



# **GOVERNMENT GAZETTE**

## **OF THE**

# **REPUBLIC OF NAMIBIA**

R7,60

WINDHOEK — 25 February 1993

No. 593

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### **Government Notice**

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No. 24

1993

#### **ENGINEERING PROFESSION ACT, 1986: REGULATIONS REGARDING THE TARIFF OF CONSULTING FEES FOR PROFESSIONAL ENGINEERS OR INCORPORATED ENGINEERS**

The Minister has under section 7(3)(a) of the Engineering Profession Act, 1986 (Act 18 of 1986), with effect from 1 April 1993, made the regulations set out in the Schedule.

## SCHEDULE

TARIFF OF CONSULTING FEES ACCORDING TO WHICH  
A PROFESSIONAL ENGINEER OR INCORPORATED  
ENGINEER MAY CALCULATE THE AMOUNT CHARGEABLE  
BY HIM OR HER IN RESPECT OF THE RENDERING BY  
HIM OR HER OF PROFESSIONAL CONSULTING SERVICES:  
CIVIL, STRUCTURAL, MECHANICAL, ELECTRICAL  
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## 1. GENERAL.

### 1.1 *Definitions*

In these regulations, unless the context otherwise indicates, an expression or word defined in the Engineering Profession Act, 1986 (Act 18 of 1986), has a corresponding meaning, and -

“client” means any person or juristic person engaging a professional engineer or incorporated engineer in private professional consulting practice to perform on his/her behalf the services set out in regulation 2, 3 or 4;

“contractor” means any person or juristic person who undertakes contractually to perform engineering works or any part thereof for the client, and includes any subcontractor to whom any part of the works has been given out in contract by a contractor;

“electronic engineering work” means work in connection with security systems, electronic flight guidance equipment, computer systems, design of electronic modules, building and energy controls, measurement and control and feedback techniques, measurement and control systems, electronic instrumentation, process control and automation, data processing (coding, decoding, pattern analysis, automatic error correction and similar processes), telemetry control and other communication systems, evaluation of electronic equipment and maintenance of electronic systems, including advice and observation thereof;

“project” means all or part of a building or scheme in respect of which the professional engineer or incorporated engineer is commissioned; and

“works” or “engineering works” means that part of a project for which the professional engineer or incorporated engineer is responsible.



### 1.2 *Calculation of cost*

If the fees chargeable under this Schedule are calculated on the cost of the works, such cost shall, unless expressly otherwise provided, be calculated in accordance with the provisions of regulation 2.2.3, 3.2.3 or 4.2.3, as the case may be.

### 1.3 *Works making unusually high demands*

For purposes of regulations 2.3.2, 3.3.2 and 4.3.2 the following shall be deemed to make unusually high demands on the professional engineer or incorporated engineer:

- 1.3.1 Where the works call for the application of new, unusual or untried techniques, alteration or existing works, incorporation of second-hand plant, design or application of complex control circuits, systems or processes or the excessive complexity of the whole or part of the works or of individual elements each requiring original design;
- 1.3.2 where the works comprise substantial portions of dissimilar types of services to such extent that the joint detailed attention of professional engineers or incorporated engineers of distinctly different expertise are required;
- 1.3.3 where the works being undertaken are on separate non-contiguous sites, even if such works form part of one overall appointment; and
- 1.3.4 when, with the agreement or at the request of the client, the continuity of the works is interrupted or the works are fragmented by being constructed in separately documented phases or sections.

### 1.4 *Existing projects*

- 1.4.1 For any engineering services referred to in this Schedule which were performed prior to the date of publication hereof in respect of a project in existence at such date, the fees agreed upon prior to the said date shall be charged.
- 1.4.2 For any engineering services referred to in this Schedule which are to be performed after the date of publication hereof in respect of a project in existence at such date, the fees as set out in this Schedule may be charged.

### 1.5 *Disbursements*

In addition to fees which may be charged in terms of this Schedule, an additional fee, as agreed with the client, may be charged for disbursements necessarily incurred with regard to -

- 1.5.1 printing, copying, acquisition of all documents, records, drawings or maps;
- 1.5.2 legal, architectural or other specialist advice obtained on behalf of the client with his or her consent;
- 1.5.3 surveys, model tests, site or foundation or special investigations or laboratory tests and analysis carried out on behalf of the client and with his or her consent;
- 1.5.4 special cablegrams, telegrams, telex and telefax charges, telephone calls and postage on drawings and documents;
- 1.5.5 accommodation and subsistence costs reasonably incurred by the professional engineer or incorporated engineer and members of his or her staff;
- 1.5.6 advertising on behalf of the client;
- 1.5.7 special insurance taken out with the client's consent; and
- 1.5.8 scrutiny, inspection, application and other formal charges imposed by competent authorities.

