

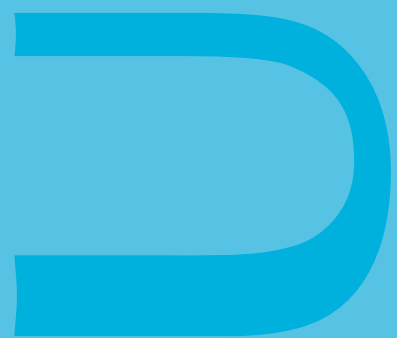


CENTRAL ADVICE UNIT

# ROB

REQUIREMENT FOR  
OFFICE BUILDINGS

THIRD EDITION  
MARCH 1999



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The members of the sub group formed to provide an oversight of the drafting were::

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who particularly contributed to the drafting of the document.

# GUIDE TO REQUIREMENTS

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## PREFACE

The office element of Government's Civil Estate meets a variety of operational needs. The buildings on this estate can, however, be expected to share certain common characteristics, not least because many are likely to be occupied during their lifetime by a number of different Departments. Until the first publication of the Guide to Requirements for Office Buildings in November 1993, there was no guidance about the essential common requirements to be incorporated in newly built, acquired or refurbished offices.

As was the case for the original documents, the latest edition aims to offer common sense guidance, which may be adapted to particular circumstances. Some requirements referred to may well appear obvious, however, experience has proved that they are still overlooked. Key and consistent themes throughout are the need for:

- flexibility so that offices and the services in them can be readily adapted for different Departments;
- environmental considerations as they affect both the prospective occupancy and the environment in general. These therefore figure in a strong emphasis on energy conservation and on the reduction of CO<sub>2</sub> emissions.

Most of the content of the document is uncontentious, has commanded widespread acceptance in the past and should be regarded as drawing matters together rather than breaking new ground. In two particular areas, however, these features do not necessarily apply and special attention is therefore required:

- **Natural ventilation.** The guidance is deliberately intended to stimulate thinking about the type of ventilation most suited to each particular building, with the emphasis on using natural ventilation where appropriate rather than accepting full air conditioning as the sole choice on offer. No single solution can be applied to all cases. The important point is that in each and every case a critical assessment needs to be made;
- **Floor loadings.** The guidance recommends, as a starting point, a lower floor loading than that which has been customary in Government buildings for quite some time and was therefore reflected, in part, in the industry at large. Equally, the guidance is at pains to stress that this recommendation is not mandatory and needs to be applied with judgement to individual cases. There will be instances where a heavier loading is called for; there may well be others where a lighter one is tolerable. For all schemes, the brief for the building must be clear and the advice of structural engineers must be taken into account. A conscious decision about floor loadings can then be reached in the light of this guidance but without applying a blanket solution.



This guidance is, of course, no substitute for proper professional advice from suitable building/construction professionals. Nor can it replace the need for the right organisation of any scheme, notably the proper integration of all design aspects, and the remit of the project manager to weld designers and other professional/technical agents into a strong and effective team. We hope, however, that it will form a working tool without in any way becoming a straightjacket. The document will continue to be adapted over time in the light of experience.

In response to requests, CAU has now brought together a group of Departmental representatives to consider whether it would be helpful to produce a user brief specifically for PFI office requirements that might supplement 'Writing an Output Specification' issued in October 1996. The guide can probably be used as a quarry to provide a means by which to check the range of outputs which need to be reappraised to fulfil the remit of guidance to the PFI approach.

## INTRODUCTION

### PURPOSE OF DOCUMENTS

The Guide and Schedule to Requirements for Office Buildings is intended for those involved in the procurement of office buildings, be it via new build, refurbishment or lease procurement routes, with a level of standards that may be considered as suitable from any scheme. These are not the minimum criteria, but those which should be considered in any scheme in order to deliver flexibility, environmental sensitivity and energy efficiency.

### FORMAT OF DOCUMENTS

**The Guide to Requirements for Office Buildings.** This is a handbook for those discharging Departments' client responsibility. It sets out on the left side of each page the key requirements which normally ought to be incorporated, or at the very least thought about. The requirements are grouped under subject headings which in the main follow chronologically the order of construction. The right hand of each page explains in outline the reasons for the requirements.

**The Schedule of Requirements for Office Buildings.** This is a checklist to be used in commissioning agents. It repeats the actual requirements in the Guide (but not the reasons for them), and leaves space for the agent or developer to respond to each one. The response should signify, as the case may be, agreement to provide; agreement not to provide; agreement to provide but with variation (with text of the variation to be inserted); or non applicability.

The Guide and Schedule do not replace the need for competent professional and/or technical input at appropriate stages of any scheme. They do not purport to be either a technical specification or a design brief, both of which are required in separate form for each individual scheme.

### LEGAL STIPULATIONS

These documents assume that Departments and their agents will comply with all relevant stipulations, whether set out in relevant acts, Regulations or Approved Codes of Practice. The text does not, therefore, refer specifically to such legislative requirements or to standards except where:

- a choice of standards may exist (eg. fresh requirements to CIBSE standard)
- a Health and Safety requirement needs to be emphasised; or
- quotation of the appropriate standard avoids the need for detailed description (eg hot water storage and distribution temperatures to comply with HSE guidance).

## **USE OF DOCUMENTS**

In general, requirements are not repeated in more than one section of the Guide or Schedule. Extensive cross-referencing has been avoided on the grounds that it seems more likely to confuse than assist. This means, however, that users may need to consider the content of each of the documents as a whole, and should avoid interpretation of any one section in isolation from others. This is essential to achieve a fully integrated design.

## **PHILOSOPHIES EMBODIED IN THE REQUIREMENTS**

### **COMPLIANCE WITH STANDARDS**

A general note requires compliance with all relevant statutory or mandatory Regulations or Standards. Generally, the text does not refer to such Regulations or Standards specifically. Exceptions to this general rule occur where a choice of standards may exist, where a health and safety requirement needs to be emphasised or where quotation of the appropriate standard avoids the need for detailed description.

### **FLEXIBILITY OF ACCOMMODATION**

Many of the requirements are aimed at providing flexibility of accommodation. The intention is to provide general office accommodation and services suitable for a wide range of Government Departments whilst retaining commercial viability in the private sector.

### **INTEGRATED DESIGN**

It is essential that all of the various aspects of the design are co-ordinated carefully to ensure that no aspect negates or adversely affects any other; thus reducing the overall effectiveness of the development. It is also essential that the input from the various disciplines and design team members are co-ordinated under the auspices of a project co-ordinator or similar appointee.

### **ENVIRONMENTAL FRIENDLINESS**

The requirements of the Guide are aimed at minimising the impact of office buildings on the global environment as well as providing a suitable environment for occupants. The document refers to the Building Research Establishment Environmental Assessment Method (BREEAM), the need to avoid environmentally damaging substances and the depletion of non-renewable resources.

### **ENERGY CONSERVATION**

Allied to the environmental considerations is the need to provide high standards of energy conservation and reduction of CO<sub>2</sub> emissions.

One of the aims is to avoid wherever practicable the need for accommodation which relies on full air conditioning. This is reflected in requirements which encourage designs incorporating "passive" techniques to achieve a satisfactory internal environment.

## **DESIGN BRIEF**

The Schedule and Guide to Requirements are necessarily broadly based documents and it must be understood that a specific design brief and/or particular specification will need to be prepared and issued for each individual project.

**SECTION 1**  
**GENERAL MATTERS**

# SECTION 1

## GENERAL MATTERS

The Developer or Project Manager must comply with all relevant and current statutory instruments, regulations and the requirements of all statutory and regulating authorities

| REQUIREMENT   | COMMENT   |
|---|---|
| <p><b>1.1 PURPOSE</b></p> <p><b>1.1.1</b> The purpose of this document is to define for project managers in Crown Build developments and developers (including developer's agents and designers) in Private Developer Scheme developments, the requirements in respect of office developments for the Government estate.</p> <p><b>1.1.2</b> The document is necessarily expressed in broadly based terms so as to reflect the differing requirements of occupying Departments and should not be regarded as a definitive design brief or particular specification, the preparation of which, is required in a separate form for each individual development.</p> <p><b>1.1.3</b> A number of terms used in the document refer to Government Departments or appointees and a definition of these is provided at <a href="#">section 1.3</a>.</p> <p><b>1.1.4</b> Whilst written primarily in respect of new developments the document may also be used to evaluate, and/or form part of agreements to lease or purchase, existing or refurbished accommodation.</p> | <p>To clarify the intent of the document.</p>   |
| <p><b>1.2 FORMAT AND USE</b></p> <p><b>1.2.1</b> This schedule of requirements takes the form of a reactive document in which the developer or project manager must signify agreement or otherwise to each and every paragraph by entering an appropriate response in the 'provision' column as follows:-</p> <ul style="list-style-type: none"> <li>• Agreed</li> <li>• Not applicable</li> <li>• Varied (insert text of variation)</li> <li>• Not provided</li> </ul>   | <p>To provide an indication of how the project proposals compare with the required standards.</p> |

| REQUIREMENT   | COMMENT  |
|---|--|
| <p><b>1.2 FORMAT AND USE (CONT'D)</b></p> <p><b>1.2.2</b> The schedule of requirements and the Client's design brief and/or particular specification/ schedules should be carefully assessed prior to completion of this document and the responses should accurately reflect the requirements of the project brief.</p> <p><b>1.2.3</b> It is assumed the document will not cover all aspects of every project and if there is a requirement to give further information, this should be provided in the form of addendum sheets cross referenced to the relevant part of this document.</p> <p><b>1.2.4</b> The document, complete with the developer's or project manager's responses and any addendum information, will be bound into the legal documentation forming the development agreement or part of the project brief.</p> <p><b>1.2.5</b> Subsequent variations to the document will only be permitted with the prior written approval of the Client. Any request to vary the requirements must be sought in writing at as early a stage as possible.</p> | <p>To ensure a formal record is available to confirm the developer's or project manager's responsibilities in respect of the stated requirements.</p> <p>To provide an acceptable change control mechanism where there may be a reason to vary previously agreed provisions.</p> |
| <p><b>1.3 DEFINITIONS</b></p> <p><b>1.3.1</b> For the purposes of interpretation of this document the definitions of the main parties involved in the project are:</p> <ul style="list-style-type: none"> <li>• CLIENT            The Government Department responsible for initiating and controlling the project.</li> <li>• TENANT OR PURCHASER    The Secretary of State for the Environment Transport and the Regions on the Civil Estate.</li> </ul>  | <p>To clarify the various terms used in the text.</p>  |



| REQUIREMENT   | COMMENT |
|---|---------|
| <p data-bbox="183 436 778 510"><b>1.3 DEFINITIONS (CONT'D)</b></p> <ul style="list-style-type: none"> <li data-bbox="268 546 778 770">• PROJECT SPONSOR A Client representative to act as the sole formal point of contact for the project under the terms of HM Treasury PPD's Guidance Note 33 for Project Sponsorship.</li> <li data-bbox="268 806 778 869">• OCCUPYING DEPARTMENT The users of the building.</li> <li data-bbox="268 904 778 1003">• PROFESSIONAL ADVISOR A consultant appointed to oversee and safeguard the Client's interests.</li> <li data-bbox="268 1039 778 1294">• FIRE CONSULTANT A Client appointee responsible for overseeing and ensuring compliance with the fire standards applicable on the Government estate to enable Government certification.</li> <li data-bbox="268 1330 778 1998">• DEVELOPER The person or company entering into an agreement with the Client to provide accommodation complying with the requirements detailed in this and other relevant contract documents.<br/><br/>In terms of the Development Agreement the Client is the Government Department responsible for initiating and controlling the project.<br/><br/>In terms of the Construction (Design and Management) Regulations 1994, the client is deemed to be the Developer.</li> </ul> |         |

| REQUIREMENT   | COMMENT  |
|---|--|
| <p><b>1.3 DEFINITIONS (CONT'D)</b></p> <ul style="list-style-type: none"> <li>• PROJECT MANAGER      The person or company responsible for managing the project on behalf of the Client.</li> <li>• DESIGN TEAM              Professional design consultants and support staff responsible for the design.</li> </ul> <p><b>1.4 REGULATIONS</b></p>   |  |
| <p><b>1.4.1</b> In existing buildings, the Health and Safety file, if one exists, should be consulted and taken account of and updated in conformity with the CDM Regulations. The developer or project manager should note that although the development is for occupation by a Government Agency or Department there will be no Crown immunity from obtaining statutory authority permissions and approvals.</p> <p><b>1.4.2</b> The developer or project manager must comply with all relevant and current statutory instruments, regulations and the requirements of all statutory and regulating authorities.</p> <p><b>1.4.3</b> In addition to any statutory permissions and approvals, for fire certification purposes, the developer/project manager will directly or indirectly have to consult with the relevant Crown Certifying Authority, which for England and Wales is: The Home Office Crown Premises Inspection Group, for Scotland : The Scottish Office Fire Service Inspectorate and the Department of Economic Development in Northern Ireland.</p> | <p>To ensure a standard no less than that of a building without Crown immunity, and to preserve the 'sell on' potential in the private sector.</p> |

| REQUIREMENT  | COMMENT |
|--|---------|
| <p data-bbox="181 434 780 510"><b>1.4 REGULATIONS (CONT'D)</b></p> <p data-bbox="181 544 783 779"><b>1.4.4</b> A representative list, <u>for the purposes of illustration only</u>, is given below, but it is not exhaustive and it is the responsibility of the developer/project manager to identify and ensure compliance with all applicable regulations and to obtain all necessary permissions and approvals:</p> <ul data-bbox="268 801 746 1608" style="list-style-type: none"> <li>• The Construction (Design and Management) Regulations 1994;</li> <li>• The Health and Safety at Work Act and all associated relevant regulations;</li> <li>• The Building Regulations;</li> <li>• The Clean Air Act;</li> <li>• E.C. Regulations and associated Codes of Practice to implement EC Directives eg. the 'six pack';</li> <li>• Local Authority Byelaws;</li> <li>• Local Planning Authority Requirements;</li> <li>• Local Authority and other Byelaws applicable to the site area;</li> <li>• The Electricity at Work Regulation and memorandum of guidance;</li> <li>• The Model Water Byelaws;</li> <li>• The Fire Precautions Act; and</li> <li>• The Disability Discrimination Act.</li> </ul> <p data-bbox="181 1637 783 2007"><b>1.4.5</b> Copies of all certificates and approval documents shall be provided to the Client's Professional Advisor as a record of compliance and for retention and future reference, either as they are obtained or not later than at Practical Completion. Include any letters of release of conditions attached to any of the above. All conditions must be satisfied and letters obtained from the relevant authority confirming tolerance so that no liabilities remain with the occupier on occupation of the building.</p> |         |

| REQUIREMENT   | COMMENT  |
|---|--|
| <p data-bbox="181 434 778 510"><b>1.5 FIRE POLICY</b></p> <p data-bbox="181 544 778 712"><b>1.5.1</b> In addition to the requirement <a href="#">under 1.4</a> to comply with all regulations (including fire regulations) the requirements of the current issue of PACE CAU's Crown Fire Standards shall also be complied with.</p> <p data-bbox="181 734 778 1043"><b>1.5.2</b> The fire Certification Authority for Crown Occupied premises is the Home Office Crown Premises Inspection Group for England and Wales, the Scottish Office Fire Inspectorate for Scotland and the Department of Economic Development for Northern Ireland. The developer/project manager will have to liaise either directly or via the Client's Professional Advisor with the relevant Certifying Authority.</p> <p data-bbox="181 1081 778 1158"><b>1.6 RELATED STANDARDS</b></p> <p data-bbox="181 1189 778 1525"><b>1.6.1</b> The developer/project manager should note in addition to the requirements in respect of compliance with regulations that design standards, calculations, methods of construction, standards of workmanship, materials, components and the testing and commissioning of components and systems should, as a minimum, be in accordance with the recommendations set out in the latest edition of the following:</p> <ul data-bbox="268 1552 778 1928" style="list-style-type: none"> <li>• British Standard Specifications and Codes of Practice or an alternative national technical specification of any member state of the European Community which in use is equivalent;</li> <li>• The I.E.E Wiring Regulations (BS.7671);</li> <li>• The C.I.B.S.E Guides, Codes and Technical Memoranda; and</li> <li>• H.S.E Approved Codes of Practice and guidance.</li> </ul> | <p data-bbox="810 544 1366 611">To ensure a satisfactory fire safety standard during construction and during occupation after handover.</p> <p data-bbox="810 1189 1326 1256">To ensure recognised authoritative standards are adopted during design and construction.</p> |

| REQUIREMENT   | COMMENT  |
|---|--|
| <p><b>1.6 RELATED STANDARDS (CONT'D)</b></p> <p><b>1.6.2</b> The detailed requirements identified in subsequent sections do not generally refer specifically to these documents but there are exceptions where either a choice of standards exist, where a health and safety requirement needs to be emphasised or where mention of a specific standard avoids the need for detailed description.</p> <p><b>1.6.3</b> The detailed requirements identified in subsequent sections are, in all cases, in addition to the minimum requirements of the above standards.</p>  |  |
| <p><b>1.7 QUALITY ASSURANCE &amp; CERTIFICATION</b></p> <p><b>1.7.1</b> The use of quality assured consultants, contractors and suppliers is preferred. Products and materials should have product conformity certification (eg., BSI Kitemark, BSI Safety Mark or CARES Scheme), or product approval (eg., British Board of Agreement Certificate).</p> <p><b>1.7.2</b> In the case of consultants or contractors engaged by a Government Department or their agents, such consultants or contractors should preferably be selected from the Government's National Qualification Scheme (NQS) - Construction line.</p> | <p>To encourage the use of firms who have recognised systems to ensure a consistent quality standard and to ensure the use of materials and products of an appropriate standard.</p> |

| REQUIREMENT  | COMMENT   |
|--|---|
| <p data-bbox="181 434 780 510"><b>1.8 SELECTION OF MATERIALS</b></p> <p data-bbox="181 544 780 712"><b>1.8.1</b> Care should be taken in the selection of materials and the manner in which they are used to avoid hazards to the health and safety of occupants and to ensure long term structural integrity.</p> <p data-bbox="181 734 780 936"><b>1.8.2</b> Reference should be made to <a href="#">Section 3 of this document</a>, EEC and local legislation and Departmental procedures. Materials should be selected by reference to BCO/BPF guide 'Good Practice in the Selection of Construction Materials' by Ove Arup &amp; Partners.</p> <p data-bbox="181 958 780 1249"><b>1.8.3</b> The use of the following materials, components or systems is strongly discouraged:</p> <ul data-bbox="268 1048 780 1249" style="list-style-type: none"> <li>• Materials emitting environmentally damaging gases where alternatives, less damaging to the environment, are readily available;</li> <li>• Magnetic water softeners; and</li> <li>• PVC twin and earth wiring systems.</li> </ul> <p data-bbox="181 1272 780 1507"><b>1.8.4</b> If the developer/project manager used or plan to use any of the above then this shall be specifically identified in the "provision" column. If no entry is made or the word "agreed" is entered this will mean that the developer/project manager agree that material, component or system will not be incorporated.</p> | <p data-bbox="810 1272 1398 1373">To ensure discouraged items are not used unless the Client wishes to accept the associated disadvantage or risk as appropriate.</p> |

| REQUIREMENT  | COMMENT  |
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| <p data-bbox="181 434 778 510"><b>1.9 DESIGN PHILOSOPHY/BUILDING LIFE</b></p> <p data-bbox="181 544 778 645"><b>1.9.1</b> The basic philosophy is that the project should provide a building suitable in all respects for the purpose for which the Client requires it.</p> <p data-bbox="181 667 778 869"><b>1.9.2</b> In broad terms the building must fully satisfy the requirements of the design brief while being capable in all respects of providing a working environment which is pleasant, environmentally friendly, energy conserving and maintenance minimised.</p> <p data-bbox="181 891 778 992"><b>1.9.3</b> Assessment of alternative designs should be carried out to ensure the most cost effective overall solution consistent with these objectives.</p> <p data-bbox="181 1014 778 1216"><b>1.9.4</b> Emphasis should be placed wherever possible on adopting durable low maintenance materials, maximising the use of daylight and natural ventilation and avoiding over complicated design features or systems which are expensive to operate and maintain and costly to replace.</p> <p data-bbox="181 1238 778 1485"><b>1.9.5</b> Designs should be fully and carefully co-ordinated to ensure no aspect negates or adversely affects any other and particular care should be exercised to integrate designs for engineering systems at an early stage taking due account of the fabric, location, orientation and operational characteristics of the building.</p> <p data-bbox="181 1507 778 1675"><b>1.9.6</b> The developer/project manager should ensure that a member of the design team is appointed as the person responsible for co-ordination of all the various design inputs throughout the development of this project.</p> <p data-bbox="181 1697 778 1899"><b>1.9.7</b> The building should be designed to operate effectively and efficiently throughout its design life and materials and components carefully selected with due consideration to their individual life cycles relative to the overall design life of the building.</p> | <p data-bbox="810 667 1374 768">To provide a building which will meet the occupier's requirements whilst being pleasant to work in and efficient in use.</p> <p data-bbox="810 891 1326 958">To ensure the design provides the best possible solution at a reasonable cost.</p> <p data-bbox="810 1014 1374 1149">To encourage designers to consider revenue consequences and enable the building to be readily understood by an appropriate grade of maintenance personnel.</p> <p data-bbox="810 1238 1406 1373">To ensure an overview of design and to avoid delays in construction due to lack of design co-ordination between the various specialist system designers and to avoid any possible problems in use.</p> <p data-bbox="810 1507 1326 1574">To ensure a properly defined single point of responsibility is established throughout all stages.</p> <p data-bbox="810 1697 1406 1865">To provide a building which uses materials which have been selected to match the building life thus minimising expense in replacement or unnecessary initial expense in a building with a short life, for example refurbishment works.</p> |

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| <p data-bbox="181 434 778 544"><b>1.9 DESIGN PHILOSOPHY/BUILDING LIFE (CONT'D)</b></p> <p data-bbox="181 573 778 707"><b>1.9.8</b> In particular items should not be incorporated which require premature replacement by virtue of their dependance on, or relationship to, another element having a shorter design life.</p> <p data-bbox="181 730 778 864"><b>1.9.9</b> Under no circumstances must the building have an overall design life shorter than the period of any lease entered into between the Client and the developer/project manager.</p> <p data-bbox="181 887 778 1088"><b>1.9.10</b> The anticipated life of the following elements based on these being regularly maintained in accordance with the procedures defined in the maintenance manual for the development, should be indicated either in the 'provision column' or an addendum page:</p> <ul data-bbox="268 1111 778 1760" style="list-style-type: none"> <li>• Building Structure;</li> <li>• Roofs;</li> <li>• External Walls or Cladding Systems;</li> <li>• Windows;</li> <li>• Raised Access Flooring Systems;</li> <li>• Floor Coverings;</li> <li>• Engineering Plant Items;</li> <li>• Electrical Distribution Systems;</li> <li>• Engineering Terminals or Fittings;</li> <li>• Roads and Paving;</li> <li>• External Hardstanding and Access Roads; and</li> <li>• Foul and Surface Water Drainage Systems.</li> </ul> <p data-bbox="181 1783 778 1984"><b>1.9.11</b> The developer/project manager may be required to produce either a "shell and core" building or one incorporating the occupational services (ie., a fully fitted out building). In either case designs should take full account of all the requirements of the occupying Department.</p> | <p data-bbox="810 730 1414 864">To ensure the Client is not leasing a building which will cease to be viable before the end of the lease, or which may involve expensive delapidation works at termination.</p> <p data-bbox="810 887 1414 1066">To provide information for planned maintenance budgets to be formulated and to enable assessments of value for money to be made on a 'present worth' or similar time and interest related basis, and to give an indication of the resulting cost in use of the building.</p> <p data-bbox="810 1760 1414 1850">To ensure the building will be able to be adopted for use by the occupying Departments without modification costs being incurred.</p> |



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| <p data-bbox="183 436 778 510"><b>1.10 PROJECT DESIGN TEAM</b></p> <p data-bbox="183 544 778 779"><b>1.10.1</b> Professionally qualified and suitably experienced design consultants should be engaged in all disciplines. Consultants should be responsible for the design and development of the project including site monitoring, Construction (Design and Management) Regulations 1994, handover procedures and defects liability period.</p> <p data-bbox="183 801 778 936"><b>1.10.2</b> The consultancy commissions should remain in force until satisfactory completion of any remedial works identified at the end of maintenance period.</p> <p data-bbox="183 958 778 1093"><b>1.10.3</b> Details of the consultancy commissions should be declared by entering the information requested at the end of this section. The details are not required to disclose fee information.</p> <p data-bbox="183 1115 778 1249"><b>1.10.4</b> It is anticipated that additional design consultants may be employed on certain developments, and a separate sheet should be completed and inserted for any such consultant.</p> <p data-bbox="183 1272 778 1619"><b>1.10.5</b> All consultants employed on the project should be in possession of professional indemnity insurance (PII) sufficient to cover liabilities arising from the works, and should undertake to maintain this cover for the following periods from the date of discharge or determination of their commissions:</p> <ul data-bbox="263 1534 710 1619" style="list-style-type: none"> <li>• 6 years (for contracts under hand); or</li> <li>• 12 years (for contracts under seal).</li> </ul> <p data-bbox="183 1641 778 1742"><b>1.10.6</b> The Client will have the right to satisfaction as to the adequacy of cover and copies of current PII certificates should be provided.</p> <p data-bbox="183 1765 778 1865"><b>1.10.7</b> Sub-consultants will be required to enter into an approved collateral warranty agreement with the Client.</p> | <p data-bbox="810 544 1377 645">To ensure that the development will be designed by professional designers skilled in their relevant design discipline.</p> <p data-bbox="810 801 1393 936">Details of the proposed designers and the extent of their individual commissions are useful when assessing alternative offers and in assessing appropriate design background and experience.</p> <p data-bbox="810 1641 1377 1709">To establish that adequate levels of PII exist to cover potential liabilities.</p> <p data-bbox="810 1765 1393 1832">To establish a contractual link between the Client and the consultant.</p> |

