–	–				
staff work room (shared with art)	–	20	–	1	20	1	20	1	20	1	20	add	7	–	–
practical store rooms	–	6	–	7	42	7	42	5	30	5	30	1	6	–	–
Art				2		2		2		3		0		1	
large art room (textiles or 3D)	30	105	30	2	210	2	210	2	210	2	210	–	–	–	–
kiln room	–	4	–	1	4	1	4	1	4	1	4	–	–	–	–
general art room	30	90	30	–	–	–	–	–	–	1	90	–	–	1	90
darkroom	5	12	–	1	12	–	–	1	12	1	12	–	–	–	–
art/design resource area	20	varies	–	–	–	–	–	–	–	1	43	1	30	–	–
practical store rooms	–	6	–	4	24	4	24	4	24	6	36	0	0	2	12
Music and Drama				1		2		3		3		1		0	
music recital	30	90	28	1	90	1	90	1	90	1	90	–	–	–	–
music classroom	30	67	23	–	–	1	67	–	–	1	67	1	67	–	–
music group/practice rooms	6	7	–	4	28	7	49	4	28	7	49	3	21	–	–
music ensemble room	10	20	–	1	20	1	20	1	20	1	20	1	30	–	–
recording/ control room	4	12	–	1	12	1	12	1	12	1	12	–	–	–	–
staff work room (shared with PE)	–	20	–	1	20	1	20	1	20	1	20	add	7	–	–
Drama studio	30	90	28		0	0	0	1	90	1	90	–	–	–	–
Audio-visual studio (media studies)	30	90	28		0		0	1	90	–	–	–	–	–	–
instrument store	–	10	–	1	10	1	10	1	10	1	10	–	–	–	–
music and drama stores	–	6	–	1	6	2	12	3	18	1	6	1	6	–	–

basic teaching
halls
learning resources
staff and administration
storage
dining and social
non-net

curriculum emphasis	max. group size	average area (m^2)	net capacity places	900 11 to 16 Places								215 16 to 18 Places			
				option A: science, design and technology		option B: music, sport		option C: performing arts, business and enterprise		option D: languages, art, humanities, mathematics and ICT		option X: science, design and technology, music, performing arts		option Y: languages, art, humanities, maths & ICT, business, sport	
				number of rooms	total area	number of rooms	total area	number of rooms	total area	number of rooms	total area	number of rooms	total area	number of rooms	total area
Physical Education															
4-court sports hall	60	594	60	1	594	1	594	1	594	1	594	–	–	–	–
activity studio	30	150	30	1	150	1	180	–	–	–	–	–	–	–	–
multi-gym	12	40	–	–	–	1	40	–	–	–	–	–	–	–	–
PE and external stores	–	varies	–	2	97	3	115	1	80	1	80	–	–	–	–
pupil changing rooms and showers	N/10	59		2	118	2	118	2	118	2	118	add	40	add	40
staff and visitor changing rooms and showers		8		2	16	3	24	2	16	2	16	–	–	–	–
Central Resources															
main hall	–	varies	30	1	280	1	280	1	310	1	280	add	65	add	65
library resource centre and careers	N/10	varies	30	1	155	1	140	1	155	1	155	add	20	add	45
sixth form study areas	50	80	30	–	–	–	–	–	–	–	–	–	–	can vary	80
librarian and Head of sixth form offices	–	8	–	1	8	1	8	1	8	1	8	1	8	1	8
central stock and library stores	–	6	–		12		12		12		12	add	5	add	5
chair store(s)	–	varies	–		18		18		18		18	add	6	add	6
secure/exam/community stores	–	8	–	2	16	2	16	2	16	2	16	1	8	1	8
dining area (hot meals)	N/4	varies	–	can vary	215	can vary	205	can vary	200	can vary	240	can vary	90	can vary	90
social and sandwich area(s)	varies	varies	–	can vary	35	–	–	can vary	70	–	–	can vary	95	can vary	105
kitchen (incl staff and stores)	–	101	–	1	101	1	101	1	101	1	101	add	25	add	25
Inclusion Support															
SEN resource base (case conference/tutorial)	18	20	–	1	20	1	20	1	20	1	20	–	–	–	–
small group room (SEN etc)	6	16	–	1	16	1	16	1	16	1	16	–	–	–	–
SEN therapy/MI room	4	18	–	1	18	1	18	1	18	1	18	–	–	–	–
SENco office	–	8	–	1	8	1	8	1	8	1	8	–	–	–	–
SENco/wheelchair/ appliances storage	–	12	–	1	12	1	12	1	12	1	12	add	4	add	4
hygeine facilities (incl. shower)	–	30	–	can vary	30	can vary	30	can vary	30	can vary	30	–	–	–	–
Administration															
head's office	–	12	–	1	12	1	12	1	12	1	12	–	–	–	–
meeting room	–	16	–	1	16	1	16	1	16	1	16	–	–	–	–
senior management offices	–	8	–	4	32	4	32	4	32	4	32	–	–	–	–
general office	–	48	–	1	48	1	48	1	48	1	48	add	6	add	6
entrance/reception and adjacent sick bay	–	16	–	1	16	1	16	1	16	1	16	–	–	–	–
staff room (social)	–	varies	–	1	60	1	60	1	60	1	60	add	20	add	25
reprographics	–	varies	–	1	26	1	26	1	26	1	26	–	–	–	–
community and other offices	–	8	–	6	48	4	32	6	48	5	40	1	8	1	8
Other															
maintenance store(s)	–	8	–	1	8	1	8	1	8	1	8	add	4	add	4
cleaners' stores	–	1.5	–	6	9	6	9	6	9	6	9	2	3	2	3
lockers for personal storage	–	–	–	–	63	–	63	–	63	–	63	–	15	–	20
community lockers (out of school hours)	–	–	–	4	–	4	–	4	–	4	–	–	–	–	
pupil toilets (incl. accessible cubicles)	_	2.7	–	varies	129	varies	129	varies	129	varies	129	varies	30	varies	30
staff toilets	_	3.5	–	varies	32	varies	32	varies	32	varies	32	varies	21	varies	21
total timetabled spaces				42		43		44		45		13		17	
total basic teaching					2956		2969		3048		3142		924		904
total halls					1024		1054		904		874		65		65
total learning resources					347		355		385		361		161		167
Total Teaching Area					**4327**		**4378**		**4337**		**4377**		**1150**		**1126**
total staff and administration					440		424		440		440		77		82
total storage					511		522		481		471		115		113
total dining and social					250		205		270		240		185		195
circulation assuming net as 70% of gross					**1520**		**1520**		**1520**		**1520**		**420**		**420**
plant not including server					**152**		**152**		**152**		**152**		**45**		**45**
partitions					**247**		**247**		**247**		**247**		**71**		**71**
Total Gross Area					**7881**		**7890**		**7881**		**7881**		**2179**		**2178**

