University of East Anglia

Design Guide Part 0: User guide

RIBA Stages 1 – 7

2018 V1.0 Grey Cover

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1 Introduction

1.0 Prior Reading

It is imperative for readers of this document to first refer to the introductory Part entitled:

'*Design Guide Part 1 – Principles and overview*'.

Part 1 gives vital information and context that apply to all projects.

1.1 Purpose of the UEA Design Guide

The Design Guide (as a whole) is written for employees of the UEA, architects and external consultants and contractors. The purpose of the Guide is to act as a briefing document to give designers an overview of the design requirements, constraints and challenges presented by the UEA's specialist needs. It applies to all new-build and refurbishment projects controlling quality in the production of designs, specifications and the subsequent performance of buildings.

The Design Guide aims to discuss strategic matters and does not provide an exhaustive treatment of statutory or best practice design and compliance requirements; its primary purpose is to establish a starting point for design *briefs.* It is the responsibility of readers/duty holders to ensure subsequent designs are complete, compliant and able to meet the final approved brief when measured in use.

1.2 Purpose of this Part of the Guide

This Part details the contents of the entire Guide including the titles of individual sections. For each individual section information is provided relating to:

- The intended audience of the section
- Which RIBA stage[1] the section is intended to inform
- The topics discussed in the section

[1] According to the RIBA Plan of Work 2013 protocol

If a Design Guide Part isn't available for a specific technology or system please contact the Head of Engineering and Infrastructure who will arrange its production or agree an interim set of principles and specifications.

1.3 Interpretation

Any part of the Design Guide may be referenced in project contractual documentation in order for the UEA to control quality. The following interpretations apply:

Enforced requirements; the use of the word(s) 'shall', 'are required', 'is required' 'must' or 'will be' denotes a requirement that is non-negotiable and shall be used as the basis for designs, technical submissions and/or activities. If such a statement conflicts with a statutory obligation then a report to the Head of Engineering and Infrastructure shall be produced highlighting the conflict, for his or her final decision regarding compliance.

Requirements needing confirmation; the use of the word 'may' denotes a negotiable requirement or indication of a solution, where innovation and further calculation, design and discussion may be required to arrive at an optimised solution.

Quality; the Design Guide aims to arrive at the UEA's highest design aspirations and standards. It may be that, at the UEA's sole discretion, solutions are value engineered during subsequent design iterations. Designers are encouraged to consider where value engineering may result in an improved financial performance should funding constraints occur.

Currency of third party documents; where superseded standards and regulatory documents are referred to in the text, the reader shall apply current versions and disregard superseded versions.

Proof; where the word 'proof' is used e.g. 'proof is required', a written report or installation certificate must be produced for approval depending on context.

Approval and proof; all designs shall be approved by the UEA. Approval shall be interpreted as meaning written approval from either the UEA's appointed approving authority or by the Head of Engineering and Infrastructure where no other approving authority is appointed. Approvals shall be sought prior to design decision points or installation activities (depending on context) and shall be made in writing. Where approvals are sought, a written technical submission shall accompany the request setting out, with proof (e.g. calculations, drawings), the case for the approval. The purpose of the approval process is to ensure designs meet the strategic requirements of the UEA.

The obligations owed by external architects, consultants and contractors to UEA and their liabilities to UEA is not in any way diminished or otherwise reduced by the approval process. UEA is not taking over the roles and duties of the external architects; consultants and contractors who will remain fully and totally responsible for the design and/or works carried out by them or on their behalf by their staff; agents; sub-consultants or sub-contractors.

1.4 Version control and updates

Any new or amended content is highlighted in yellow so readers can easily identify changes from previous versions. Where no yellow highlights exist the document either remains unchanged or it is the first version to be published.

2 Structure of the Design Guide

The UEA Design Guide is structured as c15 separate Parts. Each Part is written to inform the activity of specific disciplines according to RIBA's Plan of Work 2013 template[2] . The table below details the individual Parts of the Guide showing where each Part fits into a project.

Part No	Part Title	RIBA Plan of Work Stages						
		1 Brief	2 Concept Design	3 Developed Design	4 Technical Design	5 Construction	6 Handover	7 In Use
DG Part 0	*User guide*	✓	✓	✓	✓	✓	✓	✓
DG Part 1	*Principles and overview*	✓	✓	✓	✓	✓	✓	✓
DG Part 2	*Architecture and development context*	✓	✓					
DG Part 3	*Design philosophies and criteria for heating, cooling ventilation and light*	✓	✓					
DG Part 4	*HVAC systems*			✓	✓	✓	✓	✓
DG Part 5	*Building management systems*				✓	✓	✓	✓
DG Part 6	*Electrical systems*			✓	✓	✓	✓	✓

[2] https://www.architecture.com/files/ribaprofessionalservices/practice/ribaplanofwork2013template.pdf

DG Part 7	*Fabric and structure*		✓	✓	✓	✓	✓	✓
DG Part 8	*Alarms and specialist communication systems*	NOT YET PUBLISHED						
DG Part 9	*Universal design and access for all*		✓	✓	✓	✓	✓	✓
DG Part 10	*Mechanical systems*	NOT YET PUBLISHED						
DG Part 11	*ICT and telephone systems*				✓	✓	✓	✓
DG Part 12	*Signage*			✓	✓	✓	✓	✓
DG Part 13	*AV specification*	NOT YET PUBLISHED						
DG Part 14	*Project handover and documenation*	NOT YET PUBLISHED						
DG Part 15	*UEA CAD standards*	NOT YET PUBLISHED						

3 Table of Parts of the Design Guide

The table below details all Parts of the Design Guide.