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| <p data-bbox="183 434 780 510"><b>1.10 PROJECT DESIGN TEAM (CONT'D)</b></p> <p data-bbox="183 544 780 712"><b>1.10.8</b> The developer/project manager should disclose full information concerning all insurances and collateral warranties in respect of the project including those of the design team and contractors.</p> <p data-bbox="183 734 780 835"><b>1.10.9</b> Confirmation of payment of insurance premiums should be provided at renewal dates occurring during the contract period.</p> <p data-bbox="183 857 780 1059"><b>1.10.10</b> The developer/project manager should ensure that all consultants and sub-consultants receive a copy of this document and are fully aware of all requirements together with those of any associated design brief or particular specification for the project.</p> <p data-bbox="183 1081 780 1283"><b>1.10.11</b> In the case of Private Developer Schemes the developer shall be deemed to be <b>the “client” under the Construction (Design and Management) Regulations 1994. Compliance with all aspects of CDM Regulations 1994 will be the developer’s responsibility.</b></p> <p data-bbox="263 1305 780 1574"><b>Project Manager</b> Name:<br/><br/>Address:<br/><br/>Tel No.:<br/>Extent of Commission:</p> <p data-bbox="263 1641 780 1910"><b>Architect</b> Name:<br/><br/>Address:<br/><br/>Tel No:<br/>Extent of Commission:</p> | <p data-bbox="810 544 1394 611">It is essential that copies of all the collateral warranties are held by the Client.</p> |

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| <p data-bbox="183 432 780 510"><b>1.10 PROJECT DESIGN TEAM (CONT'D)</b></p> <p data-bbox="264 544 558 577"><b>Quantity Surveyor</b> Name:</p> <p data-bbox="485 613 579 647">Address:</p> <p data-bbox="485 719 574 752">Tel No.:</p> <p data-bbox="485 772 730 806">Extent of Commission:</p> <p data-bbox="264 882 558 947"><b>Civil/Structural Engineer</b> Name:</p> <p data-bbox="485 949 579 983">Address:</p> <p data-bbox="485 1055 574 1088">Tel No.:</p> <p data-bbox="485 1108 730 1142">Extent of Commission:</p> <p data-bbox="264 1218 478 1283"><b>Mechanical/ Electrical Engineer</b> Name:</p> <p data-bbox="485 1285 579 1319">Address:</p> <p data-bbox="485 1391 574 1424">Tel No.:</p> <p data-bbox="485 1444 730 1478">Extent of Commission:</p> <p data-bbox="264 1554 416 1619"><b>Public Health Engineer</b> Name:</p> <p data-bbox="485 1621 579 1655">Address:</p> <p data-bbox="485 1727 574 1760">Tel No.:</p> <p data-bbox="485 1780 730 1814">Extent of Commission:</p> |         |

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| <p data-bbox="181 434 780 510"><b>1.10 PROJECT DESIGN TEAM (CONT'D)</b></p> <p data-bbox="264 544 387 607"><b>Planning Supervisor</b></p> <p data-bbox="485 544 560 573">Name:</p> <p data-bbox="485 613 579 642">Address:</p> <p data-bbox="485 719 576 748">Tel No.:</p> <p data-bbox="485 772 724 801">Extent of Commission</p> <p data-bbox="264 880 351 909"><b>Others</b></p> <p data-bbox="485 880 560 909">Name:</p> <p data-bbox="485 949 579 978">Address:</p> <p data-bbox="485 1055 576 1084">Tel No.:</p> <p data-bbox="485 1108 730 1137">Extent of Commission:</p>   |  |
| <p data-bbox="181 1173 780 1279"><b>1.11 SUPERVISION AND INSPECTION OF CONSTRUCTION</b></p> <p data-bbox="181 1319 780 1760"><b>1.11.1</b> Where instructed by the Client on a Crown Build project the project manager should provide a full time clerk of works. In the case of PDS Schemes the developer should provide full time clerks of works for the duration of the project capable of supervising and overseeing both building/civil engineering and mechanical/ electrical works. Each appointee should be a member of the Institute of Clerks of Works, or have successfully completed a course of study allied to relevant practical experience that would be appropriate for membership of that Institute.</p> | <p data-bbox="810 1319 1398 1382">To ensure a satisfactory standard of supervision during construction.</p> <p data-bbox="810 1424 1414 1592">It should be noted that independent specialist supervisors acting on behalf of the Client (the Department) may need to be appointed on larger projects, in addition to those provided by the developer or project manager.</p> |

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| <p data-bbox="183 436 778 544"><b>1.11 SUPERVISION AND INSPECTION OF CONSTRUCTION (CONT'D)</b></p> <p data-bbox="183 577 778 846"><b>1.11.2</b> The Client and any appointed representatives must have free access to the property to inspect the works and will refer all matters of complaint, or otherwise, to the developer/ project manager (or appointed agents) who should respond in writing within ten (10) working days, confirming the remedial action to be taken to rectify any deficiencies or omissions.</p> | <p data-bbox="810 577 1385 678">To safeguard rights of access for inspection purposes and to define the procedure to be followed to rectify defects noted during inspection.</p> |

**SECTION 2**  
**SITE**

The Developer or Project Manager must comply with all relevant and current statutory instruments, regulations and the requirements of all statutory and regulating authorities

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| <p><b>2.1 SITE SELECTION</b></p> <p><b>2.1.1</b> The site should be selected so as to match the Client's needs as closely as possible. In many cases it may not be possible to select a site which suits these needs exactly but care must be exercised in analysing alternatives to arrive at the best overall selection based on the Client's design brief and the succeeding sections.</p> <p><b>2.2 LOCATION</b></p> <p><b>2.2.1</b> The Client's needs regarding location should be addressed in both general and particular terms, for example:</p> <ul style="list-style-type: none"> <li>• General geographical location (region, county etc);</li> <li>• Urban/Rural;</li> <li>• Sub-location (city centre, civic centre, inner suburban, outer suburban, office park etc); or</li> <li>• Particular location (main street, side street, single/multiple occupancy etc).</li> </ul> <p><b>2.2.2</b> The impact on the local community and the wider environment should be considered and assessed. In particular for new-build developments the re-development of existing building sites is preferred to 'green field' locations.</p> <p><b>2.3 SIZE, PLOT RATIO AND USE</b></p> <p><b>2.3.1</b> The site under consideration should be of adequate size to accept the development in the preferred form taking account of all requirements including the building footprint, orientation, access, on site parking, requirements for future expansion etc.</p> | <p>To minimise adverse affects on local communities and to demonstrate the Government's commitment to safeguarding the environment.</p> <p>To ensure that only sites of a suitable size are taken with Crown ownership or leased for use by Government Departments.</p> |

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| <p data-bbox="181 434 780 510"><b>2.3 SIZE, PLOT RATIO AND USE (CONT'D)</b></p> <p data-bbox="181 544 655 573"><b>2.3.2</b> Care should be exercised to ensure:</p> <ul data-bbox="268 595 759 745" style="list-style-type: none"> <li>• Planning restrictions have been fully considered; and</li> <li>• The area under consideration is zoned for use appropriate to the development.</li> </ul> <p data-bbox="181 779 780 855"><b>2.4 ADJOINING STRUCTURES</b></p> <p data-bbox="181 889 772 987"><b>2.4.1</b> The effect of adjoining structures on the proposed development (and vice-versa) should be carefully evaluated with particular regard to:</p> <ul data-bbox="268 1010 767 1442" style="list-style-type: none"> <li>• Foundations;</li> <li>• Party Walls;</li> <li>• Security;</li> <li>• Design Efficiency (eg, shading, wind venturi effects etc.);</li> <li>• Rights of Light;</li> <li>• Rights of Support;</li> <li>• Construction Noise and Vibration; and</li> <li>• Offensive Emissions.</li> </ul> <p data-bbox="181 1532 791 1608"><b>2.5 ACCESS</b></p> <p data-bbox="181 1641 777 1807"><b>2.5.1</b> The development should have adequate access arrangements for both pedestrian and vehicular traffic including suitable provisions for access by the emergency services, delivery and refuse disposal vehicles.</p> <p data-bbox="181 1830 783 1964"><b>2.5.2</b> The access arrangements should comply with all local authority requirements in respect of road widths, adjacent parking restrictions, traffic signals, roadway adoption, external lighting.</p> | <p data-bbox="810 544 1401 611">To ensure no obstacles to the development of the site, such as rights of way, archaeological digs etc.</p> <p data-bbox="810 889 1406 987">To advise designers to consider the problems of nearby buildings in terms of the effects both on the development and the neighbouring property.</p> <p data-bbox="810 1010 1398 1039">To identify agreements, responsibilities and restrictions.</p> <p data-bbox="810 1171 1169 1200">To avoid unacceptable limitations.</p> <p data-bbox="810 1310 1409 1377">To identify restrictions in design which may affect future extensions.</p> <p data-bbox="810 1420 1302 1518">To avoid complaints from owners of adjoining properties and potential claims for damages.<br/>To avoid health and welfare problems.</p> <p data-bbox="810 1641 1342 1709">To ensure the site can be adequately accessed for operational, maintenance or emergency reasons.</p> <p data-bbox="810 1830 1402 1897">To ensure satisfactory standards and enable restrictions to be identified and costs assessed.</p> |



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| <p><b>2.5 ACCESS (CONT'D)</b></p> <p><b>2.5.3</b> Where necessary, permanently marked pedestrian crossings should be arranged on site roadways to facilitate safe road crossing by staff and visitors.</p>   | <p>For safety reasons.</p>   |
| <p><b>2.6 TRANSPORT AND PARKING</b></p> <p><b>2.6.1</b> The site should be adequately served by public transport services and on site parking should be provided to suit the Client's requirements and the planning authority.</p> <p><b>2.6.2</b> Where off site parking in whole or part is necessary suitable adjacent parking facilities should ideally be available in close proximity to the site.</p> <p><b>2.6.3</b> The environmental impact of peak flows of pedestrians and vehicles entering/egressing the site must be assessed in relation to the whole neighbourhood.</p> | <p>For the benefit of staff and visitors.</p>  |
| <p><b>2.7 PHYSICAL CHARACTERISTICS</b></p> <p><b>2.7.1</b> The physical characteristics of the site should be carefully assessed to ensure suitability for the intended purpose. Particular attention should be paid to the following:</p> <ul style="list-style-type: none"> <li>• Existing use;</li> <li>• Previous uses;</li> <li>• Airborne pollution;</li> <li>• Ambient noise levels;</li> <li>• Likelihood of subsidence;</li> <li>• Likelihood of flooding;</li> <li>• Existing services both above and below ground;</li> </ul>   | <p>To assess the costs and implications of conversion.</p> <p>To assess adverse factors (eg., landfill, chemicals etc.).</p> <p>To avoid staff health or operational problems.</p> <p>To ensure operational use is not disturbed.</p> <p>To provide an accurate assessment of factors affecting structural design and stability.</p> <p>To prevent future remedial costs and permit assessment of remedial measures.</p> <p>To assess technical, financial and timing implications associated with re-routing.</p> |

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| <p><b>2.7 PHYSICAL CHARACTERISTICS (CONT'D)</b></p> <ul style="list-style-type: none"> <li>• Soil contamination eg, radon, methane, noxious or hazardous contaminants etc;</li> <li>• Soil conditions and ground bearing capacity;</li> <li>• Mine workings;</li> <li>• Levels;</li> <li>• Extent and type of vegetation and effect on development;</li> <li>• Restrictions including easements, wayleaves, rights of way, preservation orders, archaeological features, heights, rights of light or support and similar matters;</li> <li>• Adjacent structures/vegetation;</li> <li>• Levels of Electromagnetic and Radio frequency interference;</li> <li>• Proximity to land fill sites; and</li> <li>• Air traffic control height restrictions.</li> </ul> | <p>To avoid health problems and assess factors which may chemically affect the structure. Reference to the contaminated land register may be appropriate.</p> <p>To permit an accurate assessment of foundation design/ cost.</p> <p>To ensure cutting and filling costs are considered and the general suitability of the site levels.</p> <p>To assess implications of factors which could affect development.</p> <p>To ensure problems do not arise in the use of the site or which must be considered in developing the designs.</p> <p>To assess costs now and in the future eg, tree roots.</p> <p>To assess suitability - particularly in respect of any sensitive Client equipment eg., computers.</p> |
| <p><b>2.8 NOISE</b></p> <p><b>2.8.1</b> Careful attention should be given to evaluating the effects of noise both on the development from the surroundings and on the environment from the proposed development.</p> <p><b>2.8.2</b> The developer/project manager should ascertain and comply with the requirements of the local Environmental Health Officer concerning the impact of the development on the local community and ensure compliance with maximum permitted boundary noise levels for day and night operation.</p> <ul style="list-style-type: none"> <li>• During construction; and</li> <li>• During occupation.</li> </ul>   | <p>To identify and assess the cost implications of any additional measures which may be necessary.</p> <p>To establish design, construction and operational standards which should be adhered to.</p>   |

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| <p><b>2.8 NOISE (CONT'D)</b></p> <p><b>2.8.3</b> The assessment of the impact on the local community should include evaluation of the effects of noise break out from engineering services plant in both normal operating mode and under emergency or test conditions.</p> <p><b>2.8.4</b> Inside the building in the continuously occupied office areas noise levels due to external sources should not exceed 50 dB(A) for more than 10% of each hour of the working week. (<math>L_{A10}</math>, 1 hour &lt;50 dB for 0730 hours to 1700 hours Monday to Friday).</p> <p><b>2.8.5</b> Where the building relies on natural ventilation to prevent summer overheating this internal noise level applies with windows in the open position.</p> <p><b>2.8.6</b> Where the internal noise level would exceed 50 db(A) for more than 10% of the time between 0730 to 1800 hrs, adjustments to the design should be considered (eg., changes in orientation, location of building on site) or acoustic screening as appropriate should be introduced to ensure an acceptable internal environment.</p> | <p>To ensure noise from the normal running and test running of equipment is considered (eg., routine testing of emergency diesel generators).</p> <p>To establish a standard which is acceptable for general offices.</p> <p>To ensure intrusive noise from outside the building is assessed under appropriate conditions of use.</p> <p>To ensure the acceptable maximum level is not exceeded and to avoid acoustic sealed glazing resulting in the need for mechanical ventilation/air conditioning.</p> |
| <p><b>2.9 UTILITY SERVICES</b></p> <p><b>2.9.1</b> The developer/project manager should ensure that utility services on or adjacent to the site are of adequate capacity to service the development including any future expansion requirements.</p>   | <p>To ensure the development can be adequately serviced both initially and taking account of likely future needs.</p>   |

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| <p data-bbox="183 434 778 510"><b>2.9 UTILITY SERVICES (CONT'D)</b></p> <p data-bbox="183 544 778 678"><b>2.9.2</b> Details of the availability of utility services and any agreements entered into which affect the development should be provided including those relating to:</p> <ul data-bbox="268 701 778 1048" style="list-style-type: none"> <li>• Gas;</li> <li>• Electricity;</li> <li>• Water;</li> <li>• Foul/Surface Water Drainage;</li> <li>• Land Drainage;</li> <li>• Telecommunications; and</li> <li>• Community (District) Heating.</li> </ul> <p data-bbox="183 1081 778 1158"><b>2.10 SURVEYS AND INVESTIGATIONS</b></p> <p data-bbox="183 1191 778 1326"><b>2.10.1</b> The developer/project manager should carry out all necessary general or specialist surveys and investigations of the site to be undertaken to ensure suitability for the intended purpose.</p> <p data-bbox="183 1348 778 1449"><b>2.10.2</b> Copies of all surveys and site investigations should be forwarded to the Client at as early a stage as possible.</p> <p data-bbox="183 1471 778 1639"><b>2.10.3</b> It is the developer's/project manager's responsibility to ascertain the existence of any conditions, restrictions or other adverse factors affecting the suitability of the site or its environs for the proposed use.</p> <p data-bbox="183 1662 778 1897"><b>2.10.4</b> The developer/project manager should complete the details requested in <a href="#">section 2.11</a> and where relevant identify any such conditions, restrictions or other matters affecting the development. Addendum sheets with supporting information should be appended where appropriate.</p> | <p data-bbox="810 544 1430 645">To ensure restrictions and conditions are identified to enable revenue consequences to be properly evaluated and to avoid tariff penalties being imposed.</p> <p data-bbox="810 1191 1430 1326">The availability of existing, local community heating, district heating or other similar schemes should be considered, having regard to energy tariffs on offer as well as continuity of supply over the life of the property.</p> <p data-bbox="810 1662 1430 1695">For evaluation assessment and record purposes.</p> |

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| <p data-bbox="183 432 778 510"><b>2.11 SITE DETAILS</b></p> <p data-bbox="183 544 782 678"><b>2.11.1</b> The developer/project manager should complete the details identified below and where appropriate attach addendum sheets with any relevant supporting information.</p> <p data-bbox="183 701 367 728"><b>2.11.2 General</b></p> <ul data-bbox="268 752 710 1176" style="list-style-type: none"> <li data-bbox="268 752 491 779">• Name of building:</li> <br/> <li data-bbox="268 902 395 929">• Address:</li> <br/> <li data-bbox="268 1048 710 1176">• Planning history:<br/>ie. planning consents, use designations<br/>planning restrictions, states of any<br/>applications etc.</li> </ul> <p data-bbox="183 1198 434 1225"><b>2.11.3 Physical Data</b></p> <ul data-bbox="268 1249 774 1960" style="list-style-type: none"> <li data-bbox="268 1249 402 1276">• Site area:</li> <li data-bbox="268 1301 670 1328">• Number of on site parking spaces:</li> <li data-bbox="268 1352 507 1379">• Description of site:</li> <br/> <li data-bbox="268 1509 730 1574">• Physical Characteristics of site (including<br/>ambient noise level):</li> <br/> <li data-bbox="268 1688 750 1787">• Known restrictions (easements, wayleaves<br/>rights of way, tree preservation orders,<br/>height, archaeological, conservation, etc):</li> <br/> <li data-bbox="268 1901 774 1960">• Previous uses of site and areas of known or<br/>possible contamination:</li> </ul> |         |

| REQUIREMENT   | COMMENT |
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| <p data-bbox="183 436 778 510"><b>2.11 SITE DETAILS (CONT'D)</b></p> <p data-bbox="183 544 526 577"><b>2.11.4 Adjoining Structures</b></p> <ul data-bbox="268 595 678 772" style="list-style-type: none"><li data-bbox="268 595 678 629">• Description of adjoining structures:</li><br/><li data-bbox="268 741 678 772">• Restriction Imposed:</li></ul> <p data-bbox="183 891 351 925"><b>2.11.5 Access</b></p> <ul data-bbox="268 943 630 1413" style="list-style-type: none"><li data-bbox="268 943 630 976">• Description (incl. road widths):</li><br/><li data-bbox="268 1093 630 1126">• Adjacent parking restrictions:</li><br/><li data-bbox="268 1243 630 1276">• Are access roads adopted?:</li><br/><li data-bbox="268 1393 630 1413">• Pedestrian Access:</li></ul> |         |

| REQUIREMENT   | COMMENT   |
|---|---|
| <p data-bbox="210 450 558 483"><b>2.11 SITE DETAILS (CONT'D)</b></p> <p data-bbox="178 546 456 580"><b>2.11.6 Utility Services</b></p> <p data-bbox="263 600 767 730">Provide details of utility services available on or adjacent to the site and details of any agreements entered into affecting the development.</p> <ul data-bbox="268 757 622 1518" style="list-style-type: none"> <li data-bbox="268 757 347 784">• Gas:</li> <br/> <li data-bbox="268 902 411 929">• Electricity:</li> <br/> <li data-bbox="268 1048 379 1075">• Water:</li> <br/> <li data-bbox="268 1193 403 1220">• Drainage:</li> <br/> <li data-bbox="268 1339 523 1366">• Telecommunications:</li> <br/> <li data-bbox="268 1485 619 1512">• Community (District Heating)</li> </ul> <p data-bbox="178 1637 608 1671"><b>2.11.7 List of Surveys and Reports</b></p> <p data-bbox="263 1691 751 1892">The developer/project manager should list in the provisions column the title and date of all reports concerning site surveys and site investigations identifying the specialist consultancy or company responsible for the preparation of each report.</p> | <p data-bbox="810 1691 1414 1753">To confirm that appropriate surveys and investigations have been undertaken</p> |

**SECTION 3**  
**ENVIRONMENTAL AND ENERGY**  
**CONSERVATION MATTERS**



# SECTION 3

## ENVIRONMENTAL AND ENERGY CONSERVATION MATTERS

The Developer or Project Manager must comply with all relevant and current statutory instruments, regulations and the requirements of all statutory and regulating authorities

| REQUIREMENT  | COMMENT   |
|--|---|
| <div data-bbox="178 528 778 607" style="border: 1px solid black; padding: 2px; margin-bottom: 10px;"> <p><b>3.1 ENVIRONMENTAL AIMS</b></p> </div> <p><b>3.1.1</b> The general policy is to provide a building which is environmentally friendly from the global, local external and internal aspects, and which minimises the impact on the local community. Designers should therefore use their best endeavours to ensure, so far as is reasonably practicable, that the building is designed to address the following:</p> <ul style="list-style-type: none"> <li>• Minimise any negative impact on the local environment and where possible improve it;</li> <li>• Minimise the effect on ozone depletion;</li> <li>• Minimise the effect on global warming;</li> <li>• Minimise air pollution;</li> <li>• Minimise noise pollution;</li> <li>• Minimise water pollution;</li> <li>• Minimise water consumption;</li> <li>• Minimise rainforest depletion;</li> <li>• Minimise non-renewable resource depletion;</li> <li>• Avoid radon contamination;</li> <li>• Control the risk of Legionnaires disease and the spread of Legionella;</li> <li>• Minimise the effects of ionising and electromagnetic radiation;</li> <li>• Assess the use of potential irritants and/or toxic substances;</li> <li>• Avoid design features associated with building related illnesses;</li> <li>• Maximise the opportunity for re-cycling;</li> <li>• Enable planned preventative maintenance regimes to be used to maintain optimum performance.</li> </ul> | <p>To ensure a development which is “environmentally friendly”, safe to work in and economic in use to ensure compliance with COSHH and approved codes of practice.</p> |

| REQUIREMENT   | COMMENT  |
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| <p data-bbox="183 436 778 510"><b>3.1 ENVIRONMENTAL AIMS (CONT'D)</b></p> <p data-bbox="183 544 778 784"><b>3.1.2</b> Developer/project managers are referred to the BRE Environmental Assessment Method (BREEAM documents) and by adopting these methods an assessment of the environmental performance of the project should be produced and handed to the Client at as early a stage as possible.</p> <p data-bbox="183 817 778 891"><b>3.2 ENERGY CONSERVATION</b></p> <p data-bbox="183 925 778 1238"><b>3.2.1</b> The general policy is that the development should be designed and constructed to minimise primary energy consumption. Particular care should be exercised to ensure that energy conservation is addressed in the widest terms and that the design solutions adopted represent an integrated approach to the matter. (See <a href="#">Section 9.2</a> for primary energy considerations).</p> <p data-bbox="183 1261 778 1429"><b>3.2.2</b> The developer/project manager should ensure that window to wall ratios are not excessive and that thermal characteristics are at least those called for in the Building Regulations/ Building Standards.</p> | <p data-bbox="810 544 1396 645">To demonstrate the degree to which the objectives of an environmentally friendly building are likely to be achieved.</p> <p data-bbox="810 925 1396 992">To reduce damaging environmental effects whilst at the same time minimising operational costs.</p> <p data-bbox="810 1216 1396 1283">To reduce fuel consumption, minimise temperature gradients and to conform with recognised standards.</p> |

| REQUIREMENT  | COMMENT  |
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| <p><b>3.2 ENERGY CONSERVATION (CONT'D)</b></p>   |  |
| <p><b>3.2.3</b> Fenestration should be planned to give flexibility of office accommodation with a balance achieved between conditions affecting:</p> <ul style="list-style-type: none"> <li>• Daylighting;</li> <li>• Ventilation;</li> <li>• Solar Gain in Summer;</li> <li>• Solar Gain in Winter;</li> <li>• Conduction Loss in Winter;</li> <li>• Noise Control;</li> <li>• General floor; wall and roof insulation levels;</li> <li>• Views Out;</li> <li>• Privacy;</li> <li>• Elevational Aesthetics; and</li> <li>• Security.</li> </ul> | <p>To ensure that energy conservation measures also take account of other relevant design considerations.</p> <p>The design of windows will depend on building orientation and other aspects dictated by the integrated design approach.</p> <p>The window types and areas will be partly dictated by the need to comply with overall building insulation levels required by the building regulations.</p> |
| <p><b>3.2.4</b> The developer/project manager should evaluate and state in the provisions section opposite the estimated annual energy consumption (kWh/ Sqm) for each primary energy source (eg., gas, electricity, oil or solid fuel). The estimate should be based on an operational period of 10 h per day, 5 days per week, 52 weeks per year using CIBSE prediction techniques.</p>  | <p>To enable a quantitative assessment of operating costs to be made.</p>  |
| <p><b>3.2.5</b> Developers should note that energy consumption values failing to reach the 'good practice' category defined in the Environment Protection Group Guidelines document 'Energy Consumption Guide 19', are unlikely to be acceptable.</p>  | <p>To indicate to designers the general level of acceptability in respect of energy usage.</p>   |

