



Education & Skills
Funding Agency

The development of design quality standards

SPACES Manchester
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Capital Group

What we do

The Education and Skills Funding Agency (ESFA) fund education and training for children, young people and adults

Accountable for £61 billion of revenue and capital funding

School capital programme annual budget of £4.5 billion

Design standards and guidance to support the capital programmes

Education estate in England

Size and characteristic of the education estate
Property Data Survey Programme 2015 (85% of schools)

Education Phase	Sum of Gross Internal Floor Area (GIFA)		Education Establishments		Education Blocks	
	Total (m2)	% of Total	Total Number	% of Total	Total Number	% of Total
Nursery	273,600	1%	387	2%	606	1%
Primary	26,500,489	50%	15,241	81%	36,935	62%
Secondary	23,444,041	44%	2,246	12%	18,874	31%
All Through	304,385	1%	30	0%	246	0%
Other - Special	1,997,230	4%	700	4%	2,840	5%
Other - PRU/AP	258,123	0%	226	1%	466	1%
Totals	52,777,867		18,830		59,967	

Table 1: Breakdown of GIFA, blocks and establishments surveyed under the PDSP by education phase

Hierarchy of design brief – area standards

Area Guidelines for mainstream schools Building Bulletin 103

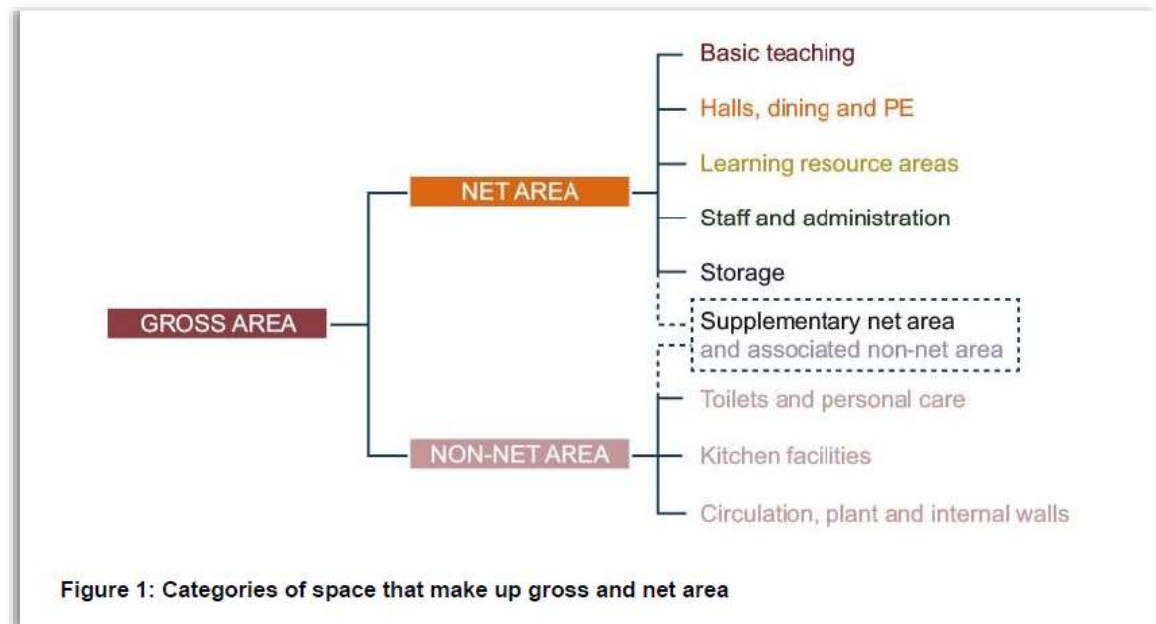
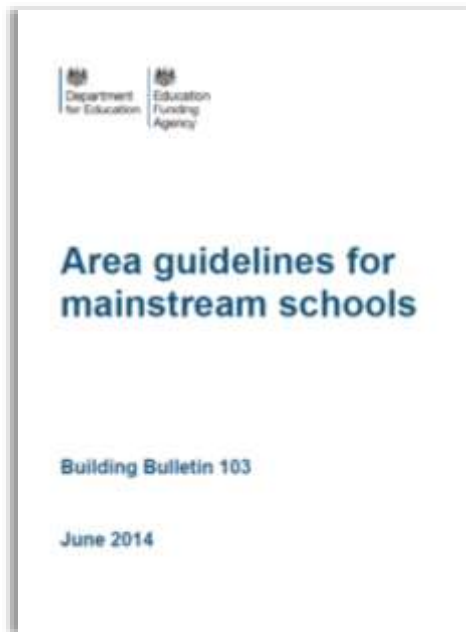


