

About ACE

ACE represents the business interests of the consultancy and engineering industry in the UK. We are the leading business association in this field, counting around 800 firms – large and small, operating across many different disciplines – as our members.

There are two key strands to ACE's work. First, through powerful representation and dialogue with government, major clients, the media and other key stakeholders, we promote the critical contribution that consultants and engineers make to the nation's development infrastructure.

Second, through direct contact, publications, events, our website, our sector and regional networks, we provide a cohesive approach and direction for our members and the wider industry. ACE listens to its members, understands the issues affecting them and their clients and takes the lead in representing their interests to decision makers and opinion formers in government, client organisations and the media.

ACE Agreements are the industry standard contract documents for consultancy appointments. To further promote best practice and better ways of working in the industry, ACE also publishes a range of briefing notes and policy statements for both clients and consultants. Full details can be found on the ACE website at www.acenet.co.uk.

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Legal Advice Line

In association with our preferred providers ACE is pleased to provide 15 minutes of free legal advice to ACE members on a range of issues from standard forms of contract and collateral warranties guidance to alternative dispute resolution. For more information please visit the ACE legal section at www.acenet.co.uk.

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ACE Schedule of Services – Part G(c)

Mechanical and electrical engineering
(performance design in buildings)
Single Consultant or non-lead Consultant
For use with ACE Agreement 1 – Design

2009 Edition



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agreements

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Part G: Schedule of Services to be undertaken by a single Consultant or non-lead Consultant

Mechanical and electrical engineering (performance design in buildings)

G1 GENERAL

G1.1 Definitions

The following definitions shall apply throughout this Part G.

Coordination Drawings	Drawings showing the inter-relationship of two or more engineering services and their relation to the structure and architectural details. Such drawings should be provided to a scale of not less than 1 to 50 unless otherwise agreed and be prepared in such detail as to demonstrate that the engineering services will be properly separated from one another and can be satisfactorily installed and maintained. The Coordination Drawings shall, if the Consultant be so instructed, embrace other engineering services not designed by him.
Cost Plan	A document showing the estimated cost of all parts of the Project and how it is to be spent.
Installation Drawings	Drawings based on Tender Documentation and/or Coordination Drawings showing details of proposals by Contractors or Sub-Contractors for the execution of the Works. The Installation Drawings will be in such detail as to enable the Works to be installed.
Record Drawings	Drawings normally prepared by a Sub-Contractor in order to provide the Client with a record of the Works as installed.
Sketch Drawings	Line diagrams and layouts indicating basic proposals, locations of main items of plant, routes of main pipes, air ducts and cable runs in such detail as to illustrate the incorporation of the engineering services within the Project as a whole.
Stages	The stages for the performance of the Services as described in this Part G.
Tender Documentation	Drawings and other documentation as appropriate to the agreed procurement method prepared to enable those tendering to interpret the design for the Works and to submit a tender for executing all or any part of the Works.

G1.2 Lead Consultant

If a Lead Consultant is not appointed, the Consultant shall discuss with, seek consent from, advise, consult with, agree with and collaborate directly with the Client as appropriate.

G2 THE SERVICES FOR MECHANICAL AND ELECTRICAL ENGINEERING

Note 1: Each of the services in this Part G is optional and may be deleted.

Note 2: If a Lead Consultant is not appointed the service G2.3.6 will need particular amendment or deletion.

G2.1 Appraisal Stage

G2.1.1 Seek the Brief and instructions from the Client describing the Client's requirements in respect of the Works, what they are intended to achieve, their cost and programme.

G2.1.2 Discuss with the Client the role of the Consultant and the Client's relationship with the Lead Consultant if appointed and any Other Consultants, the various Contractors and Sub-Contractors and any CDM co-ordinator appointed in accordance with the Construction (Design and Management) Regulations 2007.

G2.1.3 Discuss with the Client the likely requirements for Site Staff; these shall be considered again prior to and following the appointment of Contractors.

G2.2 Strategic Briefing Stage

G2.2.1 Seek from the Client all information and documents to be provided by the Client under clause F3.2 of Part F: *The Terms of Contract*.

G2.2.2 Obtain such information as is reasonably available from documents on the existence and extent of public services such as water, gas, electricity, sewerage and telecommunications services and comment to the Client on any effect that these may have on the Works, both during construction of the Works and on completion.

G2.2.3 Comment to the Client on any physical site restrictions which may affect the engineering options for the Works.

G2.2.4 Collaborate with the Lead Consultant if appointed and any Other Consultants in seeking from the Client any further information needed so that they can perform their services under their various agreements with the Client.

G2.2.5 Collaborate with the Lead Consultant if appointed and any Other Consultants in making initial recommendations to the Client on the technical viability of the Works.

G2.2.6 Seek, through the Lead Consultant if appointed, the Client's consent to proceed to the Outline Proposals Stage.