| REQUIREMENT  | COMMENT  |
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| <p data-bbox="181 434 778 544"><b>3.3 BUILDING DESIGN MAXIMUM TEMPERATURE</b></p> <p data-bbox="181 573 778 741"><b>3.3.1</b> Unless specifically requested otherwise in the design brief or particular specification, a naturally ventilated building is preferred to one relying on mechanical ventilation/cooling systems.</p> <p data-bbox="181 768 778 936"><b>3.3.2</b> Where specific areas require close control of temperature and/or humidity (for example IT equipment rooms, computer rooms), such areas should be separately conditioned to achieve the specific performance requirements.</p> <p data-bbox="181 963 778 1160"><b>3.3.3</b> The remaining areas of the building should be carefully analysed to ensure satisfactory conditions can be achieved adopting a combination of natural ventilation and passive control techniques (eg., shading, orientation, thermal mass etc.).</p> <p data-bbox="181 1187 778 1384"><b>3.3.4</b> The thermal analysis should be based on internal conditions in continuously occupied areas, not exceeding a maximum temperature of 28°C (at 1.5m level). A maximum design risk (failure rate) of 30 working days (approx. 240 hours) in a 10 year period is acceptable.</p> <p data-bbox="181 1411 778 1921"><b>3.3.5</b> The analysis should take account of all anticipated heat gains and losses including those arising from:-</p> <ul data-bbox="268 1532 778 1921" style="list-style-type: none"> <li>• Occupants;</li> <li>• Electric lighting;</li> <li>• Solar radiation;</li> <li>• Electronic Office Equipment assuming an overall allowance of 10W/sqm of nett office floor space or such higher value as is identified in the design brief;</li> <li>• Infiltration; and</li> <li>• Conduction.</li> </ul> | <p data-bbox="810 573 1390 674">To minimise the capital and operating costs associated with air conditioned buildings and minimise environmental consequences.</p> <p data-bbox="810 730 1342 831">To ensure air conditioning is only provided where needed by correct zoning of the building and the engineering services.</p> <p data-bbox="810 925 1382 981">To ensure correct assessment and avoid the need for mechanical cooling.</p> <p data-bbox="810 1149 1350 1205">To establish a level of acceptability which a non air conditioned building design should achieve.</p> <p data-bbox="810 1659 1414 1783">Where the occupying Department's equipment exceeds 10W/sqm (taking into account diversity and actual versus name plate ratings divergencies), then the increased value should be identified in the design brief.</p> |

| REQUIREMENT   | COMMENT  |
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| <p data-bbox="181 434 778 539"><b>3.3 BUILDING DESIGN MAXIMUM TEMPERATURE (CONT'D)</b></p> <p data-bbox="181 573 783 846"><b>3.3.6</b> The infiltration (ventilation) rate should be assessed adopting the calculation method defined in BS5925 or BRE Digest 210, and assuming windows will be closed in the unoccupied period. Heat gains/losses and the evaluation of resulting internal summertime temperatures should be assessed using CIBSE, or equivalent, prediction techniques.</p> <p data-bbox="181 869 783 1037"><b>3.3.7</b> Where the analysis indicates that in certain areas summer time temperatures would exceed the specified criteria then mechanical ventilation and/or mechanical comfort cooling should be provided to those areas.</p> <p data-bbox="181 1059 783 1160"><b>3.3.8</b> A copy of the summer time temperature analysis should be handed to the Project Sponsor at as early a stage as practicable.</p> <p data-bbox="181 1182 783 1630"><b>3.3.9</b> The incorporation of mechanical ventilation/cooling is dealt with in more detail in <a href="#">Section 9.5</a> of this document but it should be noted that the basis of design should not relate to achieving conditions significantly better than those which would have resulted had natural ventilation been an acceptable solution. In this connection, the adoption of 'mixed mode' systems should be carefully considered (note: mixed mode systems in this context meaning those using natural ventilation for as long as possible before recourse to the operation of mechanical systems).</p> <p data-bbox="264 1653 783 1966">Mechanical ventilation will be included on the basis of supplementing natural ventilation. When assessing the viability of natural ventilation ambient noise shall be considered. The internal noise level shall not exceed 50dB(A) for more than 10% of the time between 0730 to 1800 hrs. If ambient noise levels will cause this to be exceeded, the ventilation and windows should be designed accordingly to allow the building to operate with the windows closed.</p> | <p data-bbox="810 573 1407 696">To establish a suitable method for assessing the amount of ventilation (which assists in limiting the rise in internal temperature in summer warm weather conditions).</p> <p data-bbox="810 869 1398 931">To establish the areas where some form of mechanical ventilation or cooling will be necessary.</p> <p data-bbox="810 1059 1362 1160">To ensure where mechanical ventilation or comfort cooling is needed that the level of design of such systems is not over provided.</p> <p data-bbox="810 1182 1350 1283">To minimise operational costs and reduce primary energy consumption thus limiting environmentally damaging emissions.</p> |

| REQUIREMENT   | COMMENT |
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| <p data-bbox="183 436 778 510"><b>3.4 SMOKING POLICY</b></p> <p data-bbox="183 544 778 678"><b>3.4.1</b> The developer/project manager should be advised by the Client regarding the policy to be adopted regarding smoking, since this will influence a number of design parameters.</p> |         |

# **SECTION 4 PLANNING**

# SECTION 4

## PLANNING

The Developer or Project Manager must comply with all relevant and current statutory instruments, regulations and the requirements of all statutory and regulating authorities

| REQUIREMENT   | COMMENT   |
|---|---|
| <p><b>4.1 FLEXIBILITY OF OCCUPATION</b></p> <p><b>4.1.1</b> The general principle is to provide flexible and re usable office accommodation suitable for as wide a range of occupants as possible. This implies the provision of regular open plan areas capable of sub-division at construction or at a later date to form mixed or cellular accommodation as required.</p> <p><b>4.1.2</b> The developer/project manager should take due cognizance of this requirement when designing Occupational Services (fitting out) works, and ensure that the future flexibility of the accommodation is maintained as far as possible.</p> <p><b>4.1.3</b> Particular attention shall be paid to the location of any serviced areas within the office accommodation eg., tea-points, equipment rooms etc.</p> <p><b>4.1.4</b> The occupational density planning of the building (sq m of nett office floor space per person) must conform with all regulations and be in accordance with the Client's functional requirements as identified in the Client's brief. An occupational density of 1 person per 10 sq m net (excluding stairs, lift, corridor, tea points, WC areas etc.) may be used for initial planning purposes, but exact details should be confirmed with the Client at as early a stage as possible.</p> | <p>To ensure the building can be used in the long term and be capable of being adapted to the changing operational requirements of the occupier, without unnecessary expense.</p> <p>For staff convenience and to ensure flexibility is maintained.</p> |
| <p><b>4.2 DAYLIGHT</b></p> <p><b>4.2.1</b> All office areas should, wherever practicable, have a good standard of natural light and deep planning arrangements, or 'totally internal' rooms which are continuously occupied, should be avoided wherever possible.</p>   | <p>To provide a good working environment and minimise energy consumption from artificial lighting and avoid the need for mechanical ventilation.</p>  |



| REQUIREMENT  | COMMENT   |
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| <p><b>4.2 DAYLIGHT (CONT'D)</b></p> <p><b>4.2.2</b> Daylighting arrangements in normal offices should provide for an average daylight factor of not less than 1.8%. It should be noted however that in certain instances higher standards of daylight may be required (for example in drawing offices). Where such specific accommodation facilities are identified the developer/project manager should provide the enhanced standards as indicated.</p> <p><b>4.2.3</b> Lightwells are not permitted but this does not preclude the use of open or closed atria, or accessible internal open courtyards in low rise developments, to provide improved daylight and/or natural ventilation where appropriate.</p>   | <p>It is essential that the Client identifies any specialist requirements at the outset as they may have serious implications on the design and cost of the building.</p> <p>Lightwells are difficult to maintain and may present a fire hazard.</p>  |
| <p><b>4.3 PRINCIPAL PLANNING DIMENSIONS</b></p> <p><b>4.3.1</b> The preferred internal depth for offices should be based on:</p> <ul style="list-style-type: none"> <li>• Window to window - 15m to 18m;</li> <li>• Window to core - 6m to 12m with 9m preferred;</li> <li>• Deep space to be less than 25%.</li> </ul> <p><b>4.3.2</b> The clear height in office areas from finished floor level to the underside of the lowest point of the ceiling, (or beam soffit if exposed) should be 2.7 m minimum. Where ceilings are provided a minimum clear ceiling void of 300 mm is required, from the top face of the ceiling to the underside of the general structural level.</p> <p><b>4.3.3</b> If it is necessary for the structure to occasionally penetrate this minimum zone (eg., by downstand beams) provisions should be incorporated to enable services within the ceiling void to pass from one side to the other.</p> <p><b>4.3.4</b> This may be achieved by a lower ceiling at toilet, or possibly notional corridor positions or by service holes being provided through the structural downstands.</p> | <p>To enable sensibly proportioned rooms to be provided, avoid excessively wide corridors and enable buildings to be naturally ventilated. Buildings wider than those indicated may adopt natural ventilation but care must be exercised in design to ensure effective ventilation throughout.</p> <p>To provide a reasonable ceiling height for light spread, ventilation and visual harmony and to facilitate the fitting of services or adjustments to services at some future date.</p> <p>To ensure flexibility in accommodating engineering services.</p> |

| REQUIREMENT  | COMMENT  |
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| <p><b>4.3 PRINCIPLE PLANNING DIMENSIONS (CONT'D)</b></p> <p><b>4.3.5</b> Whatever the arrangements the developer/project manager should be able to demonstrate the means by which free passage of services can be achieved at some future stage.</p> <p><b>4.3.6</b> Corridors should have a clear width of 1800 mm (this figure should be treated on a case by case basis considering all aspects including fire aspects) unless otherwise stated. This requirement also applies to notional corridors in open-plan areas.</p> <p><b>4.3.7</b> The partition planning grid should be a derivative of the structural grid and based on the use of 600 mm or 500 mm sq floor and ceiling tiles. The preferred planning grid is 1500mm.</p> <p><b>4.3.8</b> Window mullions against which partitions may be fixed, or window spacing in non continuous arrangements should enable partitions to be fixed at between 1.2 to 1.5 m maximum centres. Windows should be planned so as to provide flexibility of office arrangements without undue waste of floor space. Column grid to be a multiple of the planning grid.</p> | <p>For flexibility in positioning partitions and to retain flexibility for future changes in partition layouts.</p>  |
| <p><b>4.4 ACCESS TO THE BUILDING</b></p> <p><b>4.4.1</b> Vehicular access into the building itself will not normally be a requirement other than for basement car parking or to loading bays where required.</p> <p><b>4.4.2</b> The developer/project manager should provide adequate access facilities for emergency service vehicles and for delivery vehicles to service areas; also, if the delivery point is at the roadside, cognizance of any parking restrictions will need to be taken, and suitable access provided to permit on/off loading of vehicles at any time.</p>   | <p>Unless specific needs arise or there is a requirement from the planning Department, vehicle access within buildings should be avoided on security and fire precaution grounds.</p> <p>To ensure the occupiers can have goods delivered and to provide easy access for emergency vehicles.</p> |

| REQUIREMENT  | COMMENT  |
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| <h4 style="text-align: left; margin: 0;">4.4 ACCESS TO THE BUILDING (CONT'D)</h4>  |  |
| <p><b>4.4.3</b> A minimum number of pedestrian entrances to the building should be provided commensurate with the requirements of the design brief and unless specifically stated, otherwise separate entrance points are required for staff and public. Clear signage should be provided at public entrances.</p>   | <p>For security, ease of management and for staff safety.</p>  |
| <p><b>4.4.4</b> Entrances should not be so recessed as to provide loitering spaces where persons cannot be readily observed.</p>   | <p>For security.</p>   |
| <p><b>4.4.5</b> Easy access to the building should be provided for disabled users and specific requirements in this respect are detailed in <a href="#">Section 5</a>.</p>   | <p>To enable easy access to the building by disabled users.</p>  |
| <p><b>4.4.6</b> Access to on-site car parking facilities should be exclusive to the development and arrangements should be incorporated to prevent public access to staff car parking areas.</p>   | <p>For security.</p>   |
| <h4 style="text-align: left; margin: 0;">4.5 INTERNAL CIRCULATION</h4>   |  |
| <p><b>4.5.1</b> The developer/project manager should carry out an assessment of traffic flows in common areas to ensure selection of optimum circulation patterns to obviate overcrowding and excessive counter flows. The assessment should consider the following points in association with other relevant matters:</p> <ul style="list-style-type: none"> <li>• Safety of the users;</li> <li>• Working patterns;</li> <li>• Location of staff facilities;</li> <li>• Incoming/Outgoing mail and materials;</li> <li>• Security;</li> <li>• Use of "Flexitime" recorders;</li> <li>• Reception/Waiting area usage;</li> <li>• Access to toilet facilities etc.; and</li> <li>• Circulation of trollies etc.</li> </ul> | <p>To ensure that common areas and circulation routes are designed to provide the most effective layout for the proposed use of the building.</p> <p>To ensure that designers have considered traffic flows throughout the building.</p> |

| REQUIREMENT   | COMMENT  |
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| <p><b>4.5 INTERNAL CIRCULATION (CONT'D)</b></p> <p><b>4.5.2</b> The results of the assessment should be presented to the Client at as early a stage as possible.</p> <p><b>4.5.3</b> Access between floors should be by means of enclosed staircases and lifts. Fire Exit stairs are not permitted to be external but should be enclosed by the building envelope.</p> <p><b>4.5.4</b> There should be no direct access to the office areas from toilets, lifts or main staircases all of which should open into common vestibule and lobby areas as appropriate.</p> <p><b>4.5.5</b> Floors on each storey should be on a common level or connected by means of a ramp complying with the Building Regulations.</p> <p><b>4.5.6</b> Stairs and lifts should be so arranged as to prevent the Public gaining access to Staff areas and sufficiently separated to avoid the interference of traffic from each source.</p> <p><b>4.5.7</b> Fire doors across main access corridors should be provided with electro-magnetic door holders to retain the doors in the open position during normal use, except where precluded for security reasons. Door holders must be linked to the fire alarm system to fail closed in the event of an alarm being triggered. Smoke detectors linked into the alarm system must also be provided at these doors to combat the danger of smoke spread.</p> | <p>For legislative reasons in some areas and to increase flexibility for multi purpose use. External fire escapes often have high maintenance consequences.</p> <p>For convenience, flexibility, safety and security and to minimise disruption to staff from pedestrian traffic.</p> <p>To permit passage around the building by disabled users.</p> <p>For the security and safety of the staff.</p> <p>To permit the free passage of trolleys without damaging doors whilst retaining the integrity of fire separation barriers in the event of a fire alert.</p> |
| <p><b>4.6 CAR PARKING</b></p> <p><b>4.6.1</b> On site car parking facilities should be provided to comply with the local Planning Authority requirements as a minimum or to such increased levels as may be requested by the design brief for the development.</p>  | <p>A sensible approach to staff and public car parking should be taken to avoid excessive and costly provisions, however the Local Planning Authority may also impose specific requirements dealing with car parking.</p>  |

| REQUIREMENT  | COMMENT   |
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| <h3 style="background-color: #d9e1f2; padding: 5px;">4.6 CAR PARKING (CONT'D)</h3>   |   |
| <p><b>4.6.2</b> All car parking should be easily accessible to and from the building and provide safe, easily monitored, parking facilities. The developer/project manager should comply with any requirements in the design brief for controlled access, or additional protection to staff parking areas.</p>                       | <p>For safety and security and to permit management/security control of visitors to the building.</p>   |
| <p><b>4.6.3</b> If public car parking is to be provided this should, where possible, be separate from staff parking areas and be provided with separate access.</p>  | <p>For safety and security reasons. It is important that any requirement for separately accessed parking for both staff and public be clearly identified in the Client's brief.</p>   |
| <p><b>4.6.4</b> All parking areas should be able to be locked to prevent unauthorised use.</p>   |   |
| <p><b>4.6.5</b> Parking facilities for disabled users should be provided in accordance with <a href="#">Section 5</a> but general parking should be based on minimum car space of 2.5 m x 5.0 m and clearly marked with traffic paint or other suitable method of delineation.</p>   | <p>To enable the building to be conveniently accessed by disabled users.</p>  |
| <h3 style="background-color: #d9e1f2; padding: 5px;">4.7 FIRE PRECAUTIONS</h3>   |   |
| <p><b>4.7.1</b> The developer/project manager should comply with the requirements of the local fire authority, the Client's fire consultant, and all documents pertinent to their requirements.</p>  |   |
| <p><b>4.7.2</b> All materials and surfaces incorporated in the construction of the development should have the requisite fire resistance, surface spread of flame and other relevant characteristics appropriate to their location and purpose as specified by the above authorities and in accordance with current legislation.</p> | <p>To ensure a safe working environment which will be acceptable to the certifying authority. For Crown Occupied premises the Certifying Authority is the Home Office Crown Premises Inspection Group for England &amp; Wales, the Scottish Office Fire Inspectorate for Scotland and the Department of Economic Development for Northern Ireland. The developer/project manager will have to liaise either directly or via the Client's Professional Adviser with the relevant Certifying Authority.</p> |
| <p><b>4.7.3</b> All floor construction should be non-combustible to separating floor standards with service openings fire stopped or enclosed within protected shafts.</p>   |   |

| REQUIREMENT  | COMMENT  |
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| <p><b>4.7 FIRE PRECAUTIONS (CONT'D)</b></p>  |  |
| <p><b>4.7.4</b> Open stairs between offices, or large openings creating double storey accommodation should generally be avoided. Where atria are a feature of the development then special arrangements as required by the local fire authority and fire consultant should be incorporated including compliance with any related authoritative guidance documents considered suitable for the application by the fire authority and fire consultant.</p> | <p>Double storey height areas are often wasteful in spatial terms and are difficult or costly to adequately protect from fire risks.</p>   |
| <p><b>4.7.5</b> Dry or wet rising mains should be incorporated where required by regulations or approved codes of practice relevant to the development.</p>  | <p>For use by the Fire Brigade only.</p>   |
| <p><b>4.7.6</b> Hydraulic fire hose reels will not normally be required but where these are specifically agreed as being necessary by the fire consultant, the installations should comply with relevant British Standard Specifications and Codes of Practice.</p>  | <p>In general Government policy is that fires should only be fought by trained fire officers. Brigades use their own hoses. The use of raised service floors with electric cabling to office equipment increases the risks of electric shocks and damage from the use of water hose reels.</p> |
| <p><b>4.7.7</b> Detailed requirements in respect of fire alarm and detection systems and portable fire fighting equipment should be provided as required by <a href="#">Section 9</a> of this document.</p>  |  |
| <p><b>4.8 DESIGN ENERGY TARGETS</b></p>  |  |
| <p><b>4.8.1</b> Design energy targeting should be considered at an early stage in design to assist in producing an energy efficient design and to minimise the running costs of the development.</p>   | <p>To ensure the building conserves energy to reduce operating costs and for global environmental reasons.</p>   |
| <p><b>4.8.2</b> Energy targets should be used as initial design aids in situations where the effects of changes in basic building design concept are being investigated.</p>   | <p>Occupying Departments should also assess the effects of energy use on operating cost budgets.</p>   |
| <p><b>4.8.3</b> The energy targets should provide clear objectives for the designer to enable emphasis to be given to the needs of energy conservation and the best method by which this can be achieved.</p>  |  |

| REQUIREMENT  | COMMENT  |
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| <p><b>4.8 DESIGN ENERGY TARGETS (CONT'D)</b></p>   |  |
| <p><b>4.8.4</b> The targets should not however be considered as substitutes for detailed cost in use appraisals of the building design.</p>  |  |
| <p><b>4.8.5</b> Energy target values should be established by the designers and as a minimum should be in accordance with CIBSE recommendations and as otherwise necessary to enable the estimated energy consumption (referred to in <a href="#">Section 3</a>) to be readily achievable.</p> |  |
| <p><b>4.9 SECURITY</b></p>   |  |
| <p><b>4.9.1</b> The security provisions appropriate to developments will vary according to the function of the accommodation and the geographical location.</p>  | <p>The intent of this section is to ensure a safe and secure environment for staff, to preserve confidentiality and to minimise loss and disruption from vandalism and forced entry.</p> |
| <p><b>4.9.2</b> The Client should therefore assess the risks appropriate to the development and the developer/project manager should ensure planning arrangements take due account of the need for a secure building.</p>  | <p>The occupying Department should also assess its own security needs at an early stage.</p>   |
| <p><b>4.9.3</b> Generally the building and its environs should be designed to minimise the potential for any security breaches.</p>  |  |
| <p><b>4.9.4</b> There should be as few "loitering spaces" as possible with a view to reducing the potential for illegal entry, vandalism and attack of staff or public.</p>  |  |
| <p><b>4.9.5</b> Consideration should be given to floodlighting the development as a deterrent and careful attention paid to the design and placement of exterior lighting in parking areas, access ways and general landscaped areas.</p>  |  |
| <p><b>4.9.6</b> All windows at ground floor level or readily accessible from the ground should be provided with secure locks.</p>  |  |

| REQUIREMENT   | COMMENT   |
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| <p><b>4.9 SECURITY (CONT'D)</b></p> <p><b>4.9.7</b> All external doors should have a secure method of locking. Special locking arrangements may be required as indicated in the design brief.</p> <p><b>4.9.8</b> Circulation routes and access facilities should be arranged to prevent the public gaining access to staff areas both inside the building and to car parking areas.</p> <p><b>4.9.9</b> If specialist security requirements are called for in the design brief, for example strong rooms, security fencing, CCTV etc., the proposals must be checked with the occupying Department's security advisor.</p> <p><b>4.9.10</b> Further information concerning external lighting, intruder detection systems and personal attack alarms is provided in <a href="#">Section 9</a> of this document.</p> <p><b>4.9.11</b> The need to protect the occupiers and the building fabric from the effects of terrorist attack (eg. bomb blast), and the degree of protection required, should be established at an early stage as possible. Special glazing/anti shatter films/ bomb blast curtaining can have significant financial implications on a project. Any proposals for protection against terrorist attack should be checked with the occupying Department's security advisor.</p> | <p>The design brief should identify any special requirements which may affect design development of the building.</p> <p>To comply with planning legislation.</p> <p>The Client should consider the amenity areas needed.</p> |
| <p><b>4.10 SOFT LANDSCAPING</b></p> <p><b>4.10.1</b> The developer/project manager should make clear any local authority requirements prior to incorporation in the works.</p> <p><b>4.10.2</b> Amenity areas should be considered.</p> <p><b>4.10.3</b> Due regard should be paid to security considerations when designing soft screening.</p>  | <p>To identify relevant factors which must be considered by designers.</p> <p>To avoid damage from oil spillage and facilitate maintenance operations.</p>  |



| REQUIREMENT   | COMMENT   |
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| <p data-bbox="181 434 778 510"><b>4.10 SOFT LANDSCAPING (CONT'D)</b></p> <p data-bbox="181 544 778 674"><b>4.10.4</b> In general, soft landscaping schemes should be simple, functional and designed for ease of maintenance. Particular attention should be given to:</p> <ul data-bbox="268 701 778 1626" style="list-style-type: none"> <li>• Avoiding parked cars overhanging soft landscaped areas necessitating maintenance out of normal working hours, or causing damage by exhaust fumes or overshadowing;</li> <li>• Ensuring direct public access is not impaired by soft landscaping that could quickly succumb to wear;</li> <li>• Existing landscape features such as mature trees, which must have any necessary work on them completed before handover;</li> <li>• Ensuring landscape features do not obstruct access for building maintenance ie., window cleaning, meter access, access to service chambers, fire hydrants etc.;</li> <li>• Exercising care in the selection and placing of trees to avoid future damage to the building, hard standing areas or buried services, from tree roots;</li> <li>• Ensuring that as landscape features fully mature security, safety and the general effectiveness of planning arrangements are not compromised (eg., obstructing light to the building); and</li> <li>• Providing any necessary land drainage and protection against surface erosion.</li> </ul> <p data-bbox="181 1653 778 1816"><b>4.10.5</b> Grassed areas should be formed by cut and weed treated turf. Boundaries should be formed by concrete curbs with paving set 38 mm below turf level and land drainage provided to sumps and soakaways as necessary.</p> | <p data-bbox="810 544 1198 573">For maintenance and safety reasons.</p> <p data-bbox="810 701 1358 763">To minimise damage from people taking short cuts across landscaped areas.</p> <p data-bbox="810 1234 1278 1263">To ensure long term effects are considered.</p> <p data-bbox="810 1384 1278 1413">To ensure long term effects are considered.</p> <p data-bbox="810 1563 1315 1592">To prevent flooding and migration of materials.</p> <p data-bbox="810 1653 1406 1715">To gain an immediate landscaped effect and for ease of maintenance.</p> |