Figure 1: Categories of space that make up gross and net area

Hierarchy of design brief – area standards

Area Guidelines for SEND and alternative provision Building Bulletin 104



Setting	Typical pupil needs	BB104 formulae to use
Special schools	A range including MLD, SLD, autism (MLD/SLD/ASD)	Special school (ambulant)
	Severe social emotional and mental health difficulties (SEMH)	
	Severe autism (ASD)	
	A broad range including MLD, SLD, autism, PMLD with 10% to 60% non-ambulant	Special school (non-ambulant)
A broad range including MLD, SLD, autism, PMLD, with 60% to 90% non-ambulant		
AP	Mental and physical health difficulties	AP (health)
	Behavioural, emotional or social difficulties	AP (behaviour)
	Wide range of difficulties including behavioural	AP (behaviour)
SRP	HI, SLCN	SRP (ambulant)
	VI	SRP (PD)
	PD	
Unit	HI, SLCN	Unit (ambulant)
	VI	Unit (ambulant - ASD)
	Autism (ASD)	
	A broad range including MLD, SLD, autism, PMLD, with 10% to 60% non-ambulant	Unit (non-ambulant)

Figure 1: Table showing how the formulae apply to typical educational settings.

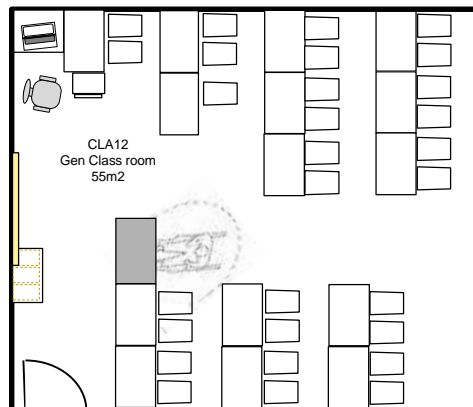
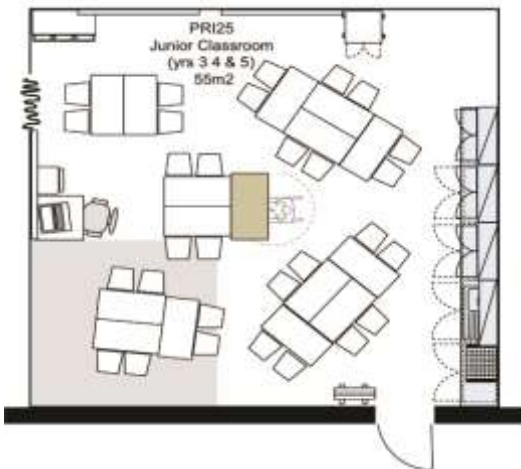
These do not cover every type of setting; specific requirements should always be established. Annex A gives recommended net and gross areas for these settings.



Area standards based on pupil needs

55m² general teaching space supports the functions of a range of settings

- 30 pupils for year 3,4 & 5 primary
- 30 pupils for secondary
- 10 pupils in MLD special needs



Design quality - specification

Balance of architectural and environmental engineering criteria

Fabric as the primary means of controlling the comfort of the inside

Rationale and compact form



Comfort of the internal environment

Prioritise the range of criteria to support educational needs

Technical standards on Daylight, Acoustics, Ventilation and Thermal Comfort

Passive measures rather than complex M&E systems and bolt-on technological



Daylight Design

Balanced daylight to the back of the room for learning and health
Allow pupils to see their work, the teacher and peers clearly
Prevent the development of short sight in pupils

Research: Children need
3 hours daily in daylight

Daylight Design Guide
(2014) Climate Based
Daylight Modelling not
Daylight Factors

