



# University of Edinburgh

## Engineering Services

### Guidelines

#### **Section 1: General Introduction and Application.**

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## **1.0 GENERAL INTRODUCTION AND APPLICATION**

These Engineering Services Guidelines were prepared to indicate the University's generic engineering services requirements. They are intended to guide and inform consultants and University staff in the development of design solutions and equipment selection. The University of Edinburgh will strive to ensure that the highest standard of engineering services installation and operation is achieved through out its property portfolio.

The use of this generic specification will not take the place of, or remove any professional responsibility from consultants to fully comply with the requirements of a project brief. It would be impracticable to cover all eventualities given the diverse nature of University projects. Where deviation from these guidelines is considered appropriate, this shall be subject to approval by the Engineering Operations Manager.

The following sections give guidance on the required criteria for 'normal' installations. Consultants/designers are required to comply with specific project requirements as laid down in the project brief or otherwise indicated in writing by the Project Leader.

It is the University's intention to ensure that all new works are provided to a uniform high standard. This shall be applied to the following;

- Compliance with users brief, workmanship, appearance
- Environmental control and energy consumption
- Reliability and quality of materials
- Maintainability and resilience of systems

The technical standards referred to within these guidelines are the responsibility of the Engineering Operation Manager, Works Division. They may not be varied without written approval of the Engineering Operations Manager.

These guidelines are a statement of the standards of engineering services to be applied throughout the estate. It is not intended that innovation and technical advances be rejected. The University will adopt a long-term view with regard to longevity of equipment, cost effective energy saving measures and environmental issues.

There are some installations that are considered to be specific to University activity or that the University has particular experience and expertise. Detailed guidelines on these are given in Section 5 - Special Installations. It will be expected that these design solutions will be adopted on all projects.

## 1.1 M&E RELEVANT STANDARDS

The University requires that all engineering services installations are completed in full compliance of all statutory requirements. In addition, all standards, Codes of Practice, design guides and guidance notes issued by various bodies such as British Standards Institution, Chartered Institute of Building Services Engineers, Health and Safety Executive etc. shall be complied with. Typically, these would include;

- The Building Standards (Scotland) Regulations 1991 (with amendments)
- The CIBSE Guide and Technical Publications
- Current British and European Standards
- Current Legislation and Statutory Obligations
- Regulations of the Local Authority
- Home Office Guidelines
- BS 7671, IEE Wiring Regulations, 16<sup>th</sup> Edition

It is the designers' responsibility to ensure that all relevant standards, current at the time of completion of the design, are complied with.

As part of its Health and Safety regime, the Works Division has produced specific procedures and Permit to Work systems. These are listed below for information:

- Asbestos
- Roof Access - Permit to Work
- Confined Spaces -Permit to Work
- HV Electrical Permit to Work
- Hot Work Permit
- Hazardous Area Permit to Work

Further information on the University Health and Safety Policy can be found at [www.safety@ed.ac.uk](mailto:www.safety@ed.ac.uk).

ASBESTOS: Prior to any design works, the Consultant Engineer shall familiarise themselves with the University of Edinburgh's Asbestos Policy, Procedures and Surveys available from the following website:

<http://www.estates.ed.ac.uk/works/index.html>

Alternately these can be viewed by appointment at University of Edinburgh, Estates and Buildings Works Division, 11 Infirmary Street, Edinburgh EH1 1NP. The Consultant Engineer shall highlight in his tender documentation to prospective contractors of the University of Edinburgh's Asbestos Policy, drawing attention to that above web address/link.

## **1.2 DESIGN SUBMISSIONS**

The Works Division engineers are responsible for the operation and maintenance of all engineering services throughout the University and for providing advice and guidance to other University staff on building related matters.

On any new project it is essential that design engineers consult with the Engineering Operations Manager in the first instance. This is to establish the appropriate communication between the various parties with an interest in the projects engineering solutions. The University wishes to ensure that its engineering input is available at the earliest stages of a project. All communication should generally be through the Project Manager.

Communication will usually be a mix of formal written submission and meeting discussion. The following stages of a project should be covered by review of information and design intent to date;

### **Pre-Design**

Define and evaluate alternative ways of satisfying the defined need, assess and make available staff and consultants, assess long term strategies for utilities and infrastructure use.

### **Outline Design**

Prepare alternative outline proposals and select the preferred alternative. Develop the preferred design sufficiently to enable appropriate engineering assessment.

### **Final Sketch Design**

Develop the approved outline design into a design solution, fully integrated with constructional, structural and services requirements. Validate the solution against the brief and other constraints and obtain any necessary third party approvals.

### **Detail Design**

Prepare for approval all design drawings, specifications and schedules suitable for tender action.

### **1.3 OPERATING AND MAINTENANCE (O & M) MANUALS**

O& M Manuals shall be co-ordinated by the Main Contractor and be presented within hard back loose-leaf binder format. The O & M Manual shall cover all building services systems installed as part of the project and shall include a ready means of reference and a detailed index.

One copy of the O & M Manual (in draft) shall be presented to the Engineer four weeks prior to the practical completion date for comment and approval. Two hard copies and one on CD ROM of the O & M Manual shall be presented to the Engineer at practical completion. This shall be presented as part of the hand-over documentation and shall be a pre-requisite for the issue of the Certificate of Practical Completion.

Information shall be presented on a system by system basis and shall include the following;

- An overview of the project and the overall methodology of the design solutions
- A description of each system detailing the primary elements, the operating objectives and the method of control.
- Full operating and maintenance instructions for each item of plant Include all emergency procedures required should any item of plant fail.
- List of all plant items detailing the manufacturer, type reference, capacity, supplier and the need for spare parts and specialist consumables e.g. filters and lubricants. This must utilise a standard spreadsheet layout (available from the Engineering Operations Manager) for use within a computer based PPM system.
- An index and 2 full sets of As-Installed drawings plus one set on CD ROM AutoCADLT 2005 compatible. Also, include system schematics and valve identification charts with an encapsulated, or otherwise protected, copy mounted within plant-rooms or meter housings.
- All testing and commissioning records.

Equipment and/or systems requiring statutory and/or insurance inspections e.g. lift/pressure vessels etc. shall be listed under special heading.