| REQUIREMENT  | COMMENT  |
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| <p><b>4.10 SOFT LANDSCAPING (CONT'D)</b></p>   |  |
| <p><b>4.10.6</b> The developer/project manager should maintain all soft landscape schemes throughout the maintenance period and for one growing season after handover if the handover of landscaping is delayed from the building handover or agreed occupation date.</p>  | <p>To ensure soft landscaping features are able to develop as planned.</p>   |
| <p><b>4.10.7</b> Any planting failures should be made good by the developer/project manager during this period.</p>  | <p>To safeguard the Client's facilities.</p>   |
| <p><b>4.11 EXTERNAL HARD LANDSCAPING</b></p>   |  |
| <p><b>4.11.1</b> Where adjacent roads are subject to continuous waiting or loading restriction, access roads with adequate turning space should be provided within the curtilage of the site.</p>  | <p>For operational purposes.</p>   |
| <p><b>4.11.2</b> Access and hard standing for emergency services vehicles should be provided to comply with the requirements of the relevant authority (eg., Fire Brigade vehicles) and due consideration should be given to providing access and hard standing adjacent to major engineering services plant locations (eg., substations).</p> | <p>For operational, safety and maintenance purposes.</p>   |
| <p><b>4.11.3</b> The construction of all access roads and hard standings should be suitable for the purpose and comply with all relevant regulations and local authority requirements.</p>   | <p>Local Authorities require a good standard of road construction which provide an acceptable good wearing product. Some roadways may be adopted by the Local Authority.</p> |
| <p><b>4.11.4</b> Due regard must be paid to security considerations when designing hard screening.</p>   | <p>To avoid security breaches while maintaining views from areas in the vicinity of the site.</p>  |

| REQUIREMENT   | COMMENT  |
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| <p data-bbox="181 434 778 510"><b>4.12 BUILDING ACOUSTICS</b></p> <p data-bbox="181 544 783 674"><b>4.12.1</b> The design and planning arrangements of the building should take due account of the need to ensure an acceptable internal acoustic environment.</p> <p data-bbox="181 701 783 1592"><b>4.12.2</b> In particular attention should be given to:</p> <ul data-bbox="268 752 783 1592" style="list-style-type: none"> <li>• Careful siting of plant and machine rooms, kitchens, or other noisy areas;</li> <li>• Preventing undue vibration transmission from rotating and reciprocating plant (eg., by the use of appropriate anti-vibration devices/ floor slab stiffness);</li> <li>• Careful design of the walls, floors and ceilings enclosing noisy equipment/service ducts to prevent unacceptable noise transmission to occupied areas;</li> <li>• Constructional characteristics of partitions and detailing of partition side/head fixings to ensure speech privacy between adjacent areas particularly cellular offices, interview rooms and conference rooms;</li> <li>• Provision where necessary of plant attenuators, acoustic enclosures, cross talk silencers, acoustic louvres etc., to reduce noise transmission from engineering services installations; and</li> <li>• Careful selection of room surfaces and finishes to ensure acceptable reverberation times.</li> </ul> <p data-bbox="181 1619 783 1955"><b>4.12.3</b> The design and planning arrangements should ensure that ambient noise levels, with all engineering services operating normally but with no activity in the area, do not exceed the following:</p> <ul data-bbox="268 1805 783 1955" style="list-style-type: none"> <li>• Cellular offices, interview rooms, first aid rooms, conference rooms : 40 dB(A)</li> <li>• Open plan offices : 45 dB(A)</li> </ul> | <p data-bbox="810 544 1374 607">To ensure speech privacy and provide an acceptable environment to work in.</p> <p data-bbox="810 752 1331 815">To avoid undue noise and vibration transmission causing nuisance to adjacent areas.</p> <p data-bbox="810 1619 1171 1644">To define an acceptable standard.</p> |

| REQUIREMENT   | COMMENT   |
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| <p data-bbox="196 443 657 483"><b>4.12 BUILDING ACOUSTICS (CONT'D)</b></p> <p data-bbox="180 544 767 611"><b>4.12.4</b> These levels should be regarded as a maximum and preferred values are 5 dB(A) lower.</p> <p data-bbox="180 633 775 835"><b>4.12.5</b> Permitted levels due to traffic noise intrusion with windows open are referred to in <a href="#">Section 2</a> but care should be exercised during planning to ensure rooms requiring a quieter environment are located as far away as practicable from any noisy elevations.</p> | <p data-bbox="810 633 1198 663">To obtain the best possible solution.</p> |

**SECTION 5**  
**DISABLED USERS**

# SECTION 5

## DISABLED USERS

The Developer or Project Manager must comply with all relevant and current statutory instruments, regulations and the requirements of all statutory and regulating authorities

| REQUIREMENT  | COMMENT  |
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| <p><b>5.1 GENERAL</b></p> <p><b>5.1.1</b> In general, the developer/project manager should ensure that the building and its environs are designed so as to be suitable for disabled users, both staff and visiting public.</p> <p><b>5.1.2</b> The term disabled users refers not only to wheelchair users but also to those having reduced mobility and with sight or hearing/ speech impairment.</p> <p><b>5.1.3</b> The intention is for people with disabilities to be able to access and use the building in as independent a way as possible. Where, due to particular circumstances, it is not possible to incorporate all appropriate facilities, consideration should be given as to how disabled people might seek assistance (for example a bell).</p> <p><b>5.1.4</b> General access and facilities as required by the Building Regulations and the solutions for their compliance contained in "Approved Documents" should be incorporated together with the further requirements outlined below.</p> | <p>The intention of this section of the document is to ensure that all buildings can be easily visited by disabled people and are safe and easy to use by disabled staff members.</p> <p>Exclusion from high risk areas may be justified in some cases for safety reasons.</p> |

| REQUIREMENT   | COMMENT  |
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| <p data-bbox="181 434 780 510"><b>5.2 EXTERNAL ACCESS</b></p> <p data-bbox="181 544 782 645"><b>5.2.1</b> External access facilities should be carefully considered with attention given to the following:</p> <ul data-bbox="268 667 778 1514" style="list-style-type: none"> <li>• Routes through grounds or outbuildings clearly signposted and well lit;</li> <li>• Firm, non slip and well laid surfaces;</li> <li>• Main path clearly delineated by different coloured paving stones, edgings, different textured strip along edges or by a low rail;</li> <li>• Obstacles placed so as to avoid hazard eg., flower bowls, maturing soft landscaping features;</li> <li>• Gratings flush and with maximum gap 15 mm;</li> <li>• Path width should where practicable be a minimum of 1800 mm to allow wheelchairs and prams to pass (note a blind person using a long cane requires a sweep of about 1500 mm);</li> <li>• Changes in level should be served by a ramp which, if at a gradient steeper than 1 in 15, should have a hand rail; and</li> <li>• Parking facilities for disabled users should be provided as indicated in the project specific brief.</li> </ul> <p data-bbox="181 1541 782 1776"><b>5.2.2</b> Overhanging canopies or other features should have a minimum clearance of 2400 mm. Any projection which is too low to walk under should be avoided but where this is not possible it should be safeguarded by some form of ground level edging to protect partially sighted or blind users.</p> <p data-bbox="181 1803 782 2002"><b>5.2.3</b> Kerbs should be blended at intersections to allow access for wheelchairs. Textured surfaces to assist blind people should be considered (eg., at the approach to a road) but such surfaces should not hinder the mobility of others (eg., wheelchair users).</p> | <p data-bbox="810 667 1321 730">To minimise travel distance and help users with impaired vision.</p> <p data-bbox="810 752 1410 779">To assist wheel chair users and ambulant disabled users.</p> <p data-bbox="810 801 1193 828">To assist users with impaired vision.</p> <p data-bbox="810 925 1362 952">To assist blind people or users with impaired vision.</p> <p data-bbox="810 1305 1378 1368">For wheel chair users. Steps are however sometimes easier to use than ramps for ambulant disabled users.</p> |

| REQUIREMENT  | COMMENT   |
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| <p><b>5.3 BUILDING APPROACH</b></p> <p><b>5.3.1</b> Wherever possible the approach to the building should be no steeper than 1 in 20 and have a clear width of at least 1800 mm.</p> <p><b>5.3.2</b> Where the approach is steeper than 1 in 20 a ramp should be provided and consideration should also be given to stepped access (ambulatory disabled people with respiratory problems cope better with steps) although if both cannot be incorporated a ramp is preferred.</p> <p><b>5.3.3</b> Where space or other circumstances do not permit ramps to be provided, consideration might be given to a "short travel vertical wheelchair lift". This equipment should be arranged so that wheelchair users do not have to "double up" as users of the goods lift and entrance. The lift should raise the wheelchair user to the same main entrance level as that of other users.</p> | <p>To aid access by wheel chair users.</p> <p>To ensure wherever possible that disabled users are afforded similar facilities to able bodied users.</p> |
| <p><b>5.4 ENTRANCES</b></p> <p><b>5.4.1</b> Access for people with disabilities should be provided through the principle entrance to the building.</p> <p><b>5.4.2</b> The entrance doors should provide a minimum clear opening of 1800 mm, in the form of double doors.</p> <p><b>5.4.3</b> Where appropriate, vision panels should be incorporated in entrance doors to give a zone of visibility from a height of 900 mm to 1800 mm from the finished floor level.</p> <p><b>5.4.4</b> In larger offices automated opening doors are preferred.</p> <p><b>5.4.5</b> Frameless glass doors should be avoided and any glass doors which are fitted should be clearly marked.</p>   | <p>For safety reasons.</p> <p>For ease of access.</p> <p>To avoid hazard to users with impaired vision.</p>   |



| REQUIREMENT  | COMMENT  |
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| <p><b>5.4 ENTRANCES (CONT'D)</b></p> <p><b>5.4.6</b> There should be a minimum clear space of 300 mm next to the leading edge of the door to allow easy approach to the door handle and facilitate wheelchair manouverability.</p> <p><b>5.4.7</b> Entrance lobby arrangements should enable wheelchair users to be able to move clear of one door before using the next and there should also be sufficient space for someone assisting the wheelchair user and for someone passing in the opposite direction.</p> <p><b>5.4.8</b> Entrance mats should be close fitting, flush with the floor surface and firm.</p> <p><b>5.4.9</b> Low headroom areas (eg., the under edge of staircase) should be avoided or where this is not possible should be protected by some form of barrier.</p>   | <p>To avoid damage and facilitate easy entrance and exit.</p> <p>To avoid injury to blind people or those with impaired vision.</p>                                    |
| <p><b>5.5 INTERNAL LAYOUT</b></p> <p><b>5.5.1</b> Internal layouts should reflect the needs of disabled users and careful consideration should be given to:</p> <ul style="list-style-type: none"> <li>• Clear signing of key areas (eg., reception) and of any special facilities (eg., auditory aids);</li> <li>• Corridors should have a minimum width of 1800 mm. This requirement applies to notional corridors in open plan areas;</li> <li>• Minimising hazards on circulation routes;</li> <li>• Avoiding changes of floor level particularly at doorways;</li> <li>• Providing space in main reception areas for wheelchair users to be able to park adjacent to the normal seating area;</li> <li>• Avoiding the use of deep pile and bold patterned carpets the latter which are confusing to people with impaired vision;</li> </ul> | <p>For example a common hazard to the blind is caused by fire extinguishers standing proud of the wall on circulation routes. These should be recessed for safety.</p> |

| REQUIREMENT   | COMMENT  |
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| <p><b>5.5 INTERNAL LAYOUT (CONT'D)</b></p> <ul style="list-style-type: none"> <li>• Providing doors in corridors which open both ways whenever possible;</li> <li>• Providing doors that ensure a minimum 900mm clear opening between stop and leading edge throughout the building;</li> <li>• Using contrasting colours to signify features or hazards;</li> <li>• Providing suitable vision panels in doors and partitions;</li> <li>• Ensuring all safety signs are clearly visible and large enough to be easily read by users with impaired vision in compliance with the Safety Signs and Signals regulations; and</li> <li>• Ensuring ironmongery is suitable for use by disabled persons.</li> </ul>   |  |
| <p><b>5.6 LIFTS</b></p> <p><b>5.6.1</b> Passenger lifts for use by disabled persons should be of dimensional arrangements and with facilities as set out in the relevant Building Regulations approved documents.</p> <p><b>5.6.2</b> An emergency telephone linked to a 24 hour attended service should also be provided. The telephone should be located at the same height as the lift controls, be fitted with an inductive coupler and provided with appropriate tactile indicators on or next to call buttons together with visual and audible displays.</p> <p><b>5.6.3</b> Lift controls should be easily visible, of good size and in contrasting colours.</p> <p><b>5.6.4</b> Levelling controls should be provided to ensure the floor of the lift accurately coincides with the outside level.</p> <p><b>5.6.5</b> A handrail should be fitted to the interior of the lift car at approximately 1000 mm from the floor.</p> | <p>Disabled users rely on passenger lifts in multi storey buildings.</p> <p>It is important therefore that lift controls can be used by disabled people and that emergency assistance can be readily called in the event of lift failure.</p> <p>To assist wheel chair users.</p> <p>For ambulant disabled people.</p> |

| REQUIREMENT  | COMMENT  |
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| <p><b>5.7 MISCELLANEOUS</b></p> <p><b>5.7.1</b> Sanitary facilities suitable for disabled users should be provided as detailed in <a href="#">Section 6</a>.</p> <p><b>5.7.2</b> Lighting arrangements, which must comply with the specific requirements detailed elsewhere in this document, should wherever practicable also take due account of the needs of visually impaired users and lip readers, specific examples include:</p> <ul style="list-style-type: none"> <li>• Taking care in the position and angling of spotlights to avoid dazzle;</li> <li>• Ensuring consistent levels in brightness without sudden changes; and</li> <li>• Avoiding glare from natural sunlight and the provision of blinds or curtains where necessary to reduce glare effects.</li> </ul> <p><b>5.7.3</b> The requirements for fire alarms should be discussed with the Fire Advisor and when required fire alarms should be a combination type (ie., audible and visual).</p> <p><b>5.7.4</b> Special facilities such as induction loop/infra red hearing aid systems at public counters should be provided where required by the design brief.</p> <p><b>5.7.5</b> Handrails for disabled users should generally be round in shape about 50 mm dia, securely fixed and easy to grasp. Smooth hardwood or nylon coated types are preferred as being comfortable to touch.</p> <p><b>5.7.6</b> Door handles should be fitted approximately 1000 mm above floor level and where operating a latch should preferably be a lever action handle, not a twist knob.</p> <p><b>5.7.7</b> The tension on door closers should be set as low as practicable to enable disabled users to open doors without needing assistance.</p> <p><b>5.7.8</b> Large expanses of glass should be avoided or be clearly marked to avoid hazard particularly to users with impaired vision.</p> | <p>To alert people with impaired vision or hearing.</p> <p>Occupying Departments should carefully assess the need for such devices and clarify the requirements in the design brief.</p> <p>For ease of use.</p> |

**SECTION 6**  
**ACCOMMODATION REQUIREMENTS**

# SECTION 6

## ACCOMMODATION REQUIREMENTS

The Developer or Project Manager must comply with all relevant and current statutory instruments, regulations and the requirements of all statutory and regulating authorities

| REQUIREMENT   | COMMENT   |
|---|---|
| <div data-bbox="181 533 778 640" style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p><b>6.1 MAIN ENTRANCES AND RECEPTION AREAS</b></p> </div> <p><b>6.1.1</b> Main entrance areas should provide a light attractive approach to the building using good quality materials.</p> <p><b>6.1.2</b> Internally a soft approach to design is preferred, with good quality carpeting of appropriate colour and pattern for ease of maintenance on floors other than at walk-off zones, and attractive yet durable wall finishes. Ceilings should be good quality feature type with effect lighting incorporated as an integral part of the design. Good quality door mats should be provided in entrance lobbies.</p> <p><b>6.1.3</b> The selection of floor finishes should pay due regard to safety of usage, both when new and throughout the working life.</p> <p><b>6.1.4</b> Reception areas should be provided with reception desk, seating, waiting space, power, lighting, heating and telephone facilities appropriate to the size and needs of the building.</p> <p><b>6.1.5</b> The developer/project manager should assess the effect on the traffic flow in these areas particularly “queuing” around reception desks, flexi-time clocks and the like and incorporate these into the overall traffic assessment referred to in <a href="#">Section 4</a>.</p> <p><b>6.1.6</b> Care should be exercised to ensure that security, access for the disabled, safety matters and the provision of an environment that is safe and sympathetic to the needs of all the building users, are all matters that have been correctly addressed.</p> | <p>To create a good first impression on approaching the building.</p> <p>To create a good impression and an attractive ambience many departments have their own corporate image pattern, if this is the case it should be so stated.</p> <p>For staff and visitor's safety and to minimise repair and replacement costs.</p> <p>To avoid overcrowding causing staff discontentment and to minimise non productive time.</p> |

| REQUIREMENT   | COMMENT  |
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| <p><b>6.1 MAIN ENTRANCES AND RECEPTION AREAS (CONT'D)</b></p> <p><b>6.1.7</b> Where separate staff and public entrances are provided, eg., in DSS benefit offices, consideration should be given to the design of the individual entrances. In this type of office a more restrained approach will be employed at the staff entrance, with the over-riding priority being the safety and security of the staff.</p> <p><b>6.1.8</b> Staff entrances should be well separated from public entrances.</p> <p><b>6.1.9</b> The public entrances in this type of building require a more robust approach to the design philosophy. The entrance area, especially if unobserved, should provide hard, easily cleaned and vandal resistant finishes, while still providing an attractive ambience.</p> <p><b>6.1.10</b> Security and the safety of the public must be given due consideration, and any specialist security matters identified in the design brief must be incorporated.</p> | <p>For security and safety of staff and to minimise the possibility of public gaining access to staff areas.</p> <p>To reduce maintenance costs.</p> |
| <p><b>6.2 MAIN CIRCULATION/STAIRS</b></p> <p><b>6.2.1</b> Main circulation routes should provide ready access to all areas of the building and should be designed with due regard to safety, security and the needs of disabled persons.</p> <p><b>6.2.2</b> Main staircases and lift halls shall be designed to reflect the philosophy of the main entrance and have a high quality of finish.</p> <p><b>6.2.3</b> Secondary staircases, where used for circulation, should be designed to a similar standard, and fire escape stairs should be provided with plastered, painted walls and vinyl flooring with non-slip nosings as a minimum standard.</p> <p><b>6.2.4</b> Stairs should not utilise open risers.</p>  | <p>To define an acceptable standard.</p> <p>For safety reasons.</p>  |

| REQUIREMENT   | COMMENT   |
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| <p><b>6.2 MAIN CIRCULATION/STAIRS (CONT'D)</b></p>  |   |
| <p><b>6.2.5</b> Balustrades should use infill panels or vertical rails only and with the gap between rails no greater than 100 mm.</p>  | <p>For safety reasons.</p>  |
| <p><b>6.3 OPEN PLAN OFFICES</b></p>   |   |
| <p><b>6.3.1</b> Open plan office areas should provide a working environment which is both pleasant for the user and economical in use.</p>  | <p>To provide an environment sympathetic to the needs of the occupiers with minimised running costs.</p>  |
| <p><b>6.3.2</b> Particular attention should be given to:</p> <ul style="list-style-type: none"> <li>• Providing adequate natural light (refer to <a href="#">Section 4</a>);</li> <li>• Providing areas which are regular in shape and of sensible proportions;</li> <li>• Keeping columns to a minimum compatible with good design;</li> <li>• Ensuring height to depth ratios are reasonable and avoid the "tunnel" effect; and</li> <li>• The need for open plan spaces to be capable of being partitioned at some future date with minimal disruption.</li> </ul> | <p>To reduce use of artificial lighting.</p> <p>To enable functional working layouts to be planned.</p> <p>To minimise restrictions in operational layouts for staff and furniture.</p> <p>To maintain a 'human' scale.</p> <p>To maintain flexibility.</p> |
| <p><b>6.3.3</b> All office areas should be designed for VDU use and the general use of VDUs taken into account particularly in respect of service facilities and environmental effects.</p>   | <p>To take account of the increasing use of electronic office equipment.</p>  |
| <p><b>6.3.4</b> Engineering service requirements (eg., lighting, power, voice/data facilities etc.) are separately identified elsewhere in this document but attention should be given to the integration and co-ordination of services particularly in relation to potential future partitioning layouts.</p>  | <p>To enable changes in layout to be made with minimum change to fixed installations.</p>   |

| REQUIREMENT   | COMMENT  |
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| <p data-bbox="181 434 778 510"><b>6.3 OPEN PLAN OFFICES (CONT'D)</b></p> <p data-bbox="181 544 783 815"><b>6.3.5</b> In this connection the developer/project manager should submit proposals showing potential options for future partition layouts and indicating any modifications which would be necessary to the fixed service installations to enable a particular option to be adopted. These proposal should be submitted to the Client at as early a stage as possible.</p> <p data-bbox="181 846 778 922"><b>6.4 CELLULAR OFFICES</b></p> <p data-bbox="181 956 762 1088"><b>6.4.1</b> Cellular offices may be required, and details of the numbers and specific accommodation facilities should be provided as required by the design brief.</p> <p data-bbox="181 1115 778 1514"><b>6.4.2</b> Cellular offices should have:</p> <ul data-bbox="268 1167 778 1514" style="list-style-type: none"> <li>• Adequate natural light;</li> <li>• A regular shape with proportions suitable to the purpose and permitting a sensible arrangement of furniture and working area;</li> <li>• An area as near as practicable to that stated in the design brief; and</li> <li>• Where practicable a facility to enable the room temperature to be adjusted by the occupant.</li> </ul> <p data-bbox="181 1547 778 1624"><b>6.5 CONFERENCE ROOMS</b></p> <p data-bbox="181 1657 778 1823"><b>6.5.1</b> Conference rooms should be located in areas convenient for access from management suites and main access areas. Care should be taken in selecting the location to reduce nuisance to the users from noise and solar gain.</p> <p data-bbox="181 1850 783 1944"><b>6.5.2</b> The design of the conference room should result in a quiet, well proportioned environment with finishes sympathetic to the proposed use.</p> | <p data-bbox="810 544 1382 676">To identify the possible range of different working layouts and the measures necessary to achieve them. These will be outline proposals to identify likely alternative layouts that may be achievable.</p> <p data-bbox="810 1424 1410 1518">To enable adjustment of the local environment. Note 'tamperproof' high limit settings are available and should be specifically requested by the Client.</p> |



| REQUIREMENT  | COMMENT   |
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| <b>6.5 CONFERENCE ROOMS (CONT'D)</b>   |   |
| <b>6.5.3</b> It shall be noted that a higher level of finish than in normal offices is expected in the conference room.  |   |
| <b>6.5.4</b> Double doors are preferred to conference rooms.   | To permit entry of bulky items such as display units.   |
| <b>6.5.5</b> It should be assumed that overhead projectors and audio/visual presentation facilities will be used, and provision should be made for their use including black out blinds or curtains and containment systems for wiring.  |   |
| <b>6.5.6</b> Dimmer switches should be provided to enable adjustment of the room lighting levels.  | To permit controlled lowering of lighting levels for display and audio/visual presentations.  |
| <b>6.5.7</b> Care must be exercised to ensure room fresh air ventilation provisions are suitable for the proposed occupation density. Where necessary, mechanical ventilation should be incorporated and this should be capable of being locally switched from within the room.                    | For the comfort and convenience of users.   |
| <b>6.5.8</b> Consideration should also be given in exceptional cases to the provision of comfort cooling.  | Where analysis indicates that unacceptably high temperatures will result.   |
| <b>6.5.9</b> Special facilities as may be required by the design brief should also be provided including: <ul style="list-style-type: none"> <li>• Induction loop/infra red hearing systems;</li> <li>• VHF/Satellite aerial facilities; and</li> <li>• Conference catering facilities.</li> </ul> | The facilities will depend on the intended usage and the occupying Department should identify any special facilities in the design brief. |

| REQUIREMENT   | COMMENT  |
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| <p><b>6.6 STORES</b></p> <p><b>6.6.1</b> A variety of different types of storage will be required as stated in the design brief, and the developer/project manager should ensure that the design and finishes are suitable for the stated purpose.</p> <p><b>6.6.2</b> Care must be exercised to ensure that:</p> <ul style="list-style-type: none"> <li>• Floor loadings are adequate. See <a href="#">Section 7</a>;</li> <li>• Storage areas are located so as to minimise handling and disruption to the buildings users;</li> <li>• Access to storage areas facilitates movement of stored items;</li> <li>• Access doors are sized to permit the passage of goods trollies if required;</li> <li>• Lighting layouts take into account proposed racking/shelving layouts to ensure that passages between units are adequately lit; and</li> <li>• Security requirements detailed in the design brief are complied with.</li> </ul> | <p>To ensure the suitability of the provisions.</p> <p>Wherever possible heavy goods storage areas should be located at ground level.</p>  |
| <p><b>6.7 STAFF TOILETS</b></p> <p><b>6.7.1</b> Male and female staff toilets should be provided on all occupied floor levels.</p> <p><b>6.7.2</b> The preferred design should provide an attractive integrated environment, capable of being varied in appearance at intervals and with finishes which are hard wearing, hygienic, attractive and easily maintained.</p> <p><b>6.7.3</b> Ceilings should be modular suspended ceilings similar to main areas but suitable for use in damp conditions.</p> <p><b>6.7.4</b> Lighting should be carefully planned to complement the overall design with concealed or recessed fittings in walls or ceilings.</p>  | <p>To reduce travel of staff around the building and maintain flexibility, and sell-on potential.</p> <p>To provide attractive facilities which users will respect and take pride in, and to minimise vandalism.</p> |