G2.3 Outline Proposals Stage

After receiving the Client's consent to proceed to the Outline Proposal Stage:

- G2.3.1 Visit the site as necessary and study data and information relating to the Project and relevant to the Works which are reasonably accessible to the Consultant, and consider reports relating to the Works which have either been prepared by the Consultant or have been prepared by others and made available to the Consultant by the Client.
- G2.3.2 Advise the Client through the Lead Consultant if appointed on the need for arrangements to be made for and define the extent of topographical and dimensional surveys of the site, surveys to obtain details of construction in existence on or adjacent to the site, special investigations or model tests. Arrange as agent for the Client when authorised by the Client for such works to be undertaken, certify the amount of any payments to be made by the Client to the persons or firms carrying out such works, and advise the Client on the results of such works.
- G2.3.3 Consult any local or other authorities about matters of principle in connection with the design of the Works.
- G2.3.4 Consider alternative outline solutions for the Works.
- G2.3.5 Develop the Client's Brief into a full Brief for the Works in consultation with the Client, the Lead Consultant if appointed and any Other Consultants. Such Brief shall describe the Client's requirements in respect of the Services and both the Client and the Consultant shall work to the Brief. Discuss and agree with the Client any changes to the arrangements for payments to be made to the Consultant which may have become necessary as a result of changes to the Brief. Comment to the Lead Consultant if appointed or, if not so appointed, the Client on any restrictions the Brief may impose on any future use of the Works suggested by the Client.
- G2.3.6 Provide sufficient preliminary information in relation to the Works in the form of advice, sketches, reports or outline specifications to enable the Lead Consultant if appointed to prepare his outline proposals and assist any Other Consultant to prepare the outline Cost Plan.
- G2.3.7 Provide by way of Sketch Drawings or schedules the structural planning requirements for the engineering services showing locations and approximate sizes of plant rooms, major items of plant, major ducts and service runs and provide the approximate weight of any item affecting the structural design.
- G2.3.8 Assess and prepare preliminary schedules of power, heating and cooling loads as applicable.
- G2.3.9 Receive from the architect through the Client the thermal performance standards for the facades and roofs of the buildings and details of any external shading/solar control. Analyse the preliminary heat gains and losses for the purpose of initial sizing of heating, ventilation and air conditioning systems and plant, as applicable.

- G2.3.10 Negotiate with public and other utility authorities provision of necessary incoming services.
- G2.3.11 Prepare outline specifications and Sketch Drawings for the Works.
- G2.3.12 Advise on conditions of contract relevant to the Works and upon forms of tender and invitations to tender for the Works.
- G2.3.13 Advise the Client as to the selection of firms suited to the submission of competitive tenders for the development of designs and execution of the Works, based upon documentation produced under G2.3.11.
- G2.3.14 Assemble documentation and drawings for issue to firms selected to tender and despatch to suit an agreed procedure.
- G2.3.15 Comment on the preparation of formal contract documents relating to selected tenders for carrying out the Works or any part thereof.
- G2.3.16 After review, seek, through the Lead Consultant if appointed, the Client's approval of the outline proposals and the Client's consent to proceed to the Detailed Proposals Stage.

G2.4 Detailed Proposals Stage

After receiving the Client's approval of the outline proposals and the Client's consent to proceed to the Detailed Proposals Stage:

- G2.4.1 Analyse the tenders received and make recommendations to the Client on selection.
- G2.4.2 Monitor, by such means as the Consultant shall consider necessary, the performance of Contractors and Sub-Contractors in the evolution of system designs from the specification and Sketch Drawings.
- G2.4.3 Submit a report to the Client commenting upon the performance of Contractors and Sub-Contractors to the end of this Stage.
- G2.4.4 Seek, through the Lead Consultant if appointed, the Client's consent to proceed to the Final Proposals Stage.

G2.5 Final Proposals Stage

After receiving the Client's consent to proceed to the Final Proposals Stage:

- G2.5.1 Monitor, by such means as the Consultant shall consider necessary, the performance of Contractors and Sub-Contractors in the development of the system designs.
- G2.5.2 Seek, through the Lead Consultant if appointed, the Client's consent to proceed to the Production Information Stage.

G2.6 Production Information Stage

After receiving the Client's consent to proceed to the Production Information Stage:

- G2.6.1 Monitor, by such means as the Consultant shall consider necessary, the performance of Contractors and Sub-Contractors in the production of Coordination Drawings and Installation Drawings.
- G2.6.2 Submit a report to the Client commenting upon the performance of Contractors and Sub-Contractors to the end of this Stage.
- G2.6.3 Seek, through the Lead Consultant if appointed, the Client's consent to proceed to the Mobilisation, Construction and Completion Stage.

G2.7 Tender Documentation and Tender Action Stage

Note: Where the Consultant performs Performance Services, the services for this Stage are discharged in the Outline Proposals Stage.

G2.8 Mobilisation, Construction and Completion Stage

After receiving the Client's consent to proceed to the Mobilisation, Construction and Completion Stage.