Part No	Part Title	RIBA Stage	Contents
0	User guide	1-7	Sections: 1. Introduction 2. Structure of the Design Guide 3. Table of Parts of the Design Guide
1	Principles and overview	1-7	1. Introduction 2. Design Principles (e.g. how to achieve and measure value for money, guidelines for innovation, resilience, 40 year lifespan of buildings, etc.)
2	Architecture and development context	1-2	Sections: 1. Introduction 2. Architecture (architectural history & architectural requirements) 3. Growth and Development Regulation (local planning policy, development strategy & conservation strategy) 4. Room Numbering Appended Documents:

			• Earlham Hall Vision and Development Doc 2011 • UEA Biodiversity Map Rev J • UEA Conservation Development Document 2006 • UEA Development Framework Strategy 20010 • UEA Landscape Strategy 2010 • UEA Strategic Principles Document 2010 • UEA Sustainability Appraisal 2010 • UEA Travel Plan 2017
3	Design philosophies and criteria for heating, cooling, ventilation and light	1-2	Sections: 1. Introduction 2. Key Principles for HVAC and Light in Buildings (e.g. how to achieve low energy design, low and zero & carbon technologies, etc.) 3. HVCL Philosophies 4. Comfort Criteria and Design Philosophies for UEA Spaces (for defined space types)
4	HVAC systems	3-7	Sections: 1. Introduction 2. Design Requirements for all HVAC Systems (HVAC load assessment, BMS integration, testing, commissioning and documentation) 3. Heating (district heating system, integration with DHS, alternative heat sources, space heating circuits and emitter sizing, domestic hot water systems)

			4. Termodeck System Design and Control 5. Comfort Cooling Using Chilled Water and/or Refrigerant Gas (district cooling system, DCS integration, alternative cooling sources, cooling circuit design and emitter sizing) 6. Ventilation Including Fresh Air Cooling (including natural, mixed mode and mechanical ventilation) Appended Schematics: • DG 4.3a Heating Schematic 2018 V1.0 • DG 4.3b Hot Water Schematic 2018 V1.0 • DG 4.3c UG Pipe Schematic 2018 V1.0 • DG 4.5a Cooling Schematic 2018 V1.0 • DG 4.6a AHU Schematic 2018 V1.0
5	Building management systems	4-7	Sections: 1. Introduction 2. General Requirements 3. Control Panels 4. Outstations 5. IQ Engineering 6. Supervisor Engineering 7. Additions to the Existing System 8. Field Wiring and Equipment 9. Alarm Reporting

			10. Metering 11. Lighting 12. Commissioning/Witnessing 13. Documentation
6	Electrical systems	3-7	Sections: 1. Introduction 2. Requirements for all Electrical Systems (electrical load assessment, BMS integration, testing, commissioning and documentation) 3. High Voltage Systems (HV network design, transformer and cable requirements, substation design) 4. Low Voltage Systems (calculations for supply and building distribution systems, earthing, containment, generator connection points, VO, PFC, metering, BMS integration, motor control centres, lighting) Appended Schematics: • DG 6.1a Electrical Schematic 2016 V1.0
7	Fabric, structure and finishing	2-7	Sections: 1. Introduction 2. Internal Floor Surfaces 3. Wall and Ceiling Finishes 4. Doors and Access Control

			5. Lifts 6. Kitchens – not completed 7. WCs, Showers and Bathrooms 8. Cleaner's Cupboards 9. Fume Cupboards – not completed 10. Service Ducts and Runs – not completed 11. Internal Furniture – not completed 12. Ramps, Steps & Handrails and Walking Surfaces 13. Building Structure 14. External Envelopes 15. Roofs 16. Structural Glazing, Windows and Blinds 17. External Furniture 18. Hard Surfaces, Roads and Car Parks 19. Landscaping and Planting Appended Documents: Listed Building Information
8	Access, alarms and internal communication systems	3-7	NOT YET PUBLISHED

9	Universal design and access to all	2-7	Sections: 1. Introduction 2. General Principles 3. Requirements
10	Mechanical systems	4-7	NOT YET PUBLISHED
11	Information & communications technology and telephone systems	4-7	Sections: 1. Introduction 2. Requirements for Data and Telephone Systems 3. Telephones 4. Data 5. Appendix
12	Signage	4-7	Sections: 1. Introduction 2. Basic Elements 3. External Signage 4. Internal Signage 5. Gallery 6. Contacts and Resources

13	AV specification	4-7	NOT YET PUBLISHED
14	Project handover and documentation	6-7	NOT YET PUBLISHED
15	UEA CAD standards	3-7	NOT YET PUBLISHED

4 Updating Process

The Design Guide will be updated annually being revised at the end of January each year. The version number will, using 2016 as an example, move from 2016 V1.0 at the end of January to 2017 V1.0 the following year. The colour of the front cover of each new version will be changed so referencing the latest version is made simple.