| REQUIREMENT  | COMMENT   |
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| <p><b>6.7 STAFF TOILETS (CONT'D)</b></p>   |   |
| <p><b>6.7.5</b> Toilets shall be effectively ventilated either by natural means, or by incorporating mechanical ventilation systems.</p>   | <p>To maintain a pleasant environment within the area and to prevent transfer of unpleasant odours to adjacent areas.</p>   |
| <p><b>6.7.6</b> Cubicles should complement the walls finishes, be no less than 2.0 m in height and raised 150 mm from the floor for ease of cleaning.</p>  | <p>For privacy.</p>   |
| <p><b>6.7.7</b> The facilities should incorporate or make provisions for:</p> <ul style="list-style-type: none"> <li>• Indicator bolts on cubicle doors which are capable of being opened from the outside in an emergency;</li> <li>• Self closing entrance doors;</li> <li>• Hat and coat hooks in each cubicle;</li> <li>• Toilet roll holders in each cubicle;</li> <li>• Mirrors over basins;</li> <li>• Hot air driers; and</li> <li>• Towel rollers.</li> </ul> | <p>To permit access in emergency.</p> <p>For privacy.</p> <p>) Certain Departments have requirements for either or ) both, the provision of either is generally on a rental ) basis.</p>  |
| <p><b>6.7.8</b> Sanitary accommodation should be provided on the basis of 60% male staff : 60% female staff based on 120% of the population at 1 person per 15m<sup>2</sup> net unless different proportions are identified in the design brief.</p>   | <p>A decision should be taken at an early stage as to whether urinals are to be provided in male toilets. If the male to female staff proportions may vary then the flexibility provided via 'unisex' planning, capable of being re-designated with minimum alteration, may be advisable.</p> |
| <p><b>6.7.9</b> WC suites, basins, urinal bowls and divisions should be of good quality vitreous china with:</p> <ul style="list-style-type: none"> <li>• WC pan/cisterns with capability of 6.0 litre flush; and</li> <li>• Basins set in a vanity top and complete with taps, retained plug and soap recess.</li> </ul>  | <p>To comply with BREEAM requirements</p>   |
| <p><b>6.7.10</b> The preferred method of sanitary towel disposal is by bin service and will be arranged by the tenant.</p>   |   |

| REQUIREMENT   | COMMENT   |
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| <p><b>6.8 PUBLIC TOILETS</b></p>  |   |
| <p><b>6.8.1</b> Where toilets are provided for the public, the provision should be one male toilet, one female toilet and one separately accessed unisex disabled person's compartment.</p>   | <p>Public toilets should only be provided where specifically required.</p>  |
| <p><b>6.8.2</b> Public toilets should ideally be located in a supervised area sufficiently remote from the entrance that it is not obvious to passers-by.</p>   | <p>To discourage use by passers-by who are not visiting the building.</p>   |
| <p><b>6.8.3</b> The facilities should be designed to be vandal resistant, with hard impervious floor and wall finishes resistant to damage and graffiti.</p>  | <p>To minimise damage and maintenance/repair costs.</p>   |
| <p><b>6.8.4</b> Toilet fittings, sundries and lighting fittings should also be as vandal resistant as possible and consideration should be given to concealing flushing cisterns.</p>   |   |
| <p><b>6.8.5</b> Locks are to be provided to the entrance doors.</p>   | <p>To allow for management control of facilities eg., by only opening on request - in order to minimise the potential for misuse.</p>   |
| <p><b>6.8.6</b> Except where varied by the above, other requirements shall be as detailed for staff toilets.</p>  |   |
| <p><b>6.9 DISABLED PERSON TOILETS</b></p>   |   |
| <p><b>6.9.1</b> Preferably one toilet compartment for each sex should be provided for wheelchair users on each floor. These facilities should be integral with general toilet accommodation and be accessible from all parts of the building. Toilets should be alternate left and right hand transfer on alternate floor levels.</p> | <p>To ensure disabled users do not feel discriminated against by segregation but are integrated into general office life. To ease use for wheelchair users with differing degrees of disability from one side of the body to the other.</p> |
| <p><b>6.9.2</b> If space precludes the provision of separate male and female toilets for wheelchair users then the provision of a separately accessed unisex toilet may be considered.</p>  |   |

| REQUIREMENT   | COMMENT  |
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| <p><b>6.9 DISABLED PERSON TOILETS (CONT'D)</b></p>  |  |
| <p><b>6.9.3</b> Wheelchair compartments should be designed to current good practice (including Building Regulations approved documents) and be equipped with suitable WC suite, wash basin with easily operated taps, hand drier and adequate support and pull rails.</p> |  |
| <p><b>6.9.4</b> A full length pull cord alarm should be provided in each wheelchair compartment and be arranged to give audible/visual indication in a main office or reception area.</p>   | <p>To enable a call for assistance to be made even if the person has fallen to the floor.</p>                      |
| <p><b>6.10 TEA POINTS</b></p>   |  |
| <p><b>6.10.1</b> Generally tea points should be provided on each floor located adjacent to main working areas to minimise travel.</p>   | <p>To provide facilities within easy reach of the working areas and reduce staff movement around the building.</p> |
| <p><b>6.10.2</b> Care must be exercised in the layout of the area to avoid dirt and crumb traps and finishes should be carefully chosen for ease of maintenance, vapour resistance and to minimise the effect of spillage.</p>  | <p>For cleaning and safety reasons.</p>  |
| <p><b>6.10.3</b> Floor coverings should be good quality seamless vinyl sheeting or similar and having a slip resistant finish.</p>  |  |
| <p><b>6.10.4</b> Doors should have viewing panels or an adjacent glazed panel.</p>  | <p>For safety reasons.</p>   |

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| <p><b>6.10 TEA POINTS (CONT'D)</b></p> <p><b>6.10.5</b> Tea points should incorporate the following facilities:</p> <ul style="list-style-type: none"> <li>• Sink with base cupboard unit, mains cold water and hot water supply;</li> <li>• Suitable means of ventilation;</li> <li>• Fully plumbed instantaneous water boiler sized to suit occupancy and wired to a fused spur unit;</li> <li>• Worktop with drawers and crockery cupboard under;</li> <li>• Electrical supplies above work spaces and space for a refrigerator and chilled water dispensing unit;</li> <li>• Space for vending machines where required by the design brief; and</li> <li>• Impervious splash back 450 mm high to sink and worktop both to the rear and any abutting site walls.</li> </ul> | <p>To provide boiling water for beverage preparation.</p> <p>To permit flexibility in provisions.</p> <p>To permit flexibility in provisions.</p> <p>To minimise staining and ease cleaning of surrounding areas.</p>  |
| <p><b>6.11 STAFF RESTAURANT/KITCHEN</b></p> <p><b>6.11.1</b> Where staff restaurants/kitchens are provided the facilities should be suitable for the numbers of persons indicated in the design brief.</p> <p><b>6.11.2</b> Alternatively, if required by the design brief, the developer/project manager should provide a fully serviced area suitable for fitting out by others as a staff restaurant/kitchen.</p> <p><b>6.11.3</b> The location of the facility should be carefully considered at the very earliest stage due to the fundamental effect on basic planning considerations, structural design, service requirements, health and safety provisions, arrangements for deliveries/disposals etc.</p>   | <p>Restaurants would not normally be provided except where there is a justifiable need and where provided should be of the minimum size necessary in order to minimise costs and loss of productive space. Additionally consideration should be given to the other use of this space, ie sports, social etc.</p> <p>To ensure all relevant factors are taken into account and incorporated at the design stage to avoid additional costs of restructuring.</p> |

| REQUIREMENT  | COMMENT   |
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| <p><b>6.11 STAFF RESTAURANT/KITCHEN (CONT'D)</b></p>   |   |
| <p><b>6.11.4</b> The accommodation should be designed as a modern unit providing a good working environment for the kitchen staff and a quality dining area complete with furnishings and fittings.</p>  | <p>To encourage take up of the facility and provide a good working environment.</p>   |
| <p><b>6.11.5</b> The Client's agreement should be obtained to the location, design and materials proposed prior to finalisation of the design.</p>   | <p>To ensure the design primarily reflects the needs of the Client rather than those of the facility operator where this is to be contracted out.</p>   |
| <p><b>6.11.6</b> The facilities should be carefully sited to ensure minimum impact on the office working environment while remaining easily accessible to users.</p>   | <p>To reduce disruption to staff.</p>   |
| <p><b>6.11.7</b> Kitchen facilities are major energy consumers and the developer/project manager should therefore incorporate measures to reduce energy consumption. In this regard careful consideration should be given to:</p> <ul style="list-style-type: none"> <li>• Choice of fuel/metering;</li> <li>• Kitchen equipment insulation/control facilities;</li> <li>• Variable ventilation rates;</li> <li>• Heat reclaim; and</li> <li>• Modular equipment for differing throughputs.</li> </ul> | <p>To reflect the overall policy of reducing primary energy consumption.</p> <p>To ensure electrically heated equipment is not used where gas is a viable alternative.<br/>To avoid unnecessary heat loss and reduce energy consumption.</p> <p>To reduce plant operating costs by matching plant output to actual requirements.<br/>To avoid wasting energy.</p> <p>To enable equipment energy consumption to be varied to match catering loads.</p> |
| <p><b>6.11.8</b> Care should be taken to ensure compliance with all food safety regulations and to minimise future maintenance requirements.</p>   |   |
| <p><b>6.11.9</b> The facility should comprise the main restaurant, kitchen/servery, prep and wash areas, ancillary storage and kitchen staff areas, as identified in the design brief.</p>   |   |

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| <p data-bbox="181 434 780 510"><b>6.11 STAFF RESTAURANT/KITCHEN (CONT'D)</b></p> <p data-bbox="181 544 780 813"><b>6.11.10</b> Good kitchen planning requires attention in both conceptual and detailed design and in consequence the developer/project manager should ensure overall design solutions fully address all the special considerations relevant to this type of accommodation, regardless of whether or not fitting out works are to be carried out by others.</p> <p data-bbox="181 837 780 904"><b>6.11.11</b> The following list, which is not exhaustive, illustrates typical examples.</p> <ul data-bbox="268 927 780 1926" style="list-style-type: none"><li>• Floor loadings;</li><li>• Builders' ducts;</li><li>• Additional drainage for equipment and floor channel outlets;</li><li>• Additional hot and cold water storage and supplies;</li><li>• Ventilation ductwork, canopies, grease filters;</li><li>• Air treatment and make up air;</li><li>• Protection during washing down (eg., electrical outlets);</li><li>• Goods lift provision when necessary;</li><li>• The effect of noise and heat on adjacent areas including accommodation above and below;</li><li>• The effect on lift analysis;</li><li>• Use of inorganic materials;</li><li>• Sealing of voids or cavities to prevent infestation;</li><li>• Additional boiler loadings;</li><li>• Additional fire precautions;</li><li>• Additional gas and electric loadings and supplies and isolation procedures;</li></ul> | <p data-bbox="810 544 1390 645">To illustrate the importance of considering all relevant factors by giving indicative examples of matters which will need to be addressed by designers.</p> |



| REQUIREMENT  | COMMENT  |
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| <p><b>6.11 STAFF RESTAURANT/KITCHEN (CONT'D)</b></p> <ul style="list-style-type: none"> <li>• Refuse disposal arrangements; and</li> <li>• Sealing around service penetrations to protect against vermin, insects, water penetration etc.</li> </ul> <p><b>6.11.12</b> Fly screens should be provided to all windows in kitchen and food preparation/storage areas. Fly screens should also be provided on the air intakes and exhausts of ventilation systems.</p> <p><b>6.11.13</b> Trolley standing areas should be located within the restaurant and wash-up areas.</p> <p><b>6.11.14</b> A drip sink with mains water supply should be provided within the restaurant together with mains water/electrical services for drinks dispensers.</p>  | <p>For hygiene reasons.</p> <p>To ensure space is available.</p> <p>For the convenience of staff.</p>  |
| <p><b>6.12 STAFF/MESS ROOM</b></p> <p><b>6.12.1</b> A staff/mess room as required by the design brief should be provided in a suitable location convenient to main offices and toilets.</p> <p><b>6.12.1</b> The room should provide a pleasant restful environment in which staff may relax during breaks.</p> <p><b>6.12.3</b> Mechanical ventilation should be provided where necessary sufficient to maintain a pleasant environment.</p> <p><b>6.12.4</b> The area should be sub-divided to form a working kitchen area and associated dining/relaxing area.</p> <p><b>6.12.5</b> The dining area should be treated in a similar way as general offices as regards finishes, but with lighting to create an appropriate ambience.</p> <p><b>6.12.6</b> The kitchen area should be designed as a domestic type of kitchen and provided with good quality hard-wearing fitments chosen from a commercial range.</p> | <p>For staff convenience and to minimise travel distance.</p> <p>To reduce stress.</p> <p>To provide a quiet area within the facility.</p> <p>To provide a good environment without over specifying.</p> |

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| <p><b>6.12 STAFF/MESS ROOM (CONT'D)</b></p> <p><b>6.12.7</b> All necessary services for the kitchen should be provided.</p> <p><b>6.12.8</b> The quantity of fitments and 'white goods' to be provided should be as stated in the design brief, or as agreed with the Client. Initial planning should allow for an oven and hob unit, microwave oven and fridge/freezer unit, a reasonable length of worktop with cupboards over and under and a sink unit with large and small bowls and drainer.</p> <p><b>6.12.9</b> Generally the requirements, except where varied above, should be as described for tea points.</p> | <p>To indicate typical planning requirements. The design brief should identify the specific requirements</p> |
| <p><b>6.13 SMOKING ROOMS</b></p> <p><b>6.13.1</b> Where smoking is permitted in the building generally or in staff/mess rooms, provision of a separate smoking facility should be considered.</p> <p><b>6.13.2</b> Smoking rooms should be appropriately sized and should be provided with 100% fresh air mechanical ventilation.</p>   |  |
| <p><b>6.14 FIRST AID ACCOMMODATION</b></p> <p><b>6.14.1</b> First aid accommodation should be provided in accordance with the following scale:</p> <ul style="list-style-type: none"> <li>• <u>41-500 STAFF</u> A combined treatment and rest room located near to sanitary accommodation;</li> <li>• <u>501-1000 STAFF</u> A separate treatment and rest room located near to female toilet accommodation; or</li> <li>• <u>OVER 1000</u> A separate treatment and rest room with "en-suite" toilet accommodation.</li> </ul>  | <p>For the safety and convenience of staff and to avoid disruption.</p>                                      |

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| <p><b>6.14 FIRST AID ACCOMMODATION (CONT'D)</b></p>  |  |
| <p><b>6.14.2</b> Each treatment room should provide facilities and equipment in accordance with the Approved Code of Practice to the Health and Safety (First Aid) Regulations 1981 (paragraphs 38 - 40).</p>  | <p>To indicate the required facilities.</p>  |
| <p><b>6.14.3</b> Each treatment room and each rest room should be provided with:</p> <ul style="list-style-type: none"> <li>• Local light switching;</li> <li>• Back up heating in case of failure;</li> <li>• Visual/audible alarm activated by a floor length pull cord sounding in a main office area where staff can register the alarm; and</li> <li>• Door locks capable of being easily opened from the outside in case of emergency;</li> <li>• Restful finishes.</li> </ul> | <p>To enable a warm environment to be provided for someone who may be in shock.</p> <p>To enable a call for assistance to be made if necessary.</p> <p>For health reasons.</p> |
| <p><b>6.14.4</b> First aid accommodation should be sited so as to be convenient for access from the main office areas and wherever practicable to facilitate ambulance access as close as possible to the room, ideally at ground floor level.</p>   | <p>To reduce anxiety and provide access in an emergency situation.</p>   |
| <p><b>6.15 SHOWER ROOM</b></p>   |  |
| <p><b>6.15.1</b> Shower rooms should be provided where called for in the design brief, and the brief will state whether they are to be for male or female only or unisex.</p>  | <p>Careful consideration should be given to the need for shower accommodation which would not usually be provided in office accommodation.</p>                                 |

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| <p><b>6.15 SHOWER ROOM (CONT'D)</b></p> <p><b>6.15.2</b> Shower rooms should be provided with:</p> <ul style="list-style-type: none"> <li>• Anti slip floor finishes;</li> <li>• Fully tiled walls to shower areas;</li> <li>• Thermostatic shower mixing valves with adjustable height spray outlets;</li> <li>• Benching and lockers as described in the design brief;</li> <li>• Finishes suitable for a humid environment; and</li> <li>• Mechanical ventilation.</li> </ul>   |   |
| <p><b>6.16 CLEANERS' ROOM</b></p> <p><b>6.16.1</b> Cleaners' rooms should preferably be provided on each floor of the building.</p> <p><b>6.16.2</b> The rooms should be adequately sized for the purpose, and contain a bucket sink complete with grating, hot and cold water supplies, side drainer/laying space and adequate storage shelving.</p> <p><b>6.16.3</b> The floor shall be hard impervious material with a covered skirting in matching material.</p> <p><b>6.16.4</b> Walls should be tiled around the sink area, and the preference is for tiling throughout the room to 1500 mm above floor level.</p> | <p>To enable storage of cleaning materials and equipment and to avoid transporting items from one floor to another for safety reasons.</p> <p>To define the normal facilities which are required.</p> <p>To offer protection against spillage.</p> <p>To minimise staining problems and provide surfaces which can be easily wiped down for hygienic reasons.</p> |
| <p><b>6.17 PLANT SWITCH AND LIFT MOTOR ROOMS AND SERVICE DUCTS</b></p> <p><b>6.17.1</b> Plant areas and switchrooms should be sufficient in scale to enable easy and safe access to equipment for inspection and maintenance and to facilitate the removal/replacement of plant components.</p>  |   |

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| <p data-bbox="181 434 778 544"><b>6.17 PLANT SWITCH AND LIFT MOTOR ROOMS AND SERVICE DUCTS (CONT'D)</b></p> <p data-bbox="181 573 756 674"><b>6.17.2</b> Access to plant and switchrooms should be restricted to authorised persons only and exit doors should have panic latches.</p> <p data-bbox="181 696 775 831"><b>6.17.3</b> The location and internal arrangements within plant rooms should be co-ordinated with the Mechanical and Electrical Design Consultants to ensure the best possible working arrangements.</p> <p data-bbox="181 853 778 1055"><b>6.17.4</b> Access arrangements should permit the removal of the largest and heaviest items of plant without the need for dismantling, except where the plant design specifically provides for a large component to be broken down into smaller parts (eg., sectional air handling plant).</p> <p data-bbox="181 1077 778 1279"><b>6.17.5</b> Plant and switchrooms shall be adequately lit and ventilated to provide a safe working environment. Ventilation provisions should be sufficient to avoid excessive heat build up and provide sufficient combustion and ventilation air in boiler rooms.</p> <p data-bbox="181 1301 778 2007"><b>6.17.6</b> The detailed arrangements should provide for:</p> <ul data-bbox="268 1357 778 2007" style="list-style-type: none"> <li>• Drainage gulleys in plant rooms housing water services to avoid flooding in emergencies. Gulleys should be arranged to prevent loss of water seal or be provided with a trap replenishment system;</li> <li>• Adequate socket outlets with ELV/RCD protection;</li> <li>• Floors to be suitably sealed to reduce dusting;</li> <li>• Air intakes to be sited well away from sources of airborne contaminants;</li> <li>• Noise and vibration attenuation as necessary to ensure a satisfactory environment in adjacent areas; and</li> <li>• Primary plant such as boilers, chillers, generators, substations to be located wherever practicable at ground floor level.</li> </ul> | <p data-bbox="810 573 1011 607">For safety reasons.</p> <p data-bbox="810 696 1347 763">To ensure sufficient space is available for planning, operational and maintenance reasons.</p> <p data-bbox="810 853 1374 887">To minimise disruption and cost during replacement.</p> <p data-bbox="810 1357 1129 1391">For health and safety reasons.</p> <p data-bbox="810 1536 1362 1603">For safety reasons (ELV/RCD is Extra Low Voltage/ Residual Current Device).</p> <p data-bbox="810 1704 1011 1738">For safety reasons.</p> <p data-bbox="810 1906 1331 1973">To ease maintenance, replacement and minimise structural provisions.</p> |

| REQUIREMENT   | COMMENT   |
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| <p data-bbox="181 434 778 544"><b>6.17 PLANT SWITCH AND LIFT MOTOR ROOMS AND SERVICE DUCTS (CONT'D)</b></p> <p data-bbox="181 573 767 741"><b>6.17.7</b> Careful consideration should be given to providing sufficient vertical services ducts segregated as necessary according to function and provided with removable access panels for inspection and maintenance.</p> <p data-bbox="181 768 767 936"><b>6.17.8</b> Attention should be given to the need to provide accommodation for IT containment systems in the form of space for vertical risers and IT cupboards located one above the other on multi storey developments.</p> <p data-bbox="181 963 767 1059"><b>6.17.9</b> Lift machine rooms, shaft sizes and other facilities should comply with the requirements of BS5665.</p> <p data-bbox="181 1086 767 1216"><b>6.17.10</b> Lift machine rooms should contain only lift machinery and any associated control equipment and there should be safe access to all lift machine rooms (ie., by a fixed staircase).</p> <p data-bbox="181 1243 767 1440"><b>6.17.11</b> Access arrangements to lift motor rooms, plantrooms etc., should ensure that it is not necessary for any person to have to pass through such areas to gain access to any occupied part of the building, or to leave the building.</p> | <p data-bbox="810 573 1374 640">To permit flexibility in use, facilitate maintenance and for safety reasons.</p> <p data-bbox="810 768 1094 797">To permit flexibility in use.</p> <p data-bbox="810 963 1358 1028">To identify an acceptable standard and allow future replacement possibly from another manufacturer.</p> <p data-bbox="810 1086 1010 1115">For safety reasons.</p> <p data-bbox="810 1243 1010 1272">For safety reasons.</p> |
| <p data-bbox="181 1480 778 1547"><b>6.18 LOADING BAYS</b></p> <p data-bbox="181 1581 767 1742"><b>6.18.1</b> Loading bays including any loading bay lifts or dock levellers should only be provided where called for in the design brief, and should be designed specifically to suit the intended purpose.</p> <p data-bbox="181 1776 767 1937"><b>6.18.2</b> Where loading bays are provided, the developer/project manager should ensure that adequate vehicular access is provided for the type of vehicles which it is intended will use the loading bay.</p>  | <p data-bbox="810 1581 1406 1677">Loading bays are not normally required in office buildings and should not be provided unless the need is specifically included in the Client's brief.</p> <p data-bbox="810 1776 1369 1805">To ensure the design will suit the intended purpose.</p>  |