- G2.8.1 Advise the Client on the appointment and duties of Site Staff and where they have been appointed instruct Site Staff in accordance with clause F4 of Part F: *The Terms of Contract*.
- G2.8.2 Examine Contractors' and Sub-Contractors' proposals for the execution of the Works insofar as these reflect upon the design intent. Comment to the Other Consultants as may be necessary.
- G2.8.3 Make such visits to the site as stated in clause B16 (B17 in Scottish Agreement) of Part B: *The Particulars of Agreement* to satisfy himself generally as to the execution of the Works insofar as it reflects upon the design intent.
- G2.8.4 Examine, subsequent to setting to work and regulation of the mechanical, electrical and other building services, installations, plant and equipment comprising the Works by Contractors and Sub-Contractors, the result of their commissioning and the documentary records thereof. Report to the Client.
- G2.8.5 Inspect the Works on completion and, in conjunction with any Site Staff, record any defects.

G3 OTHER SERVICES TO BE PERFORMED BY THE CONSULTANT

- ~~G3.1~~ Prepare any report or documentation required for consideration of proposals for alternative works.
- ~~G3.2~~ Work consequent upon a decision by the Client to seek Parliamentary powers.

- ~~G3.3~~ Work done in connection with any application by the Client for any order, sanction, licence, permit or other consent, approval or authorisation necessary to enable the Works to proceed including planning consents or approvals.
- G3.4 Prepare a questionnaire for the Client following study of information provided by the Client under clause F3.2 of Part F: *The Terms of Contract* to seek the Client's strategic brief confirming key objectives and constraints.
- ~~G3.5~~ Prepare any information necessary for the Client's negotiations with third parties including ground landlords, financing bodies and adjoining site owners.
- ~~G3.6~~ Work in making initial recommendations to the Client on the economic and financial viability of the Works.
- ~~G3.7~~ Work in connection with providing a feasibility study.
- ~~G3.8~~ Work in re-evaluating all parts of the services and building design which may be affected by acceptance of alternative plant selections.
- ~~G3.9~~ Prepare a report in consideration of any alternative plant selections or arrangements proposed subsequent to the issue of the Tender Documentation. Advise whether the alternative complies with any established performance criteria. Identify the estimated cost and programme for carrying out a detailed re-evaluation of the design to incorporate the alternative proposals.
- G3.10 Develop energy efficient strategies for the fabric and engineering services of buildings in respect of the Project or the Works.
- ~~G3.11~~ Develop a condensation analysis in respect of the Project or the Works.
- ~~G3.12~~ Work in undertaking a detailed analysis and preparing a report affecting the selection of energy sources.
- ~~G3.13~~ Evaluation of the acoustical requirements of the building design and construction with respect to design noise criteria.
- ~~G3.14~~ Measurement and analysis of ambient noise levels, giving general building acoustic advice.
- ~~G3.15~~ Review and update as necessary the general considerations affecting the selection of energy sources.
- G3.16 Work in connection with assisting the architect in obtaining Building Regulation compliance (Part L).
- ~~G3.17~~ Comment to the Lead Consultant if appointed or the Client on the value of any variations to the Works for which any Contractors or Sub-Contractors were responsible.
- ~~G3.18~~ Assist in negotiating any contract and/or sub-contract selected other than by competitive tendering.

- ~~G3.19~~ Make visits to site in addition to those allowed for in G2.8.0.
- ~~G3.20~~ Prepare a cost analysis of the Works as developed at any Stage.
- ~~G3.21~~ Receive and comment on copies of Record Drawings, operating instructions and maintenance manuals prepared by Contractors or Sub-Contractors if so required under their contracts for construction.
- G3.22 Prepare operating and maintenance manuals, planned maintenance schedules, Record Drawings and estimates of cost in use.
- G3.23 Assess all data relating to the Works for settlement of the Contractor's final account. Report to the Client.
- G3.24 Perform work or advise the Client on one occasion only in connection with any claim or matter where such claim or matter arises out of any contract for the execution of the Works provided that this service shall not extend to the detailed examination of any financial claim nor to advising the Client following the taking of any step in or towards any resolution of any dispute or difference or towards any adjudication, arbitration or litigation in connection with the Works.

G4 SERVICES TO BE ARRANGED BY THE CONSULTANT AND TO BE PERFORMED BY OTHERS

- G4.1 Identifying and finding a suitable third party, recommending that third party to the Client and dealing with any necessary pre-qualification matters, tenders, tender assessments and contract documents leading to a contract between the Client and the third party for:
 - G4.1.1 Specialist technical advice on any aspect of the Works which is not within the expertise of the Consultant.
 - G4.1.2 Specialist technical advice on the control and exclusion of environmental hazards including methane and radon.
 - G4.1.3 Advice on building leakage and pressure testing.
 - G4.1.4 Legal, financial and professional services other than those offered by the Consultant and within the competence of the Consultant.
 - G4.1.5 Services in connection with the valuation, purchase, sale or leasing of lands and the obtaining of wayleaves.
 - G4.1.6 Topographical, dimensional, condition or analytical survey of sites or existing works.
 - G4.1.7 Model tests or special investigations under G2.3.2.
 - G4.1.8 Preparation, or assistance in the preparation, of an environmental impact assessment in respect of the Works.

- ~~G4.1.9~~ Evaluation of complex or novel builders work devices for natural ventilation of buildings including flues and towers.
- ~~G4.1.10~~ Commissioning and testing procedures and the preparation of all necessary associated documentation for permanent record thereof.

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