(net 70.1% of gross)

Appendix 3

Key Formulae for Middle Deemed Secondary and Secondary Schools

N = number of pupil places

Minimum Building Areas	9–13 middle schools	11–16 secondary schools	11–18 secondary schools
basic teaching	50 + 2.5N	50 + 3N	200 + 3.06N
halls	250 + 0.3N	600 + 0.3N	600 + 0.3N
learning resources	50 + 0.2N	75 + 0.25N	125 + 0.29N
staff and administration	75 + 0.24N	125 + 0.3N	125 + 0.31N
storage	100 + 0.29N	175 + 0.35N	200 + 0.36N
dining and social	25 + 0.1N	25 + 0.2N	100 + 0.26N
'float'	150 + 0.17N	250 + 0.3N	250 + 0.32N
TOTAL NET BUILDING AREA	**700 + 3.8N**	**1300 + 4.7N**	**1600 + 4.9N**
LIKELY GROSS BUILDING AREA	**1000 + 5.4N**	**1850 + 6.7N**	**2250 + 7N**

Minimum Site Areas	All middle schools and secondary schools (except confined sites)	Middle and secondary schools in confined sites
pitches	10000 + 35N	provided 'off-site'
soft informal and social	800 + 2.5N	600 + 2.5N
games courts (hard surfaced)	600 + 2N	2000 (MUGA)
hard informal and social	400 + 1.5N	200 + 1N
habitat	200 + 1N	0.5N
'float'	1000 + 5N	remainder of site
TOTAL NET SITE AREA	**13000 + 47N**	**2800 + 4N minimum**
LIKELY SITE AREA: from	**14000 + 52N**	**4000 + 5N**
to	**16000 + 59N**	**5000 + 6N**

These formulae are the basis of the graphs later in the document. They can be used for schools where there are (approximately) the same number of pupils in each year up to Year 11. Gross area figures are approximate to allow an easy 'rule of thumb'. The stay-on rate is assumed to be 62.5% in the 11-18 schools. If the number of pupils in each year is not the same or the sixth form stay-on rate is different, the table below should be used to determine the correct formula.

Key Formulae for Calculating Building Area for Any Secondary School (except special)

	Area for each school:			Area for each pupil in:			
Minimum Building Areas	For any middle school	For any secondary school	Extra for any sixth form	KS 2	KS 3	KS 4	post-16
basic teaching	50	50	150	2.1	2.9	3.15	3.3
halls	250	600	–	0.3	0.3	0.3	0.3
learning resources	50	75	50	0.15	0.25	0.25	0.45
staff and administration	75	125	–	0.2	0.28	0.33	0.35
storage	100	175	25	0.25	0.33	0.38	0.4
dining and social	25	25	75	–	0.2	0.2	0.5
'float'	*150*	*250*	–	*0.1*	*0.24*	*0.39*	*0.4*
TOTAL NET BUILDING AREA	**700**	**1300**	**300**	**3.1**	**4.5**	**5.0**	**5.7**

This document aims to help school staff and governors, with the help of Local Education Authorities (LEAs), dioceses, and building professionals, to develop a ‘masterplan’ and a brief for building projects, whether major new buildings or minor refurbishments. This is crucial to ensure that the facilities support the educational aims and vision of each school.

It sets out simple, realistic, non-statutory area guidelines for secondary school buildings and grounds which supersede those in Building Bulletin 82: Area Guidelines for Schools, published in 1996, and any revisions.

The areas recommended have been calculated to address the requirements of pupils, including those with SEN and disabilities, the school workforce and, out of school hours, the community.

Simple graphs and formulae can be used to check that the number, size and type of rooms in both new designs and existing buildings are at least that recommended for six categories of usable space. Crucially, a further ‘float’ is also recommended to accommodate the individual priorities of each school. Similar standards are set for various categories of site area.