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| <p><b>6.18 LOADING BAYS (CONT'D)</b></p>  |  |
| <p><b>6.18.3</b> The vehicular access should not cause a hazard to other users of the building or the public.</p>   | For safety reasons.  |
| <p><b>6.18.4</b> Due attention should be given to any security provisions and the need for specific facilities such as motorised doors/roller shutters, warm air curtains etc., that may be referred to in the design brief.</p>  |  |
| <p><b>6.19 WASTE DISPOSAL</b></p>   |  |
| <p><b>6.19.1</b> Waste disposal facilities adequate for, and suited to the purpose and size of the development should be provided, preferably in a location with no internal access to the building and housing containers compatible with the local refuse disposal service.</p> | The requirements for the facility are that it should not adversely affect the health of the users or cause a nuisance to adjacent occupiers. |
| <p><b>6.19.2</b> The location should provide a lockable covered area resistant to vermin attack and should contain a separate space for the storage of recyclable materials.</p>  |  |
| <p><b>6.19.3</b> Care shall be given to the location and design of waste disposal facilities for kitchen waste.</p>   |  |
| <p><b>6.19.4</b> Special requirements may be required for security reasons, for the disposal of paper or specialist waste products as defined in the design brief, and the developer/project manager should comply with all such requirements.</p>                                |  |
| <p><b>6.19.5</b> Waste disposal chutes should not be provided unless specifically required by the design brief.</p>   | Fire hazard.   |
| <p><b>6.20 LIFTS</b></p>  |  |
| <p><b>6.20.1</b> Preferably lifts should be provided in all buildings other than single storey with a preference for a minimum of two lifts to enable a service to be provided in the event of breakdown or essential maintenance on one lift.</p>                                | To facilitate staff movement and to permit use by ambulant disabled people or wheelchair users.  |

| REQUIREMENT   | COMMENT   |
|---|---|
| <p><b>6.20 LIFTS (CONT'D)</b></p> <p><b>6.20.2</b> All lifts should comply with the requirements of BS5655 and be suitable for use by disabled persons (see Section 5).</p> <p><b>6.20.3</b> The lift provision for passenger service should be based on a requirement for conveying 16% of the occupants requiring a lift service (normally all occupants of 2nd floor and above) within a 5 minute period with a maximum waiting time of 30 seconds.</p> <p><b>6.20.4</b> Where basements are provided at least one lift shall serve the basement level or such greater number as may be required to comply with the passenger service requirements identified above (eg., where basement parking or occupied accommodation at basement level occurs).</p> <p><b>6.20.5</b> Multi-lift installations should be grouped collectively and arranged with interconnecting control systems.</p> <p><b>6.20.6</b> Normally, and unless specific goods lifts are provided, at least one of the passenger lifts should also be suitable for goods carriage and the developer/project manager should provide a set of protective removable drapes for use with the goods/passenger lift(s).</p> <p><b>6.20.7</b> Specifically designed goods lifts should only be provided where required by the design brief, or where necessary for the transportation of goods which are unsuitable for carriage in passenger/goods lifts (eg., kitchen waste, raw foodstuffs and the like).</p> <p><b>6.20.8</b> Where specific goods lifts are provided they should be located in a suitable position to facilitate the easy transport of goods to and from the building. The developer/project manager should ascertain which access position is to be used for the movement of goods and position the lift accordingly.</p> | <p>To establish a reasonable level of lift service provision.</p> <p>To facilitate a lift service to all levels and to enable goods to be transported to and from a basement level.</p> <p>For economy in cost and to reduce waiting times.</p> <p>To eliminate the need in most buildings for a specific goods lift which increases capital costs and utilises floor space.</p> <p>To ensure adequate transportation facilities for goods.</p> |



| REQUIREMENT   | COMMENT  |
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| <p><b>6.20 LIFTS (CONT'D)</b></p> <p><b>6.20.9</b> Specific goods lifts should not be accessible for public use and should not be located in the same lobby as passenger lifts.</p> <p><b>6.20.10</b> Document hoists should only be provided where specifically required by the design brief. The developer/project manager should be aware of the inherent dangers of this type of lift and ensure that location, access and design detailing fully address safety matters. The type and location of any document hoist should be agreed with the Client prior to incorporation in the works.</p> <p><b>6.20.11</b> Fire fighting lifts should be provided where necessary to comply with Building Regulations, or where specifically required by the Project Fire Consultant.</p> <p><b>6.20.12</b> Any lift designated as a fire fighting lift should comply with the requirements of BS5588 and the Fire Consultant.</p> <p><b>6.20.13</b> The developer/project manager should be aware of the special requirements of fire fighting lifts, not only of the lift itself but also the associated lobbying arrangements, ventilation, drainage, electrical supply requirements etc.</p> <p><b>6.20.14</b> Further information concerning the technical requirements associated with lift installations are contained in <a href="#">Section 9.17</a>.</p> | <p>To achieve optimum performance and avoid inconvenience.</p> <p>For safety reasons. Most offices will not require document hoists. Where they are provided staff should be made aware of the inherent dangers and that they are intended for documents and not for passenger use.</p> <p>To aid the Fire Brigade in dealing with a fire emergency.</p> |
| <p><b>6.21 WINDOW AND FACADE CLEANING ACCESS</b></p> <p><b>6.21.1</b> The developer/project manager should ensure that suitable arrangements, access and facilities are incorporated for window and facade cleaning. The preferred method is by cleaning from the inside.</p>   | <p>The main criterion for window cleaning is that this should be capable of being carried out safely and without undue disturbance to staff.</p>   |

| REQUIREMENT   | COMMENT  |
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| <p data-bbox="181 434 778 544"><b>6.21 WINDOW AND FACADE CLEANING ACCESS (CONT'D)</b></p> <p data-bbox="181 573 778 779"><b>6.21.2</b> Cleaning of atria and roofing glazing can be an expensive undertaking and careful consideration should be given by the developer/project manager, who shall state the means by which atria and roof glazing may be accessed for cleaning.</p> <p data-bbox="181 801 778 936"><b>6.21.3</b> If a cleaner requires to stand on a ladder or other object or lean out of the window in order to carry out the cleaning process, then a suitable form of restraint should be provided.</p> <p data-bbox="181 958 778 1059"><b>6.21.4</b> Where windows are to be cleaned from an external ladder, then ladder restraints should be provided.</p> <p data-bbox="181 1081 778 1395"><b>6.21.5</b> If the design of the building envelope requires that cleaning facilities are required other than for windows, (eg., fully glazed elevations), then a cradle system either powered or manually operated may be provided. The developer/project manager should note the stringent safety requirements for these items, and shall provide the Client with full details of the cradle system proposals prior to incorporation.</p> <p data-bbox="181 1417 778 1552"><b>6.21.6</b> Suspended access equipment should be provided where windows are over 9 m above ground level and cannot be safely cleaned from inside.</p> <p data-bbox="181 1574 778 1742"><b>6.21.7</b> Buildings over 9 m and up to 30 m high should be provided with facilities for either manual or power operated cradles and above this height must have the facility for power operated cradles.</p> | <p data-bbox="810 573 1406 707">The main criterion for atria and roof glazing cleaning is that this should be capable of being carried out economically and safely and without undue disturbance to staff.</p> |

| REQUIREMENT   | COMMENT  |
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| <p><b>6.22 CYCLE STORE</b></p> <p><b>6.22.1</b> A cycle store of the size required by the design brief should be provided in a location which ensures the safety of the cycles, preferably within a controlled and monitored area.</p> <p><b>6.22.2</b> The store should provide covered shelter for the cycles, and if open sided should be carefully orientated to provide shelter from driving rain in the prevailing wind direction.</p> <p><b>6.22.3</b> Adequate racks shall be provided within the store for the securing of cycles.</p>   | <p>For the benefit of staff using this method of travel. If possible the store should be capable of being monitored from inside the building to improve security.</p> <p>To provide protection from the elements.</p> <p>To improve security.</p>                    |
| <p><b>6.23 STRONG/SECURE ROOMS</b></p> <p><b>6.23.1</b> Strong/secure rooms should be provided where required by the design brief and should be designed and constructed in accordance with any specific requirements of that brief.</p> <p><b>6.23.2</b> Strong rooms are normally of heavy specialised reinforced concrete construction and may require greater floor loadings than standard office areas.</p> <p><b>6.23.3</b> Strong/secure rooms should be sited to minimise the risk of attack to users.</p> <p><b>6.23.4</b> Any special security measures as detailed by the Client's security advisors should be incorporated.</p> | <p>Details of any strong/secure rooms should be advised at an early stage in planning to allow for the inclusion of any necessary strengthening or electronic security systems in the initial construction and avoid additional costs associated with retrofits.</p> |
| <p><b>6.24 CHILDCARE FACILITIES</b></p> <p><b>6.24.1</b> Where childcare facilities are required they will be identified and quantified in the design brief.</p> <p><b>6.24.2</b> These may range from a small reception/play area for after school care to a full creche and day nursery.</p>  | <p>Requirements for child care facilities will vary for individual Departments and location and each scheme should be assessed on its own merits before any decision taken.</p>  |

| REQUIREMENT  | COMMENT   |
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| <p data-bbox="181 434 780 510"><b>6.24 CHILDCARE FACILITIES (CONT'D)</b></p> <p data-bbox="181 544 762 674"><b>6.24.3</b> The design, construction and finished standard of any childcare provision should reflect as a minimum the standard provided in Local Authority establishments.</p> <p data-bbox="181 701 762 831"><b>6.24.4</b> In greenfield or office park locations it may be acceptable for a number of places to be made available within a communal facility to provide for all users in the overall development.</p> <p data-bbox="181 857 770 1059"><b>6.24.5</b> Where the facilities are provided within the confines of the site then care shall be exercised in design to reflect the special needs and dangers for young children eg., siting accommodation close to a fire exit, providing guard rails at road sides opposite exit positions.</p> <p data-bbox="181 1086 762 1144"><b>6.24.6</b> The design of childcare facilities should comply with the requirements of The Children's Act.</p> | <p data-bbox="810 701 1406 831">This should be investigated by the Client and should it be considered that this provision is necessary, they may consider agreeing suitable arrangements in extending the use of the facility to other users.</p> |

**SECTION 7**  
**STRUCTURE AND EXTERNAL**  
**ENVELOPE**

# SECTION 7

## STRUCTURE AND EXTERNAL ENVELOPE

The Developer or Project Manager must comply with all relevant and current statutory instruments, regulations and the requirements of all statutory and regulating authorities

| REQUIREMENT  | COMMENT   |
|--|---|
| <p><b>7.1 CALCULATIONS</b></p> <p><b>7.1.1</b> Full structural design calculations should be prepared by or under the supervision of a chartered civil or structural engineer, and comply with all current regulations, design codes etc. The engineer must provide a design certificate to this effect, and the calculations should be made available to the Client as soon as practicable.</p> <p><b>7.1.2</b> The calculations should be checked, and certified as checked by an independent chartered structural/civil engineer (either from a different practice or a partner/director from a separate unit within the originating firm). A certificate confirming compliance with current regulations and design codes etc., must be provided by the independent civil/structural engineer and forwarded to the Client as soon as practicable.</p> | <p>To comply with regulations and ensure the structure is designed by competent persons. Calculations are to be provided for evaluation by the Client's advisors.</p> <p>To provide an independent check on the design of the structure for safety reasons.</p> |
| <p><b>7.2 FOUNDATIONS</b></p> <p><b>7.2.1</b> Foundations should be of a design and type suitable for the ground conditions, the form of construction and the structural load such that there will be no deleterious effect on the structure or fabric from any possible settlement or differential movement.</p> <p><b>7.2.2</b> The developer/project manager are referred to <a href="#">Section 2</a> in respect of obligations regarding site investigations.</p>   | <p>To ensure the most suitable form of foundation to maintain the stability of the structure over the design life of the building.</p>  |

| REQUIREMENT   | COMMENT   |
|---|---|
| <p><b>7.3 FRAME</b></p> <p><b>7.3.1</b> Care should be exercised in the design and choice of materials forming the structural frame to avoid creating any situations which could reduce the life expectancy (eg., corrosion of structural steel or reinforcing steel, corrosion of brick ties, alkali aggregate reaction of carbonation of concrete)</p> <p><b>7.3.2</b> Care should also be exercised to ensure the stability of the frame and its various elements both during and post construction. Movement joints should be incorporated in the structural frame as necessary.</p> <p><b>7.3.3</b> A flat soffit form of construction is preferred where possible but this should not be interpreted as a requirement for a 'plate' floor but one where a separate services' zone is made available below the general level of the underside of the structure (eg., the bottom level of a ribbed floor; see Section 4.3 for further information).</p> <p><b>7.3.4</b> The structural floor loading for general office accommodation should be based on a minimum superimposed floor load of <math>4 \text{ kN/m}^2 + 1 \text{ kN/m}^2</math> for partitioning, or such other value as may be specified in the design brief.</p> <p><b>7.3.5</b> Floor loadings for plant areas, any specially designated stationery storage area, strong rooms etc., should be designed for higher loads as appropriate to the function and in accordance with British Standard recommendations.</p> <p><b>7.3.6</b> Floor slabs should be designed to have no discernible vibration response to footfall excitation, due to Low Natural Frequency characteristics (SCI Publication 076 'Design Guide on the Vibration of floors').</p> | <p>To ensure quality, safety, freedom from maintenance and compatibility of materials.</p> <p>To resist progressive collapse and provide a safe structure.</p> <p>To provide maximum flexibility for the distribution of service facilities both initially and in the future.</p> <p>To establish a floor loading level appropriate to the general needs of the building and taking account of potential future use and preserving potential for sell-on. Where lower loadings can be justified on the grounds of structural cost savings this should be duly considered as appropriate to the circumstances.</p> <p>To ensure that special floor loadings higher than the 'norm' are properly considered and catered for in the design.</p> <p>To avoid noise transmission to rooms below.</p> |

| REQUIREMENT   | COMMENT   |
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| <p><b>7.3 FRAME (CONT'D)</b></p>  |   |
| <p><b>7.3.7</b> Floors to plant rooms should be suitably designed in terms of span thickness and mass so as to provide a stable base for vibration control mounts to individual plant items.</p>  | <p>To enable vibration control of plant and machinery.</p>  |
| <p><b>7.4 EXTERNAL FINISHES</b></p>   |   |
| <p><b>7.4.1</b> The general requirement for external finishes is that they should be sympathetic to the surroundings both in respect of adjacent buildings, landscape and the local environment.</p>  | <p>To satisfy planning requirements and to ensure the building is in harmony with its surroundings.</p> |
| <p><b>7.4.2</b> Finishes should be chosen with due regard to the overall life of the building and to provide an envelope which:</p> <ul style="list-style-type: none"> <li>• Satisfies the requirement of visual appearance throughout the working life;</li> <li>• Addresses environmental concerns;</li> <li>• Is easy to maintain;</li> <li>• Has low cost in use; and</li> <li>• Is wind resistant and water tight to recognised British Standard levels of acceptability.</li> </ul> |   |



| REQUIREMENT  | COMMENT  |
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| <p><b>7.5 EXTERNAL ENVELOPE WALLS</b></p>  |  |
| <p><b>7.5.1</b> External walling should be of good quality construction, designed to give maximum durability with minimum maintenance.</p>   | <p>To minimise costs in use and future disruption.</p>   |
| <p><b>7.5.2</b> External wall finishes should be durable and generally chosen because they require the absolute minimum of or no maintenance. Materials shall provide the required level of security. Construction should respect good practise to avoid intricate and complicated detailing which could lead to defects and premature failing, whilst respecting the requirements for an aesthetically pleasing building.</p> | <p>To minimise maintenance costs in use.</p>   |
| <p><b>7.5.3</b> Any ties, fixing anchors and the like are to be austenitic stainless steel.</p>  | <p>To avoid corrosion leading to expensive repairs.</p>  |
| <p><b>7.5.4</b> All necessary movement joints should be incorporated in accordance with the manufacturer's instructions and British Standard recommendations.</p>  | <p>To permit expansion and movement in order to minimise cracking and need for repairs.</p>  |
| <p><b>7.6 EXTERNAL ENVELOPE: CLADDING AND INFILL PANELS</b></p>  |  |
| <p><b>7.6.1</b> The design of any cladding should be suitable for the purpose, and not have any deleterious effect to other parts of the building.</p>   | <p>To ensure the choice of cladding/infill materials does not reduce the design life or result in excessive maintenance costs.</p> |
| <p><b>7.6.2</b> Fixings for cladding or infill panels are to be of non ferrous composition.</p>  | <p>To avoid corrosion and the potential danger from falling tiles etc., and to minimise maintenance.</p>                           |
| <p><b>7.6.3</b> All necessary movement joints should be incorporated in accordance with the Manufacturer's instructions and British Standard recommendations.</p>  | <p>To permit the building to move under stress and minimise cracking and repairs.</p>  |
| <p><b>7.6.4</b> The cladding and infill system will be designed to be sufficiently strong to resist any stress or thermal movements and should be fully in accordance with relevant British Standards.</p>   | <p>For safety and to establish an acceptable standard.</p>   |

| REQUIREMENT   | COMMENT  |
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| <p data-bbox="181 434 778 510"><b>7.7 EXTERNAL ENVELOPE: WINDOWS</b></p> <p data-bbox="181 544 778 779"><b>7.7.1</b> Windows should be designed to provide adequate ventilation without creating draughts and should be impervious to rain penetration when closed. The window design and detailing should be based on the exposure classifications defined in BS6375 relevant to the building location.</p> <p data-bbox="181 801 778 902"><b>7.7.2</b> Windows should be double glazed and be selected to provide maximum durability with minimum maintenance.</p> <p data-bbox="264 925 719 958">The opening sections of windows shall be:</p> <ul data-bbox="264 981 778 1541" style="list-style-type: none"> <li>• User friendly;</li> <li>• Designed to minimise rain ingress when open and to avoid conflict with blinds and curtain tracks during normal use and during cleaning operations;</li> <li>• Suitably sized and controlled to enable opening by persons of medium stature in all weather conditions;</li> <li>• Arranged so as to avoid obstruction of footpaths and creating a hazard for the partially sighted; and</li> <li>• Designed to be secure against entry at night where sections are to be left open at night to assist in passive cooling during times of hot weather.</li> </ul> <p data-bbox="181 1563 778 1630"><b>7.7.3</b> Operating instructions for windows should be provided for the guidance and safety of users.</p> <p data-bbox="181 1653 778 1787"><b>7.7.4</b> All external glazing should be safely cleanable wherever possible from inside the building using reversible sections which lock in position for cleaning.</p> | <p data-bbox="810 544 1401 645">To maintain comfortable working conditions and avoid damp penetration and to ensure window design takes account of differing levels of exposure to the elements.</p> <p data-bbox="810 801 1074 835">For energy conservation.</p> <p data-bbox="810 1037 1129 1070">For the convenience of users.</p> <p data-bbox="810 1182 1329 1216">For safety reasons and the convenience of users.</p> <p data-bbox="810 1305 1342 1339">For safety reasons, and to comply with legislation.</p> <p data-bbox="810 1417 1034 1451">For security reasons.</p> <p data-bbox="810 1653 1010 1686">For safety reasons.</p> |

| REQUIREMENT  | COMMENT  |
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| <p><b>7.7 EXTERNAL ENVELOPE: WINDOWS (CONT'D)</b></p> <p><b>7.7.5</b> If it is necessary for a person to lean out of a window to clean parts of the glazing or to stand on steps inside the building then suitable safety anchors should be provided.</p> <p><b>7.7.6</b> Locks should be provided to all windows at ground floor level and wherever readily accessible from outside the building.</p> <p><b>7.7.7</b> Battens should be provided for the fixing of blinds at all windows and fixings for curtain tracks should be provided for rooms stated in the design brief.</p> <p><b>7.7.8</b> All necessary security measures which are identified in the design brief should be incorporated including selection of appropriate type of glass, use of anti-shatter film, bomb blast curtains etc.</p> | <p>For health and safety reasons.</p> <p>For security.</p> <p>For security and to avoid damage or danger from terrorist attack.</p>  |
| <p><b>7.8 EXTERNAL ENVELOPE: PITCHED ROOFS</b></p> <p><b>7.8.1</b> Wherever possible pitched roofs are preferred to flat roofs and should be formed of materials of known and tested performance.</p> <p><b>7.8.2</b> Due consideration should be given to the overall relative economies of providing warm roof voids (insulation under roof) or cold roof voids (insulation on ceiling), the requirements for ventilation of roof voids and the insulation/frost protection of any water services/tanks etc., within the void.</p> <p><b>7.8.3</b> Due consideration should be given to the problems of snow slip and the use of snow boards particularly on large areas of pitched roofing.</p>   | <p>A tried and tested design and one which enables localised repair without the wholesale replacement associated with sheet materials.</p> <p>To ensure an economic design taking due account of energy conservation.</p> <p>To avoid hazard and damage to guttering and for safety reasons.</p> |

| REQUIREMENT  | COMMENT  |
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| <p><b>7.8 EXTERNAL ENVELOPE: PITCHED ROOFS (CONT'D)</b></p>  |  |
| <p><b>7.8.4</b> Internal gutters should be avoided wherever practicable.</p>   | <p>To avoid potential for leaks.</p>   |
| <p><b>7.8.5</b> Roofs should be provided with appropriate safety facilities to allow safe inspection with any access ways protected with designated walkways and hand rails, lighting facilities and suitable warning notices</p>  | <p>For safety of operations during inspection and maintenance.</p>   |
| <p><b>7.9 EXTERNAL ENVELOPE: FLAT ROOFS</b></p>  |  |
| <p><b>7.9.1</b> Where the use of flat roofs is unavoidable they should be designed and constructed in accordance with current best practise guidance.</p>  | <p>Flat roofs tend to have higher and more frequent levels of maintenance. Leaks in flat roofs often manifest themselves at a point far removed from the source increasing expenditure and difficulty in tracing faults.</p> |
| <p><b>7.9.2</b> Lightweight and single ply membranes should be avoided and flat roofs should normally be of multi-layer construction with a minimum fall of 1 in 40.</p>   | <p>To avoid 'ponding' and to ensure a clean run off of water.</p>  |
| <p><b>7.9.3</b> Internal gutters should be avoided wherever practicable.</p>   | <p>Internal gutters are often a weak point and cause disruption when repairs are needed. Rainwater is better channelled to the roof perimeter.</p>   |
| <p><b>7.9.4</b> Roofs should be provided with appropriate safety facilities to allow safe inspection with any access ways protected with designated walkways and hand rails, lighting facilities and suitable warning notices.</p> | <p>For safety of operatives during inspection and maintenance.</p>   |

**SECTION 8**  
**INTERNAL ELEMENTS**

# SECTION 8

## INTERNAL ELEMENTS

The Developer or Project Manager must comply with all relevant and current statutory instruments, regulations and the requirements of all statutory and regulating authorities

| REQUIREMENT   | COMMENT   |
|---|---|
| <p><b>8.1 BASEMENTS</b></p> <p><b>8.1.1</b> In general basements should be avoided wherever possible other than for plantrooms, storage and similar accommodation. To ensure basement areas, which are subject to dampness and ventilation problems, are kept to a minimum and preferably only used for ancillary accommodation.</p> <p><b>8.1.2</b> Where basements are to be provided the design, construction methods and techniques to be adopted to ensure watertightness should be agreed with the Client prior to incorporation.</p>   | <p>To ensure a satisfactory standard is adopted.</p>  |
| <p><b>8.2 FLOORS</b></p> <p><b>8.2.1</b> Each storey should be on a common level but ramped interconnection may be acceptable in exceptional cases.</p> <p><b>8.2.2</b> General floor loadings should be as detailed under <a href="#">Section 7.3</a> but the developer/project manager should check the design to ensure that tenants' concentrated loads from safes, racking etc., as identified in the design brief, are safely distributed or the structure is locally strengthened and foundations increased as necessary to suit the increased loading.</p> <p><b>8.2.3</b> Additional floor loadings may also be required in certain areas to accommodate filing systems, mobile racking etc. The developer/project manager should make due allowance for these additional loads, where required by the design brief.</p> | <p>To permit flexibility in use and ease of passage by wheel chair users.</p> <p>To ensure structural stability of the building.</p> <p>The Client should consider where very heavy load concentrations may occur and incorporate any special requirements in the design brief.</p> |

| REQUIREMENT  | COMMENT  |
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| <b>8.2 FLOORS (CONT'D)</b>   |  |
| <p><b>8.2.4</b> Generally, the floors throughout are raised access floors utilising fully adjustable metal pedestals of recognised manufacture and the following criteria will apply:</p> <ul style="list-style-type: none"> <li>• Type - full access; and</li> <li>• Structural Grade - medium. i.e 5KN/m<sup>2</sup></li> </ul> <p>It is unlikely that a clear void of less than 150 mm for normal I.T. wiring, or 225 mm if fibre optics are to be used will be acceptable.</p> <p>The minimum clear floor space must however take account of the detailed engineering services design solutions and the occupying departments specific I.T. cabling requirements.</p> <p><b>8.2.5</b> Raised floor panels are to be designed to receive surface coverings which match the panel grid.</p> <p><b>8.2.6</b> Care should be exercised when locating water pipes normally around the perimeter of raised floor voids and upstands should be provided to prevent leakage into the general floor area, or alternatively water leak detection systems should be incorporated appropriate to the risk.</p> <p><b>8.2.7</b> In certain areas (eg., entrance, reception, toilets) raised access flooring will not be suitable, and concrete floors should be provided with finishes to suit the purpose.</p> <p><b>8.2.8</b> An anti-dust sealant should be applied to self finished concrete floors.</p> <p><b>8.2.9</b> Care should be exercised to ensure that all concrete floors and finishes are correctly mixed, laid and cured to ensure a smooth level surface suitable to receive final floor coverings without deleterious effect.</p> <p><b>8.2.10</b> Specialist finishes may be required in specific areas identified in the design brief and these should be in full accordance with the relevant manufacturer's specifications and requirements.</p> | <p>For flexibility in servicing, particularly in respect of the increasing use of information technology (IT) systems. To establish an acceptable standard.</p> <p>To facilitate under floor services to be installed including the need for crossovers and radius restriction of optic fibres.</p> <p>To facilitate easy access and maintenance.</p> <p>To avoid damage to electrical/IT services from water leaks.</p> <p>To prevent dust nuisance and erosion from cleaning operations.</p> |

| REQUIREMENT  | COMMENT   |
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| <p><b>8.2 FLOORS (CONT'D)</b></p>  |   |
| <p><b>8.2.11</b> Specialist finishes in certain plant areas should be provided as necessary to suit the risk from spillage (eg., oil, battery acid, water treatment chemicals etc.).</p>   | <p>To avoid damage from spillage.</p>   |
| <p><b>8.3 WALLS</b></p>  |   |
| <p><b>8.3.1</b> The inner leaf of all external walls and the walls to toilets, stairs, lift lobbies and similar common areas should be of brick/block construction. Plantroom walls should generally be constructed from brick/block within the internal areas of the building but roof plantrooms may use different wall constructions which are suitable for the purpose, offer the necessary degree of fire protection, noise attenuation, support facilities for fixing of services and other related matters.</p> | <p>To provide a durable hard wearing finish to minimise damage and maintenance needs.</p> |
| <p><b>8.3.2</b> In areas other than plant rooms (where a fairfaced finish is acceptable) the wall finish should be plaster or tiling where appropriate (eg., toilets, kitchens, shower rooms).</p>   |   |
| <p><b>8.3.3</b> Details of plaster and other finishes are referred to in <a href="#">Section 6.1</a> and <a href="#">Section 8.8</a>.</p>  |   |
| <p><b>8.3.4</b> Generally the sub division of the occupied areas is to be by means of demountable partitions as detailed in <a href="#">Section 8.4</a>.</p>   | <p>For flexibility in planning arrangements by the occupying Departments.</p>             |