Too much glass on the
façade can cause
glare and overheating



Sense of space

Transparency through the building

Connect with other daylight spaces and to the outside

Offers a quality of place to support behavior with passive supervision



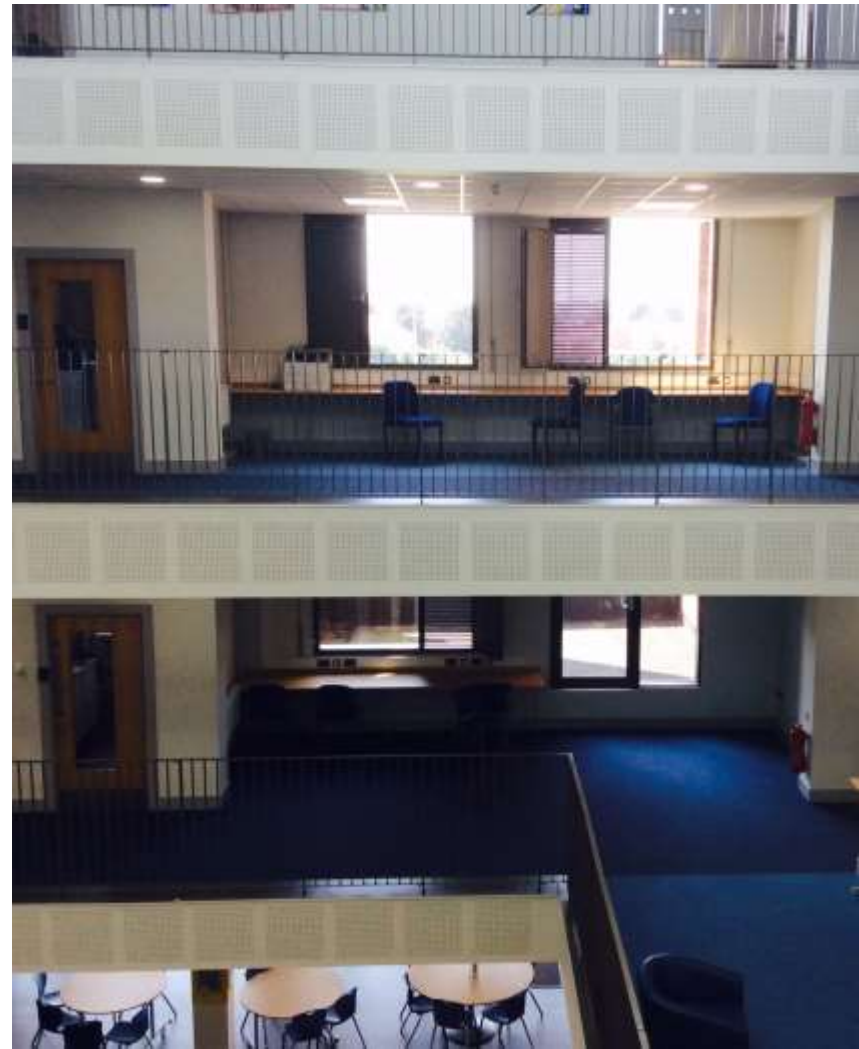
Acoustics design

Suitable indoor ambient noise levels

Clear communication of speech
between pupils and teacher
and with each other

To support learning activities

Acoustic standards BB93 (2014)



Ventilation design

Fresh air critical for health and hygiene
Poorly ventilated classrooms sees
concentration levels fade

Ineffectiveness of single-sided ventilation

Ventilation, thermal comfort and indoor
air quality guide BB101 (consultation)



Thermal Comfort

High temperatures affect student performance

Design to CIBSE TM52 Adaptive thermal comfort criteria

Integrated School Design TM57:2015



What's next for standards, guidance and tools

New Output Specification – calibration of existing specification (FOS) as part of new ESFA's Construction Framework (November 2017)

Refurbishment Scope of Works tool

Building Performance Evaluation



Construction Framework

- Framework Review to meet EFA Capital needs 2017 – 2021
- To replace the Contractors & Regional Framework when they expire
- The FOS Review:
A review of existing Facilities Output Specification 'FOS' suite of documents:
 - Generic Design Brief
 - Design & specification tools
 - Technical Guides
 - Contract Documents, including deliverables
- A review of the impact to be cost neutral to existing specification

Review of specification

Reviewed on the basis it:

