



Education & Skills
Funding Agency

The calibration of environmental design and MEP services

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Output Specification 2017

The new Output Specification has been updated from the current 2013 EFA Facilities Output Specification

It will be used in the procurement of the new EFSA Construction Framework this year

This was mainly a calibration exercise

Where possible the metrics for environmental design are “performance in use” criteria that can be measured

This presentation provides background on the development to the environmental criteria and MEP requirements

Output Specification 2017 structure

The Output specification has been re-structured into:

- The Generic Design Brief -
containing the overarching design requirements

and

- Technical Annexes -
giving the detailed performance specifications

plus school specific documents:

- School Specific Brief
- Area Data Sheets
- Schedule of Accommodation
- Refurbishment Scope of Works Tool

Structure of the Output Specification

	Generic Design Brief		Generic Design Brief	Relevant Generic Technical Annex	
		Section	Content	Annex	Content
		1	Context and Key Principles	1A	Definitions of Spaces: Mainstream Schools
Section	Content			1B	Definitions of Spaces: SEND and Alternative Provision
1	Context and Key Principles	2	Buildings and Grounds	2A	Sanitaryware
				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)
2	Buildings and Grounds	4	ICT Design Requirements	4	ICT Responsibility Matrix

Supporting School Specific information

School-specific Brief		Relevant 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

^[1] There is a School-specific Brief for Mainstream Schools and another for Special Schools and AP.

Design quality – Output Specification

Balance of architectural and environmental engineering criteria

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

Rational and compact form



Technical Annexes

Environmental criteria

2E: Daylight and Electric Lighting

2F: Mechanical Services and Public Health Engineering

2G: Electrical Services, Communications, Fire and Security Systems

2H: Energy

2I: Controls

2E: Daylight and electric lighting

- Daylight criteria for climate based daylight modelling clarified
- Climate based daylight modelling not required in refurb
- More detail on the design of blinds for glare control
- LED criteria clarified
- LED lanterns in drama studio
- Daylight & occupancy sensor numbers in classrooms reduced
- Lighting controls updated
- Emergency lighting updated for specific tasks i.e. DT rooms

Day-lit spaces: general teaching classroom circulation with breakout teaching areas



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



2F: Mechanical Services and Public Health Engineering

- Ventilation and thermal comfort criteria aligned with BB101 (draft)
- Adaptive thermal comfort criteria aligned with current CIBSE Design Summer Year 2020
- Thermal comfort criteria simplified
- Thermal mass and increased ventilation rate useful in summer
- Criterion 2 weighted daily average provided for information not compliance
- Local exhaust ventilation to specialist teaching spaces clarified
- Line plume calculation criteria revised

Section 2F: Mechanical Services and Public Health Engineering

Gas Safety requirements aligned with revision of IGEM UP/11 to be published 2017

- Environmental carbon dioxide control recommended in food rooms and science labs.
- Recommendation for CO detection systems to be located in any occupied spaces through which or adjacent to which chimneys/flues pass. This protects against leakage from within chimneys which may not always be totally accessible for visual and other inspections.

A typical hybrid ventilation design



Section 2G: Electrical Services, Communications, Fire and Security Systems

- Electrical load spare capacity reduced to 10% from 20%
- Distribution boards – reduction in number of large loads DBs
- ICT room sub-meters reduced from two to one
- Platform lifts – spec confirms hold-down buttons not allowed
- Basic level of security defined for all schools
- School specific security the subject of a Security Risk Assessment to be carried out at feasibility stage
- CCTV controls clarified

Section 2H: Energy

- Energy efficiency metering and monitoring requirements clarified
- iSERV and the K2n platform information provided for continuous monitoring and benchmarking
- Clarification that BMS needed on nearly all schools, i.e. all projects over 500m² or 100kW thermal load
- Good performance is possible if schools monitor energy use and understand the systems they have – Building Performance Evaluation
- Low and zero carbon viability assessment clarified as part of feasibility study

Section 2I: Controls

- Zoning of security and heating systems simplified to two areas i.e. main hall and sports for out-of-hours use
- Summary check list of usual controls expected
- Controls specification simplified and clarified
- Less sub-meters required
- Meters to be connected for remote monitoring or recording

Acoustic Design to BB93

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)



Summary

- Revision of EFSA Output Specification is a recalibration rather than wholesale change
- Lessons from projects have been learned
- Successful solutions have informed the exercise.
- The OS and supporting documents have been restructured in order to provide clarity



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For more information

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