| REQUIREMENT  | COMMENT   |
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| <div style="background-color: #e0e0e0; padding: 5px; border: 1px solid black;"><b>8.4 INTERNAL ELEMENTS: PARTITIONS</b></div>  |   |
| <p><b>8.4.1</b> Partitions should be of the proprietary dry construction steel framed, plasterboard faced type, finished prior to erection with an applied vinyl sheet capable of withstanding normal office traffic without deterioration and being easily washed down.</p> | <p>To indicate a type of partition which will give satisfactory use and can often be re-used when changes are made.</p>                             |
| <p><b>8.4.2</b> Partitions should be from a reputable manufacturer and should be not less than medium grade structural.</p>  | <p>To define an acceptable standard. Medium grade is suitable for general office use without excessive maintenance problems from impact damage.</p> |
| <p><b>8.4.3</b> The design should achieve a minimum standard of 38 dB(A) normalised level difference between rooms and also between rooms and corridors.</p>   | <p>To ensure adequate acoustic isolation to reduce noise transmission.</p>  |
| <p><b>8.4.4</b> A minimum standard of 45 dB(A) normalised level difference is required for sound improved partitions where privacy is required (eg, interview and conference rooms and private offices) or to enclose a noisy environment (eg, printing machinery).</p>      | <p>To preserve privacy and confidentiality.</p>   |
| <p><b>8.4.5</b> These values should be achieved "as erected" and are the arithmetical mean of the level of differences over the range of 200 Hz to 2500 Hz mean frequencies.</p>   | <p>The remaining sections detail measures necessary to preserve the acoustic integrity of the partitioning.</p>                                     |
| <p><b>8.4.6</b> Where glazing is necessarily incorporated in the partitions, a sound attenuation as close as practicable to that specified for the partition should be achieved.</p>   |   |

| REQUIREMENT   | COMMENT |
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| <div data-bbox="181 434 780 544" style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p><b>8.4 INTERNAL ELEMENTS: PARTITIONS (CONT'D)</b></p> </div> <p><b>8.4.7</b> Considerable care should be taken to ensure the acoustic integrity of partitions is maintained by the provision of suitable sound barriers wherever necessary and the sealing of gaps with approved acoustic sealant. Particular examples are as follows:</p> <ul style="list-style-type: none"> <li>• Where partitions abut solid walls, concrete floors and ceilings;</li> <li>• Where the partition is only taken to the underside of a suspended ceiling, the sound barrier together with the ceiling must achieve the sound rating of the partition;</li> <li>• Where the partition is not taken through raised access floors, the sound barrier together with the floor must achieve the sound rating of the partition;</li> <li>• Where partitions abut heater casings, ducts or trunking, the sound barrier should achieve the sound rating of the partition;</li> <li>• Where pipes, casings and the like pass through a partition, the partition must be very close fitting and gaps sealed tight with acoustic sealer; and</li> <li>• Where air ducts pass through partitions the partition must be very close fitting with gaps sealed tight with acoustic sealer. Cross talk duct attenuators should be fitted as necessary to maintain the sound rating of the partition.</li> </ul> <p><b>8.4.8</b> Doors, frames, door seals and thresholds should be selected and detailed so that they provide as nearly as possible the sound attenuation of the partition.</p> <p><b>8.4.9</b> On completion of the partitioning system, the Client will have the right to be satisfied that the partition system as erected meets the agreed performance criteria.</p> |         |

| REQUIREMENT  | COMMENT  |
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| <p><b>8.4 INTERNAL ELEMENTS: PARTITIONS (CONT'D)</b></p>   |  |
| <p><b>8.4.10</b> It is at the Client's discretion, and at the expense of the developer/project manager, to appoint an independent Testing Authority to carry out tests to prove compliance. Developers must make good, at their own cost, any failure to meet the agreed performance requirements.</p> | <p>To ensure the requirements have been met.</p>   |
| <p><b>8.5 DOORS</b></p>  |  |
| <p><b>8.5.1</b> Internal doors and doorsets should be from a reputable manufacturer.</p>   | <p>This defines an acceptable standard for doors and doorsets in Government offices.</p> |
| <p><b>8.5.2</b> Doors should be self finished for ease of maintenance and of good appearance.</p>  | <p>Self finished doors require less frequent attention than painted doors.</p>           |
| <p><b>8.5.3</b> Doors should be suitable for easy use by disabled persons and due care and attention should be given in the siting and orientation of doors, especially at toilet cores and access routes, to ensure ease of use for wheelchair users (see Section 5).</p>                             | <p>For the convenience of disabled people particularly wheelchair users.</p>             |
| <p><b>8.5.4</b> All doors should provide a minimum clear opening width of 900 mm.</p>  | <p>For the passage of wheelchairs and furniture.</p>                                     |
| <p><b>8.5.5</b> External doors should be suitable for the purpose and provide a secure barrier when locked. Care must be taken to ensure that the design of doors and their surrounds prevent ingress of water and draughts.</p>   | <p>For security, energy conservation and to avoid deterioration.</p>                     |
| <p><b>8.5.6</b> Where entrance doors lead to a reception hallway or atrium, a secondary screen with doors should be provided to form a draught lobby.</p>  | <p>To reduce local heat loss and unsatisfactory temperature gradients.</p>               |
| <p><b>8.5.7</b> Door furniture should be in accordance with Section 8.7.</p>   |  |
| <p><b>8.5.8</b> Fire doors should be of suitable construction and detailing so as to maintain the fire resistant rating required for fire separation purposes.</p>   | <p>For fire safety.</p>  |

| REQUIREMENT   | COMMENT  |
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| <div style="background-color: #d9e1f2; padding: 5px;"><b>8.6 CEILINGS</b></div>   |  |
| <p><b>8.6.1</b> Ceilings generally should be fully accessible and of the modular lay in grid pattern.</p>   | <p>To define an acceptable standard which has inherent flexibility to accommodate change and facilitate maintenance with minimal disruption.</p> |
| <p><b>8.6.2</b> Ceiling systems should be compatible with the selected lighting system with a preference for a 600 mm or 500 mm sq grid capable of receiving 600 mm or 500 mm sq modular recessed lighting fittings respectively.</p>   | <p>For ease of repositioning to give flexibility.</p>  |
| <p><b>8.6.3</b> Ceiling tiles should be clipped to resist uplift and should generally be mineral fibre or metal construction with a high sound absorption coefficient and with patterning carefully selected to minimise maintenance.</p>   | <p>For visual, sound reduction, maintenance and replacement reasons.</p>   |
| <p><b>8.6.4</b> Where the ceiling is intended to form a fire barrier, due account should be taken of the effects of penetrations such as luminaires, vents etc., and all necessary features incorporated to maintain the integrity of the barrier.</p>                            | <p>For fire safety.</p>  |
| <p><b>8.6.5</b> Where ceiling tiles provide access to services' components such as isolating valves, dampers etc., the tile shall be fitted with a discreet identification tab.</p>   | <p>For ease of maintenance.</p>  |
| <p><b>8.6.6</b> Ceilings in kitchens, tea rooms and shower rooms should be suitable for use in a continuous hot humid environment without warping or other deleterious effects.</p>   |  |
| <p><b>8.6.7</b> Where plastered ceilings occur they should be:</p> <ul style="list-style-type: none"> <li>• 2 coat using bonding and finishing plasters;</li> <li>• Proprietary single coat, projection or universal application; or</li> <li>• Plasterboard and skim.</li> </ul> |  |
| <p><b>8.6.8</b> Designers may wish to omit ceilings either for aesthetic effect or to enable thermal mass advantage to be gained for overnight summer cooling.</p>  |  |

| REQUIREMENT   | COMMENT   |
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| <p><b>8.6 CEILINGS (CONT'D)</b></p>   |   |
| <p><b>8.6.9</b> In such cases, proposals should be submitted to the Client to indicate methods of concealment of services, how flexibility in positioning lighting fittings etc., can be achieved in the future and what acoustic treatment is intended. Any proposal to omit ceilings is unlikely to be accepted unless the need is fully justified and designers are able to demonstrate solutions which fully addresses these matters.</p> | <p>To safeguard flexibility.</p>  |
| <p><b>8.7 FITTINGS/IRONMONGERY ETC</b></p>  |   |
| <p><b>8.7.1</b> Ironmongery/door furniture should be good quality satin anodised aluminium or through coloured nylon selected from a reputable manufacturer's range.</p>  | <p>The use of these materials will provide an acceptable standard at reasonable cost and should minimise maintenance.</p>   |
| <p><b>8.7.2</b> All locks should be on a master keyed system with two keys provided for each lock. These keys should be provided with tags with the door number indelibly marked thereon, and mounted in a lockable key cabinet at a location to be agreed with the Client. Any requirement for sub-suites within a grand master system will be advised in the design brief.</p>  | <p>For ease of use by maintenance and supervisory staff. Mastersuite key planning takes time and requirements must be advised at an early stage. The Client must advise the developer of any special security requirements.</p> |
| <p><b>8.7.3</b> All doors to offices and the like should be provided with suited mortice locks, lever handles, card holder/room numbers, kicking plates to both sides and door closers where necessary. Locks should have lever override from within the room.</p>  |   |
| <p><b>8.7.4</b> Corridor and pass doors should have push plates and kick plates to both sides.</p>  | <p>To minimise damage to door faces.</p>  |
| <p><b>8.7.5</b> Doors from plant rooms shall have panic latches in place of handles.</p>  | <p>To facilitate exit in cases of emergency. Plant rooms are areas of danger from which injured persons may need to escape in difficult circumstances.</p>  |
| <p><b>8.7.6</b> Fire escape furniture should be to the satisfaction of the fire regulatory authority.</p>   |   |

| REQUIREMENT   | COMMENT  |
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| <p><b>8.7 FITTINGS/IRONMONGERY ETC (CONT'D)</b></p> <p><b>8.7.7</b> External entrance doors generally are to be provided with 5 lever mortice locks with lever override as a minimum provision, but more onerous requirements may be required. These requirements, which may include access controls, will be stated in the design brief.</p> <p><b>8.7.8</b> The developer/project manager is to provide signage in the building.</p> <p><b>8.7.9</b> Posting boxes will not be provided unless specifically called for in the design brief.</p>   | <p>For security reasons.</p> <p>For ease of use and safety reasons.</p> <p>Post boxes are subject to abuse by vandals and criminal elements. If provided, care should be taken in design. Departments should specify any special requirements.</p> |
| <p><b>8.8 INTERNAL FINISHES</b></p> <p><b>8.8.1</b> It is accepted that a variety of finishes are available for walls, but generally the preferred option is a hard plaster finish as follows:</p> <ul style="list-style-type: none"> <li>• 2 coat using bonding and finishing plasters;</li> <li>• Proprietary single coat, projection or universal application; or</li> <li>• Plasterboard and skim.</li> </ul> <p><b>8.8.2</b> Where walls are to receive ceramic tiling, they should receive a straightening coat of sand and cement rendering. Plaster will not be permitted. Tile adhesives shall be in accordance with the recommendations of the Ceramic Research association.</p> <p><b>8.8.3</b> All walling finishes should be as durable and maintenance free as possible.</p> <p><b>8.8.4</b> The developer/project manager should ensure that the walls in heavily trafficked areas such as entrance and lift halls, main staircases, main circulation areas and the like, receive a durable hard finish.</p> | <p>Plaster provides a good hard wearing surface offering low maintenance and relatively easy repair.</p> <p>To provide a sound level base for tiling and to identify an acceptable standard of adhesion quality.</p>                               |

| REQUIREMENT  | COMMENT  |
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| <b>8.8 INTERNAL FINISHES (CONT'D)</b>  |  |
| <p><b>8.8.5</b> The internal leaf of the external walls in office areas is to be of hard durable construction. The preferred option is brick or blockwork plastered to the hard, with finish to match the partition.</p> <p><b>8.8.6</b> For details of ceiling finishes refer to <a href="#">Section 8.6</a>.</p> <p><b>8.8.7</b> For details of floor finishes refer to <a href="#">Section 6</a> and <a href="#">Section 8.2</a>.</p> <p><b>8.8.8</b> Where paintwork finishes are used the developer/project manager must ensure that all materials and methods used are compatible with the aims of the Client to achieve a building which is as environmentally friendly as possible. Specifically paints and methods of application which emit greenhouse or other harmful gases should not be used.</p> <p><b>8.8.9</b> Water based paints should be used in preference to oil paints in the interests of conservation and maintenance savings.</p> <p><b>8.8.10</b> Service pipes etc., should be clearly identified and should have heat resisting primers/finishing coats on hot surfaces.</p> <p><b>8.8.11</b> Exposed cast iron drainware should receive one coat of aluminium primer prior to full gloss finish.</p> <p><b>8.8.12</b> All colour schemes should be agreed with the Client prior to work being commenced. A reasonable period of time should be allowed in order to obtain all necessary agreements.</p> <p><b>8.8.13</b> In general pastel shades should be used and reflective surfaces avoided in order to provide the best environment for VDU users.</p> | <p>To minimise deterioration in use.</p> <p>For staff comfort, reduction of stress, avoiding glare on VDU screens and to permit reduction in use of artificial lighting.</p> |

| REQUIREMENT  | COMMENT  |
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| <p data-bbox="183 436 778 510"><b>8.8 INTERNAL FINISHES (CONT'D)</b></p> <p data-bbox="183 544 782 784"><b>8.8.14</b> The developer/project manager should provide, prior to completion of the agreement, a detailed room by room finishing schedule. This is to state the finish of floor, walls, ceiling, skirtings etc., and detail any items to be included within the room (eg, blinds, curtains, sinks, fitments etc.).</p> <p data-bbox="263 801 758 869"><b>This schedule is to be attached to and form part of the agreement.</b></p> | <p data-bbox="810 544 1372 611">To permit an accurate assessment and record of the provisions.</p> |



**SECTION 9**  
**BUILDING SERVICES**

# SECTION 9

## BUILDING SERVICES

The Developer or Project Manager must comply with all relevant and current statutory instruments, regulations and the requirements of all statutory and regulating authorities

| REQUIREMENT   | COMMENT   |
|---|---|
| <p><b>9.1 WATER SUPPLY, STORAGE AND DISTRIBUTION</b></p> <p><b>9.1.1</b> Sufficient water storage should be provided to safeguard against mains failure for a 12 hour period, or such greater quantity as may be required by the supply authority. Water storage quantities should not however be any greater than necessary to satisfy the above requirements.</p> <p><b>9.1.2</b> Mains water should be supplied direct to tea rooms, kitchens, staff mess/rest rooms, first aid rooms and taps marked 'Drinking Water'</p> | <p>To enable the building to continue to operate until a mains failure is repaired.</p> <p>Too great a storage leads to a longer turnover period and increases the potential for bacterial growth.</p> <p>To provide an approved drinking water supply. See individual room data sheets.</p>  |
| <p><b>9.2 FUEL APPRAISAL</b></p> <p><b>9.2.1</b> In determining the most suitable fuel for the development, a fuel appraisal investigation should be carried out and a report provided to the Client prior to any decision being taken on the fuel to be adopted. This appraisal should detail the relative implications in terms of capital and revenue costs, security of supply and environmental impact.</p> <p><b>9.2.2</b> Fuel storage should be sufficient for 3 weeks operation at average winter load.</p>          | <p>To ensure the most appropriate fuel is selected for the development.</p> <p>Combined heat and power (CHP) systems offer significant benefits in terms of reduced operating costs and environmentally damaging emissions. The appraisal should therefore analyse the energy load profiles of the specific project to assess the potential for the use of such systems.</p> <p>To provide a reserve in the event of delivery problems or shortage of fuel supply (eg., during industrial action). Storage tanks and control systems should be in accordance with industry standards.</p> |
| <p><b>9.3 BOILERPLANT</b></p> <p><b>9.3.1</b> Generally boilers should be arranged for full automatic control on an unattended basis.</p> <p><b>9.3.2</b> The type of boiler to be incorporated will vary according to circumstances but for many applications a 'modular' boilerplant solution would be an appropriate choice. A minimum of two boilers each rated at 2/3rds of the total load is the minimum requirement.</p>   | <p>To minimise operational labour costs.</p> <p>Provides an efficient service by allowing only the minimum of boilers to operate according to the demand and facilitates maintenance/replacement.</p>   |

| REQUIREMENT   | COMMENT  |
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| <b>9.3 BOILERPLANT (CONT'D)</b>   |  |
| <b>9.3.3</b> Due consideration should be given to the use of condensing type boilers to improve overall energy efficiency particularly when matched to 'warm water' heating systems.  | These boilers can provide major efficiency improvements and are recommended by EPG Guidance.   |
| <b>9.3.4</b> Where necessary, immersion heaters for any DHW calorifiers should be provided for use during boiler maintenance in the summer period.  | To facilitate a continued domestic hot water service.  |
| <b>9.3.5</b> Where justified, pressurised boiler systems may be adopted but wherever practicable for normal LTHW installations a feed and expansion tank solution is preferred to a pressurised expansion vessel and filler system.   | To minimise maintenance, the need for insurance inspections, and to avoid 'over complication' and reliance on electro/mechanical systems.                    |
| <b>9.3.6</b> For safety reasons boilers and refrigeration plant should not be located in a common plantroom.  | To reduce the possibility of thermal decomposition of refrigerants producing toxic gases in the event of a leakage of refrigerant being drawn into a boiler. |
| <b>9.3.7</b> For large boilerplants designed to meet a wide range of operational outputs, separate flues are preferred. Where standby plant is provided flues should be designed to accommodate both duty and standby plant operating together as this operating mode may occur during periods of exceptionally cold weather. | To enable any standby boilers to be used in exceptionally cold weather conditions.   |
| <b>9.4 HEATING INSTALLATIONS</b>  |  |
| <b>9.4.1</b> The preferred form of heating for office accommodation is a two pipe, LTHW perimeter heating system arranged wherever practicable on a reverse return basis.   | To permit flexibility of office layout and offset the heat loss at source.   |
| <b>9.4.2</b> Positioning of final heat emitters and controls should take due account of potential future partitioning layouts and should be carefully integrated with the internal facade arrangements.   | To permit future changes in partitioning layout and for correct location in terms of maintenance, cleaning and aesthetics.                                   |

| REQUIREMENT   | COMMENT   |
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| <p><b>9.4 HEATING INSTALLATIONS (CONT'D)</b></p>  |   |
| <p><b>9.4.3</b> Where compatible with the type of system, thermostatic control valves should be provided and wherever practicable on individual heating emitters.</p>   | <p>To provide local control and ensure even temperatures and minimise energy consumption.</p>   |
| <p><b>9.4.4</b> Circulating pumps should be duplicated on a duty/standby basis and arranged for automatic changeover in the event of failure.</p>   | <p>To enable a continued service in the event of pump failure.</p>  |
| <p><b>9.5 MECHANICAL VENTILATION AND AIR CONDITIONING</b></p>   |   |
| <p><b>9.5.1</b> If central plant ducted mechanical toilet extract ventilation systems are adopted in preference to local individual systems then extract fans should be duplicated, time switch controlled and arranged for automatic changeover in the event of failure of the duty fan.</p>   | <p>To provide a continued service in the event of failure of a main fan.</p>  |
| <p><b>9.5.2</b> Toilet extract systems should not be connected to extract systems from other areas except refuse disposal areas or similar accommodation. Where localised extract systems are provided, time control should be incorporated or where appropriate and for energy conservation, light switch/presence detector operated with timed overrun.</p> | <p>For hygiene reasons and to avoid transfer of smells to occupied areas.</p> <p>To minimise running times and so reduce energy consumption and costs in use.</p> |
| <p><b>9.5.3</b> Where space humidity for general office accommodation is anticipated to frequently lie outside the range 30% to 70% RH then humidity control equipment should be incorporated to adjust the humidity value to within this range.</p>  | <p>The 30% to 70% range is considered a reasonable provision for occupancy comfort.</p> <p>To give improved comfort if deemed necessary.</p>                      |

| REQUIREMENT  | COMMENT  |
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| <p data-bbox="183 436 778 542"><b>9.5 MECHANICAL VENTILATION AND AIR CONDITIONING (CONT'D)</b></p> <p data-bbox="183 571 778 907"><b>9.5.4</b> The exact choice of air conditioning or comfort cooling systems will depend on the detailed circumstances of the individual project. Designers should carry out an option appraisal of suitable systems and for refrigeration loads in excess of 200 kW should submit a report to the project advisor detailing the systems analysed, with particular reference made to the comparative performance in the following matter:</p> <ul data-bbox="263 929 651 1070" style="list-style-type: none"> <li>• capital and revenue costs;</li> <li>• environmental performance; and</li> <li>• Health and Safety risks.</li> </ul> <p data-bbox="263 1093 718 1160">The report must include conclusions and recommendations arising from the analysis</p> <p data-bbox="183 1182 778 1317"><b>9.5.5</b> The use of evaporative condensers and wet cooling towers should, in general, be avoided to reduce the potential for legionella growth and exposure.</p> | <p data-bbox="810 571 1380 705">To ensure the choice of system is appropriate to the needs of the Client and is the best "fit" for the particular range of circumstances likely to be encountered in practice.</p> |
| <p data-bbox="183 1355 778 1460"><b>9.6 AUTOMATIC CONTROLS AND BUILDING MANAGEMENT SYSTEMS</b></p> <p data-bbox="183 1489 778 1624"><b>9.6.1</b> Automatic control systems should be provided to operate plant safely, maintain conditions within permitted tolerances and to conserve energy.</p> <p data-bbox="183 1646 778 1780"><b>9.6.2</b> Automatic control systems should be of the direct digital control (DDC) type suitable for operating in conjunction with a Building Management System (BMS).</p> <p data-bbox="183 1803 778 1937"><b>9.6.3</b> Where the output to the system is provided from two or more plant items then sequence selection facilities should be provided to alter lead/lag functions to even out plant wear.</p>   | <p data-bbox="810 1489 1401 1585">To provide a flexible 'intelligent' control system which can interface with a computerised management system either initially or at some future date.</p>                        |

| REQUIREMENT   | COMMENT  |
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| <p data-bbox="181 434 778 544"><b>9.6 AUTOMATIC CONTROLS AND BUILDING MANAGEMENT SYSTEMS (CONT'D)</b></p> <p data-bbox="181 573 778 741"><b>9.6.4</b> A BMS should be installed where it is economically viable and practicable to have all engineering services within a building monitored and controlled using a microprocessor based system.</p> <p data-bbox="181 768 778 969"><b>9.6.5</b> The BMS should be arranged to undertake all control, status and condition monitoring, alarm signalling and reporting, plant operating and switching functions and should include maintenance and inventory scheduling and life safety/security monitoring.</p> <p data-bbox="181 996 778 1227"><b>9.6.7</b> The BMS should comprise one or more 'intelligent' stand alone type outstations, located in positions to suit the layout of the services to which they are connected. The outstations should be linked to a central processor unit and a colour monitor and printer should be provided.</p> <p data-bbox="181 1254 778 1384"><b>9.6.8</b> The system should have at least 20% spare capacity both in the outstations and central processor capacity to allow subsequent enhancements.</p> <p data-bbox="181 1411 778 1579"><b>9.6.9</b> Boilerplant should be arranged for operation under an optimum start/stop control facility incorporating normal, early morning boost, night set back, frost protection control modes, and with boiler sequence selection facilities.</p> | <p data-bbox="810 573 1410 640">To provide control, monitoring and recording of system performance.</p> <p data-bbox="810 768 1308 835">To avoid duplication of functions and optimise performance.</p> <p data-bbox="810 996 1273 1025">To identify an acceptable level of provision.</p> <p data-bbox="810 1254 1350 1283">To provide for future extensions or enhancement.</p> <p data-bbox="810 1411 1410 1478">To ensure the boiler only starts up at the latest possible time and stops at the earliest time to conserve energy.</p> |
| <p data-bbox="181 1619 778 1684"><b>9.7 WATER TREATMENT</b></p> <p data-bbox="181 1713 778 1915"><b>9.7.1</b> A raw water analysis should be determined in the early stages of design and dependent on the results of the water analysis and operational characteristics of the system permanent water treatment plant should be provided when appropriate.</p>   | <p data-bbox="810 1713 1398 1780">To preserve the safety or operating life of water based engineering systems.</p>   |

| REQUIREMENT  | COMMENT  |
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| <p><b>9.8 DRAINAGE AND WASTE SYSTEMS</b></p>   |  |
| <p><b>9.8.1</b> All drainage and waste systems shall be designed, installed and tested in accordance with BS 5572 and Part H of the Building Regulations.</p>  |  |
| <p><b>9.9 GAS SERVICES</b></p>   |  |
| <p><b>9.9.1</b> All gas installations shall be designed, installed and tested in accordance with the Gas Safety (Management) Regulations 1996</p>  |  |
| <p><b>9.9.2</b> All installations shall be undertaken by CORGI registered operatives.</p>  |  |
| <p><b>9.10 FIRE SERVICES</b></p>   |  |
| <p><b>9.10.1</b> Fire alarm systems should be provided throughout all developments and automatic fire detection systems should be provided as appropriate to suit the recommendations of the fire consultant.</p>          | <p>Detection systems which automatically operate the fire alarm may be required for high risk areas or for areas of infrequent use.</p>  |
| <p><b>9.10.2</b> Fire alarm and detection systems should conform with all relevant British Standard Specifications and Codes of Practice.</p>  |  |
| <p><b>9.10.3</b> Fully addressable systems are preferred with the building sub-divided into separate alarm/detection zones with display facilities capable of showing the state of each separate zone.</p>                 | <p>To ensure a reliable and efficient system with ready identification/early warning of defects.<br/>To ensure quick and easy means of detection and location of alarm source facilitating rapid response by Fire Brigade and to permit controlled evacuation.</p> |
| <p><b>9.10.4</b> Where extra low voltage systems are used the electrical supply should be from a safety isolating transformer in accordance with 'SELV' requirements.</p>  | <p>To provide the emergency services with immediate information on arrival.<br/>To ensure the user's attention is drawn to the fire alert.</p>   |
| <p><b>9.10.5</b> The mode of operation of any general mechanical ventilation systems under a fire alert and the provision of any specific smoke control ventilation systems should be agreed with the fire consultant.</p> | <p>To ensure the ventilation systems do not increase any fire hazard, to assist the fire brigade in smoke clearing operations.</p>   |