- is clearer and easier to use for all outcomes
- supports a consistency of quality standards across EFA programmes
- is suitable for refurbishment, as well as new build
- is cost neutral against the current FOS suite
- is applicable for all procurement types
- is aligned with construction industry standards
- is a calibration exercise, recognising what is working rather than much change

Output Specification 2017 structure

Re-structured into:

- Generic Design Brief – containing overarching design standards
and
- Technical Annexes – containing detailed performance specifications
plus
- School specific documents - School specific brief , Area data sheets, Schedule of Accommodation, Refurbishment scope of works tool

Generic Design Brief and Technical Annexes

Generic Design Brief		Technical Annex	
Section	Content	Annex	Content
1	Context and Key Principles	1A	Definitions of Spaces: Mainstream Schools
		1B	Definitions of Spaces: SEND and Alternative Provision
2	Buildings and Grounds	2A	Sanitary ware
		2B	External Space and Grounds
		2C	External Fabric
		2D	Internal Elements and Finishes
		2E	Daylight and Electric Lighting
		2F	Mechanical Services and Public Health Engineering
		2G	Electrical Services, Communications, Fire and Security Systems
		2H	Energy
		2I	Controls
3	Fittings, Furniture and Equipment (FF&E)	3	Fittings, Furniture and Equipment (FF&E)
4	ICT Design Requirements	4	ICT Responsibility Matrix

Supporting school-specific information

School-specific Brief		School-specific Annex	
Section	Content	Annex	Content
1	Introduction	SS 1	School-specific Schedule of Accommodation and School-specific Area Data Sheets
2	Strategic Brief		
3	Project Brief	SS 2	School-specific Refurbishment Scope of Works (RSoW)
		SS 3	School-specific Legacy Equipment Schedule
		SS 4	School-specific Legacy FF&E Schedule
		SS 5	School-specific ICT Equipment Summary

Technical annex 2A

Sanitary ware

e.g. Performance criteria for sanitary ware

- now includes primary school and early years
- defines the quality of integrated plumbing systems (IPS)

Why?

- Lessons Learnt across EFA projects identified specific gaps
- A consistent quality was not being achieved across projects
- Benefits to project time rather than addressing on a project by project basis
- Greater clarity allows for a consistent approach by all
- More consistent quality

Technical annex 2D

Internal elements and finishes

e.g. Specification requirements of doors

- Brings together the key specification requirements, previously in the ADS
- Includes door and finish types

Why?

- Lessons Learnt across EFA projects identified specific gaps
- A consistent quality was not being achieved across projects
- Benefits to project time rather than addressing on a project by project basis
- consistent approach by all

Technical annex 2E

Daylight and Electric Lighting

e.g. LED lighting

- sets a standard for LED lighting in schools, for the first time.

Why?

- Recognises the great opportunity and benefits of LED, however there were no standards which considered the school's educational needs i.e. colour rendering

Technical annex 2F

Mechanical & public health engineering

e.g. Ventilation requirements in specialist teaching rooms

- aligns with ventilation requirements in BB100
- specifications for specialist rooms e.g. gas interlocks required for science and food technology rooms and fume extract

Why?

- Lessons Learnt across EFA projects identified specific gaps
- Development work with CLEAPSS

Refurbishment Scope of Works

- Format of tool and process to encourage a collaborative approach to refurbishment
- In line with ESFA policy to share more of the risk with contractor
- Gives more quality and cost certainty developed at early stage of a project
- Spec of elements can differ to those identified in Generic Design Brief, ensure the spec requirements are defined contractually

Building Performance Evaluation

Methodology scope

- To provide an objective understanding in order to fine tune the operation of the building performance
- To establish across the range of schools where there are common issues in order to learn lessons for future school building projects

Who's involved?

- Those who can inform and take responsibility to follow up action:
- Contractor, school business manager, school operations FM, teaching staff, ESFA

What's involved?

- Two stages – site walk around, teaching staff questionnaire, operations FM lead questionnaire, Energy monitoring
- Review, Action, Adjust, Review

Design quality

- Highly structured brief
- Standards developed with academia and industry
- Balanced specification
- Fabric First & passive design measures
- Comfortable environments
- Easy to control & operate
- Refurbishment risk share
- Building Performance in Use

Thank you

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