| REQUIREMENT  | COMMENT   |
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| <p data-bbox="181 434 780 510"><b>9.11 ELECTRICAL POWER DISTRIBUTION</b></p> <p data-bbox="181 544 759 645"><b>9.11.1</b> For economy in switchgear provisions and to minimise distribution losses, consideration should be given to distribution at high voltage.</p> <p data-bbox="181 667 772 902"><b>9.11.2</b> The complete distribution system should provide a secure and flexible arrangement, following departmental compartmentation. Routing and segregation of services should take into consideration the need to avoid potential interference between power and IT supplies/communications links.</p> <p data-bbox="181 925 748 1059"><b>9.11.3</b> Sub-stations should be sited in accessible positions with direct road access, as close as possible to the load centre, or nearest to the heaviest load.</p> <p data-bbox="181 1081 778 1182"><b>9.11.4</b> The electrical distribution system should include for 20% spare capacity over and above the system calculated maximum demand.</p> <p data-bbox="181 1205 767 1440"><b>9.11.5</b> The distribution system should incorporate automatic power factor correction equipment where power factor penalties would otherwise be incurred. The correction should be introduced in steps to correct to the minimum necessary to avoid any penalty imposed by the utilities supply company.</p> <p data-bbox="181 1462 767 1597"><b>9.11.6</b> Consideration should be given to the provision of space to accommodate future changeover devices to enable standby supplies to be connected at the main switchboard.</p> <p data-bbox="181 1619 767 1720"><b>9.11.7</b> Automatic maximum demand monitoring/control should be considered and wherever practicable incorporated into any BMS facilities.</p> | <p data-bbox="810 925 1342 1025">For ease of maintenance and replacement of equipment, fire fighting purposes, and to minimise cabling costs and distribution losses.</p> <p data-bbox="810 1081 1406 1149">To cater for potential future load increases without the need for extensive rewiring.</p> |



| REQUIREMENT   | COMMENT  |
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| <p data-bbox="181 434 778 544"><b>9.11 ELECTRICAL POWER DISTRIBUTION (CONT'D)</b></p> <p data-bbox="181 573 778 880"><b>9.11.8</b> Provisions should be made for separate metering of 'landlords' and 'tenants' areas which should include for sub metering for each floor level of office accommodation, catering and creche facilities and other known sub departments. Where appropriate, facilities for monitoring and recording energy consumption should be incorporated into any building management system (BMS).</p> <p data-bbox="181 904 778 1037"><b>9.11.9</b> Main and sub main distribution cables shall preferably be multicore XLPE (cross linked polyethylene) insulated, single wire armoured with LSF (low smoke and fume) oversheath.</p> <p data-bbox="181 1061 778 1193"><b>9.11.10</b> The preferred wiring system for small power and lighting final circuits is single core LSF (Low Smoke and Fire) insulated cables enclosed in metallic conduit/trunking.</p> <p data-bbox="181 1218 778 1283"><b>9.11.11</b> All cables should be certified by the British Approvals Service for Electric Cables (BASEC) .</p> <p data-bbox="181 1308 778 1395"><b>9.11.12</b> All distribution boards should be suitable of accepting RCDs (Residual Current Devices) to designated circuits.</p> <p data-bbox="181 1420 778 1597"><b>9.11.13</b> Unless specified otherwise in the project brief the electrical distribution system should be capable of supporting an ultimate power load from office equipment of 25-30 watts per square metre of functional accommodation.</p> <p data-bbox="181 1621 778 2011"><b>9.11.14</b> Office areas should have raised access floors (see Section 8.2) with integral service outlet boxes. Floor boxes should provide services to a three metre square grid and be capable of being moved to any point within this grid.<br/><br/>Boxes should be 3 (three) compartment unless otherwise stated in the design brief. The depth of the floor box should be considered as a considerable amount of office equipment utilises combined transformer/plug top which generally prevent lids to standard boxes closing.</p> | <p data-bbox="810 573 1414 600">To reduce conductor sizes and operating tariff penalties.</p> <p data-bbox="810 904 1331 969">To reduce flexibility of use of the building to suit changing needs.</p> |

| REQUIREMENT   | COMMENT  |
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| <p data-bbox="181 434 778 539"><b>9.11 ELECTRICAL POWER DISTRIBUTION (CONT'D)</b></p> <p data-bbox="181 573 778 674"><b>9.11.15</b> Each box should be equipped with socket outlet(s) and outlet plates/apertures to accommodate IT accessories.</p> <p data-bbox="181 696 778 797"><b>9.11.16</b> The preferred distribution arrangement for underfloor power services is a "plug-in" bus bar system.</p> <p data-bbox="181 819 778 1088"><b>9.11.17</b> Where exceptionally raised access floors are not provided, general purpose 13 amp socket outlets should be provided for supplying equipment, allowing flexibility with the need to satisfy the requirement for IT equipment and should be planned and arranged in conjunction with furniture, equipment and IT distribution specialist designers.</p> <p data-bbox="181 1111 778 1290"><b>9.11.18</b> Socket outlets in each room should be on the same phase. Where mixing of phases is unavoidable (e.g., open plan offices) the sockets should be marked to warn users of a voltage potential in excess of 230V.</p> | <p data-bbox="810 1111 919 1144">For safety</p>  |
| <p data-bbox="181 1330 778 1391"><b>9.12 STANDBY POWER SUPPLIES</b></p> <p data-bbox="181 1413 778 1514"><b>9.12.1</b> The need for standby electrical generated and/or uninterruptable facilities shall be discussed and agreed with the Client.</p> <p data-bbox="181 1536 778 1715"><b>9.12.2</b> Due consideration should be given to operating generators in parallel with the mains supply where practicable or desirable to facilitate peak load lopping, testing or maintenance of mains systems with 'no break'.</p>   | <p data-bbox="810 1536 1414 1603">To avoid tariff penalties to facilitate on-load testing with no break.</p> |

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| <p data-bbox="183 436 778 510"><b>9.12 STANDBY POWER SUPPLIES (CONT'D)</b></p> <p data-bbox="183 544 778 884"><b>9.12.3</b> Standby generators will normally be diesel driven and should be provided with sufficient fuel storage to allow unattended continuous operation at full load for a minimum period of 72 hours. If the standby generator is intended to support computer equipment then the use of an Uninterruptible Power Supply (UPS) unit. The type of UPS, unit configuration, battery type, minimum run times etc. should be agreed with the Client.</p> <p data-bbox="183 918 778 1025"><b>9.13 INFORMATION TECHNOLOGY (IT) SYSTEMS</b></p> <p data-bbox="183 1059 778 1227"><b>9.13.1</b> Sufficient external cable ducts should be provided from the buildings to the site boundary. This is to enable connections to be made to the locally available communication networks of public and private companies.</p> <p data-bbox="183 1249 778 1485"><b>9.13.2</b> Dedicated equipment rooms, rising ducts, patch panels and cable management systems should be incorporated into the designs to provide for current technology together with the inherent flexibility to accept new technology and future known changes to the planned use of IT systems by the occupying departments.</p> <p data-bbox="183 1507 778 1608"><b>9.13.3</b> The preferred method of cable management for IT services is via multi-compartment cable trunking systems.</p> | <p data-bbox="810 544 1396 645">To provide a reasonable period of operation, either to restore the mains supply or to arrange additional fuel deliveries.</p> <p data-bbox="810 1249 1396 1317">To provide adequate segregation from other services, flexibility and suitable accommodation for equipment.</p> <p data-bbox="810 1507 1204 1541">For flexibility/segregation/protection.</p> |

| REQUIREMENT   | COMMENT  |
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| <p><b>9.14 PUBLIC ADDRESS SYSTEM</b></p> <p><b>9.14.1</b> The need for a public address system should be agreed with the Client in respect of coverage and integration with other services (eg. fire alarm/voice alarm systems), either separately, or as part of a fire alarm/voice alarm system.</p> <p><b>9.14.2</b> Where the public address system forms part of, or supplements any emergency warning system, the design, public address equipment specification and installation shall comply with the requirements of the relevant British Standards and Codes of Practice.</p> <p><b>9.14.3</b> Audio-frequency induction loops for use with hearing aids should be provided within passenger lift cars, at public counters and at other positions agreed with the Client.</p> | <p>To identify a recognised authoritative standard to ensure a safe and efficient system.</p> <p>To aid users with impaired hearing.</p> |
| <p><b>9.15 LIGHTNING PROTECTION</b></p> <p><b>9.15.1</b> Lightning protection should be provided where assessment in accordance with BS.6651 indicates it is required or where requested by the Client.</p>   |  |
| <p><b>9.16 ELECTROMAGNETIC COMPATIBILITY (EMC)</b></p> <p><b>9.16.1</b> Careful consideration should be given to the routing and segregation of cables and to planning and siting of all equipment which could potentially be a source of interference.</p>   | <p>See the Electro Magnetic Compatibility (Amendment) Regulations 1994.</p>  |

| REQUIREMENT  | COMMENT  |
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| <p data-bbox="181 434 780 510"><b>9.17 VERTICAL TRANSPORTATION</b></p> <p data-bbox="181 544 727 607"><b>9.17.1</b> For general provisions in respect of lifts see <a href="#">Section 6.20</a>.</p> <p data-bbox="181 633 783 763"><b>9.17.2</b> Hydraulic lifts may be used where shown to be cost effective. Electric lifts are preferred and all lifts should be of a type with a proven record of service.</p> <p data-bbox="181 790 555 819"><b>9.17.3</b> Passenger lifts should have:</p> <ul data-bbox="268 842 783 1350" style="list-style-type: none"> <li data-bbox="268 842 683 904">• Information displays at each landing identifying the location of each lift;</li> <li data-bbox="268 927 783 1057">• Micro-computer based programmable or self adaptive control systems to provide flexibility of lift service to meet changing traffic patterns;</li> <li data-bbox="268 1079 783 1267">• An emergency telephone or intercom connected to a 24 hour attended service (where telephones are considered inadvisable due to the risk of vandalism an alarm system should be provided linked to a 24 hour attended service); and</li> <li data-bbox="268 1290 783 1350">• Flush car and landing doors, power operated preferably two panel centre opening type.</li> </ul> <p data-bbox="181 1373 772 1503"><b>9.17.4</b> Lift car interior lighting should be arranged with facilities to automatically switch off the internal car lights when the lift is not in use over extended periods.</p> | <p data-bbox="810 633 1318 663">To ensure a proven and efficient lift installation.</p> <p data-bbox="810 842 1161 871">For the convenience of lift users.</p> <p data-bbox="810 927 1099 956">To optimise the lift service.</p> <p data-bbox="810 1079 1398 1142">To provide reassurance and alert security/maintenance staff of a lift emergency.</p> <p data-bbox="810 1290 1347 1352">For aesthetic reasons and to provide improved lift service efficiency.</p> |

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| <div style="background-color: #e0e0e0; padding: 5px; border: 1px solid black; margin-bottom: 10px;"> <b>9.18 INTERIOR LIGHTING SERVICES</b> </div>  |  |
| <p><b>9.18.1</b> Interior lighting designs should be developed in close co-operation with interior designers and architects to ensure the solutions adopted provide the required environment both in terms of visual appearance and technical performance.</p>  |  |
| <p><b>9.18.2</b> Energy conservation should be considered as an integral part of lighting design and utilisation and care should be exercised to ensure the intended lighting systems are energy efficient and cost effective.</p>  |  |
| <p><b>9.18.3</b> Illumination levels, the limiting glare index, luminaire type and source should all be in accordance with the recommendations of the appropriate CIBSE 'Code for Interior Lighting', CIBSE lighting design guides, HSE and EC directives.</p>  | <p>To define acceptable minimum standards for safe and efficient lighting, the levels may be achieved by either the general lighting system or by the general lighting system supplemented by local task lighting.</p> |
| <p><b>9.18.4</b> Cable management systems should be provided to accommodate cables with plug-in flexible connections to light fittings in suspended ceilings.</p>   | <p>To provide flexibility by enabling easy relocation of lighting fittings to suit revised partition layouts.</p>  |
| <p><b>9.18.5</b> Lighting of stairways and common areas should be supplied from separate circuits from those serving office areas. Stairways should be arranged with a minimum of two circuits serving alternate landing levels.</p>  | <p>To provide a sensible segregation between circulation and working areas and for safety.</p>   |
| <p><b>9.18.6</b> Primary tungsten filament lamps should not be used but lamps other than fluorescent or miniature fluorescent may be used for aesthetic reasons in entrance areas, conference rooms or similar "prestige" areas where energy efficient miniature spot lights/downlighters may be considered, but only with the prior agreement of the Client.</p> | <p>Tungsten lamps are inefficient in both energy consumption and lamp life.</p>  |
| <p><b>9.18.7</b> Uplighters, where provided for background/ effect purposes, should be lamped with compact fluorescent lamps to avoid harsh bright spots on ceilings, which can, in turn, cause veiling reflections on VDT screens.</p>   | <p>To define an acceptable light source.</p>   |

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| <b>9.18 INTERIOR LIGHTING SERVICES (CONT'D)</b>  |  |
| <p><b>9.18.8</b> All fluorescent luminaires should incorporate high frequency control gear.</p>  | <p>To provide improved efficiency and reduce the possibility of 'sick building syndrome'.</p>  |
| <p><b>9.18.9</b> Vandal proof fittings should be provided in unobserved public areas and arranged so as not to allow the public access to lighting controls.</p>   | <p>To ensure an adequate standard of lighting and to reduce eye strain and operator fatigue.</p>   |
| <p><b>9.18.10</b> Automatic switching controls with overriding manual ON/OFF facilities should be provided where practical and economically viable.</p>  | <p>To avoid the potential for vandalism and restrict control to authorised users.</p>  |
| <p><b>9.18.11</b> Automatic control of lighting by presence detectors should also be considered for toilets, store rooms, cellular offices or areas which may be unoccupied for long periods.</p>  | <p>To avoid lights being left on unnecessarily.</p>  |
| <p><b>9.18.12</b> Wherever possible switching arrangements should enable reduced lighting levels to be used for out of normal hours purposes (e.g. cleaning, security etc).</p>  | <p>To avoid unnecessary use of the whole installation in order to conserve energy and extend lamp life.</p>  |
| <p><b>9.18.13</b> Lighting in large spaces should be switched in suitable conveniently located groupings to reflect the working practice and with due regard to flexibility to accommodate future changes to partition layouts. The switching arrangement principles should be agreed with the Client.</p> | <p>To ensure electric lighting can be switched off whenever there is sufficient daylight.</p>  |
| <p><b>9.18.14</b> Internal emergency lighting should be provided to the accommodation in accordance with the requirements of the relevant British Standards, CIBSE TM12, ICEL standards and the requirements of the fire consultant in respect of lighting of fire escape routes.</p>                      | <p>To identify authoritative standards which provide for safe and efficient emergency lighting provisions which take account of the need for lighting in a fire/smoke emergency.</p> |

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| <p data-bbox="181 434 778 510"><b>9.19 EXTERNAL LIGHTING SERVICES</b></p> <p data-bbox="181 539 735 674"><b>9.19.1</b> External lighting to site roadways, walkways, loading bays and particular building features should be provided for security and amenity purposes.</p> <p data-bbox="181 696 778 936"><b>9.19.2</b> External lighting will be designed for maximum energy efficiency using appropriate luminaires to compliment and enhance the building finishes and landscaping, whilst reducing the potential for vandalism. The lamp types used should ensure reasonable colour rendition i.e. not result in a monochromatic colour rendition.</p> <p data-bbox="181 958 715 1061"><b>9.19.3</b> External lighting should be designed in accordance with the recommendations of CIBSE Lighting Guide LG6.</p> <p data-bbox="181 1084 759 1144"><b>9.19.4</b> Automatic photo-electric controls and time switches should be used wherever practicable.</p> <p data-bbox="181 1167 770 1270"><b>9.19.5</b> Luminaires should be suitably protected against the elements and to avoid the potential for vandalism.</p> <p data-bbox="181 1292 764 1352"><b>9.19.6</b> External lighting designs should be checked for compatibility with security systems.</p> | <p data-bbox="810 539 1169 568">To ensure a satisfactory standard.</p> <p data-bbox="810 958 1390 1061">To identify authoritative standards in order to provide efficient and safe systems and ensure compliance with requirements of the planning authority.</p> <p data-bbox="810 1084 1347 1180">To reduce operational labour requirements whilst maintaining the facility for manual control (e.g., for testing).</p> <p data-bbox="810 1292 1414 1426">To ensure relevant factors are not overlooked (for example the performance of CCTV surveillance systems is affected by alternative sources of external artificial lighting).</p> |



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| <p data-bbox="181 434 780 510"><b>9.20 SECURITY SERVICES</b></p> <p data-bbox="181 544 780 645"><b>9.20.1</b> Security services should be provided as necessary to meet the Client's requirements in respect of:</p> <ul data-bbox="268 667 780 1025" style="list-style-type: none"> <li>• CCTV monitoring and recording of internal/ external areas;</li> <li>• Intruder detection systems;</li> <li>• Personal attack/affray alarms for example;</li> <li>• Door access control systems;</li> <li>• Car park entry/exit barrier control systems; and</li> <li>• Automatic light switching.</li> </ul> <p data-bbox="181 1055 780 1131"><b>9.21 COMMISSIONING AND TESTING</b></p> <p data-bbox="181 1164 780 1368"><b>9.21.1</b> All building services should be thoroughly tested, commissioned and witnessed in accordance with appropriate CIBSE Commissioning Codes, British Standard acceptance tests, IEE Wiring Regulations (BS7671) etc.</p> <p data-bbox="181 1397 780 1630"><b>9.21.2</b> In the case of air conditioning installations serving computer rooms the commissioning tests should be followed by full scale load simulation tests to ensure the required environment can be maintained across the full range of summer and winter operating conditions.</p> | <p data-bbox="810 1137 1369 1200">To identify the procedures necessary to ensure that engineering systems work as intended.</p> <p data-bbox="810 1361 1401 1527">To ensure that plant and systems controlling the environment in which sensitive equipment is to operate, have been tested and proven to operate correctly under identical circumstances to the situation which will prevail when the equipment is in operation.</p> |

**SECTION 10**  
**COMPLETION AND ACCEPTANCE**

# SECTION 10

## COMPLETION AND ACCEPTANCE

The Developer or Project Manager must comply with all relevant and current statutory instruments, regulations and the requirements of all statutory and regulating authorities

| REQUIREMENT   | COMMENT  |
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| <p><b>10.1 PROCEDURE</b></p> <p><b>10.1.1</b> The project is to be handed over in a clean and tidy condition with all works completed, and all systems commissioned and tested and operating correctly.</p> <p><b>10.1.2</b> Where phased handovers have been agreed, the provisions of this section apply to each separate handover.</p> <p><b>10.1.3</b> The specific requirements for handover as regards issue of completion certificates, as-built drawings, notifications, etc. will vary for each development, but they will be stated in the contract documentation and rigidly adhered to.</p> <p><b>10.1.4</b> The developer/project manager should ensure that a reasonable period is included in the contract programme for clearance of building defects prior to handover, and should note that a significant number of even minor details may preclude handover.</p> <p><b>10.1.5</b> The developer/project manager should liaise with the Client's Professional Advisor in good time over the procedures and documentation at an appropriate stage.</p> <p><b>10.1.6</b> It is mandatory that all testing and commissioning is witnessed by the developer/project manager (or their consultants where appropriate), and that test sheets are signed by them.</p> <p><b>10.1.7</b> The developer/project manager should ensure that an adequate service agreement is arranged with the lift supplier/installer to ensure that the lift is maintained by them during the building maintenance period, and that a call-out service which is acceptable to the occupier is provided during this period. The cost of complying with this requirement should form part of the contract price/occupancy or leasing agreement as appropriate.</p> | <p>To ensure that the building and services have been checked for correct operation, and any defects rectified prior to the building being used.</p> |

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| <p data-bbox="183 436 778 510"><b>10.2 DOCUMENTATION</b></p> <p data-bbox="183 544 782 712"><b>10.2.1</b> The requirements for documentation to be provided at handover will vary according to the contents of the Contract Documentation but as a minimum should include, where relevant the following:</p> <ul data-bbox="268 734 782 1680" style="list-style-type: none"> <li data-bbox="268 734 782 801">• The Health and Safety file under the CDM Regulations;</li> <li data-bbox="268 824 782 857">• Copies of all relevant project specifications;</li> <li data-bbox="268 880 782 969">• Full sets of as-built drawings and unless otherwise agreed in negative format suitable for continuous reproduction;</li> <li data-bbox="268 992 782 1025">• Certificate of planning consent;</li> <li data-bbox="268 1048 782 1115">• Certificate of compliance with building regulations, at design and construction stage;</li> <li data-bbox="268 1193 782 1261">• Certificate of consent for listed buildings when appropriate;</li> <li data-bbox="268 1283 782 1350">• Schedules of all items of building services equipment;</li> <li data-bbox="268 1373 782 1440">• Building and M&amp;E maintenance manuals and manufacturers' maintenance instructions;</li> <li data-bbox="268 1462 782 1496">• Building user's manual;</li> <li data-bbox="268 1518 782 1585">• Copies of commissioning results of all engineering services systems;</li> <li data-bbox="268 1608 782 1680">• List of principal materials used in construction and catalogues of specialist components;</li> </ul> | <p data-bbox="810 1048 1385 1182">Either from the Local Authority or a Building Control Compliance Checking Consultant, depending on whether it is a Crown Build or Private Developer Scheme.</p> |

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| <p data-bbox="183 436 778 510"><b>10.2 DOCUMENTATION (CONT'D)</b></p> <ul style="list-style-type: none"> <li data-bbox="268 546 746 577">• All appropriate Test Certificates, including:               <ul style="list-style-type: none"> <li data-bbox="301 595 497 627">- Electrical tests;</li> <li data-bbox="301 642 443 674">- Gas tests;</li> <li data-bbox="301 689 654 721">- Public health engineers' tests;</li> <li data-bbox="301 736 509 768">- Fire alarm tests;</li> <li data-bbox="301 784 643 815">- Statutory lift inspection/test;</li> <li data-bbox="301 831 587 862">- Lifting equipment tests;</li> <li data-bbox="301 878 601 909">- Hydraulic pressure tests;</li> <li data-bbox="301 925 632 956">- Ductwork air leakage tests;</li> <li data-bbox="301 972 561 1003">- Pressure vessel tests;</li> <li data-bbox="301 1019 686 1050">- Structural component tests; and</li> <li data-bbox="301 1066 738 1128">- Drinking water tests and chlorination certificate; and</li> </ul> </li> <li data-bbox="268 1146 727 1178">• Risk assessment reports (legionella etc);</li> <li data-bbox="268 1196 732 1258">• A list of any hazardous materials used in construction or services;</li> <li data-bbox="268 1276 772 1617">• Fire precautions documents, including:               <ul style="list-style-type: none"> <li data-bbox="301 1335 643 1397">- Fire Consultant's report and recommendations;</li> <li data-bbox="301 1413 767 1507">- Statement of compliance with the foregoing report and recommendations; and</li> <li data-bbox="301 1523 772 1617">- Schedule of fire appliances provided and a statement that the appliances are charged and ready for use; and</li> </ul> </li> <li data-bbox="268 1635 775 1774">• Copies of any relevant relaxations or dispensations from the Buildings Regulations agreed with the appropriate Certifying Authority;</li> <li data-bbox="268 1792 751 1939">• Local Authority Fire Certificate:               <ul style="list-style-type: none"> <li data-bbox="301 1850 751 1939">- Any defect or failure reports raised during construction or commissioning; and</li> </ul> </li> </ul> |         |

| REQUIREMENT  | COMMENT |
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| <p data-bbox="183 436 778 510"><b>10.2 DOCUMENTATION (CONT'D)</b></p> <ul data-bbox="268 548 778 1164" style="list-style-type: none"> <li>• Copies of all guarantees on materials and workmanship;</li> <li>• Certificate of practical or substantive completion;</li> <li>• Certificate of final completion, when appropriate;</li> <li>• Copies of any defects lists to be appended together with the names of persons responsible for remedial works;</li> <li>• Any other documents agreed by the parties as appropriate; and</li> <li>• Handover documentation in a form agreed with the Client ie. microfilm, digitised data in approved format, or hard copy. In the case of hard copy it shall be presented in a form specified by the Client.</li> </ul> <p data-bbox="183 1198 778 1272"><b>10.3 OPERATIONAL FAMILIARISATION</b></p> <p data-bbox="183 1299 778 1635"><b>10.3.1</b> The developer/project manager (or their design consultants where appropriate), and all relevant contractors should arrange and provide attendance at familiarisation sessions for the Occupier and his Maintenance Consultants prior to handover, at which time they will explain and demonstrate the workings of all equipment and systems which will require adjustment or maintenance by the occupier or his representatives.</p> <p data-bbox="183 1668 778 1825"><b>10.3.2</b> These briefings shall be sufficiently detailed and so documented that the attendees will be able to safely and effectively operate all the systems within the building at the conclusion of the briefing sessions.</p> |         |

## MS WORD 95 VERSION OF THE GUIDE TO REQUIREMENTS FOR OFFICE BUILDINGS (ROB)

This CD ROM contains a Word 95 version of the CAU Guide to Requirements for Office Buildings (ROB).

To view the Word 95 version or download the Word 95 file to your local drive:

- open the file D:\rob.doc (where D is the letter of your CD ROM drive); or
- copy the file D:\rob.doc (where D is the letter of your CD ROM drive) to your local drive.