## 2. ENGINEERING SERVICES FOR CIVIL, STRUCTURAL, MECHANICAL, ELECTRICAL AND ELECTRONIC PROJECTS.

### 2.1 SERVICES OF THE PROFESSIONAL ENGINEER OR INCORPORATED ENGINEER

#### 2.1.1 NORMAL SERVICES

The following shall be normal services to be performed by the professional engineer or incorporated engineer:

##### 2.1.1.1 REPORT STAGE

The report stage shall include the preparation and submission of a report of preliminary proposals or feasibility studies and estimates of cost for consideration by the client and shall, where necessary, also include -

- 2.1.1.1.1 consultation with the client or his or her authorised representatives;

- 2.1.1.1.2 inspection of the site of the works;
- 2.1.1.1.3 preliminary investigation, route location, planning and design where any of these are required for determination of feasibility;
- 2.1.1.1.4 consultation with local authorities;
- 2.1.1.1.5 advice to the client as to the need for surveys, analyses, tests and site or other investigations where such are required for the completion of the report, and arranging for these to be carried out at the cost of the client;
- 2.1.1.1.6 the investigation and collation of available data, drawings and plans relating to the works; and
- 2.1.1.1.7 investigations of the financial implications of the proposals.

2.1.1.2 PRELIMINARY DESIGN STAGE

The preliminary design stage shall comprise of the development of preliminary proposals or the basic planning of the works as may be required by the client and shall, where necessary, also include -

- 2.1.1.2.1 a submission of a basic planning report, if so required by the client;
- 2.1.1.2.2 advice to the client as to the need for any further surveys, analyses, tests and site or other investigations, and arranging for these to be carried out at the cost of the client;
- 2.1.1.2.3 advice to the client as to the appointment and determination of the services of other professional engineers or incorporated engineers, architects and specialist advisers, arranging such appointments and consultation with such advisers in matters affecting the works;
- 2.1.1.2.4 the design or any process or system, or refinement of the preliminary process design, where such process design is a prerequisite to the design of the works;
- 2.1.1.2.5 the preparation of preliminary plans, drawings and cost estimates required for seeking the necessary approval of statutory authorities;
- 2.1.1.2.6 consultation with interested parties on technical matters; and
- 2.1.1.2.7 modifications to the preliminary design of the works as a result of such consultations.

### 2.1.1.3 DESIGN AND TENDER STAGE

The design and tender stage shall include the drafting of all documents necessary for the engineering works to be given out on tender or to be placed by the client in any other manner, and shall, where necessary, also include -

- 2.1.1.3.1 advice to the client as to the necessity for setting out or staking out the works, and arranging for such to be carried out at the cost of the client;
- 2.1.1.3.2 the preparation of designs, drawings, specifications and engineering schedules of quantities;
- 2.1.1.3.3 the drafting or adapting invitations to tender, tender conditions, forms of tender and conditions of contract; and
- 2.1.1.3.4 analysis of tenders and submission of recommendations on the acceptance of tenders and estimates of the cost of the works.

### 2.1.1.4 CONSTRUCTION STAGE

The construction stage shall include the general administration and other services connected with the carrying out of the works, and shall, where necessary, also include -

- 2.1.1.4.1 placing orders for the engineering works on behalf of the client;
- 2.1.1.4.2 advice to the client as to the drafting of the contract documents, or the drafting of the contract documents by the professional engineer or incorporated engineer;
- 2.1.1.4.3 advice to the client as to the appointment of site staff referred to in regulation 2.1.2.1;
- 2.1.1.4.4 preparation of any further plans, designs and drawings, excluding shop details, which may be necessary for the carrying out of the works and shall include bending schedules in the case of reinforced concrete work;
- 2.1.1.4.5 checking contractors' drawings of structures, plant, equipment and systems for the permanent works to ensure that it complies with design requirements, but excluding detailed checking of manufacture and installation details for erection or installation fit;

- 2.1.1.4.6 advice to the client on alternative designs and tenders, but excluding detailed inspections, reviewing and checking of alternative designs and drawings not prepared by the professional engineer or incorporated engineer and submitted by any contractor or potential contractor;
- 2.1.1.4.7 issuing instructions to contractors, co-ordination and general inspection of the execution of the works for compliance with the contract at such intervals as the professional engineer or incorporated engineer may deem necessary and directing site staff, but excluding detailed and daily inspection of the works and site administration referred to in regulation 2.1.2.1;
- 2.1.1.4.8 issuing certificates for payment to contractors and the determination of final quantities with contractors where site staff have been engaged, but excluding measurements on site;
- 2.1.1.4.9 deciding on disputes or differences that may arise between the client and the contractors, but not by way of mediation, arbitration and litigation;
- 2.1.1.4.10 issuing variation orders;
- 2.1.1.4.11 advice to the client regarding the inspection and testing of such materials and plant as are usually inspected and tested, and arranging for such inspection and testing to be carried out at the cost of the client;
- 2.1.1.4.12 making arrangements for carrying out and witnessing of performance or acceptance tests on site;
- 2.1.1.4.13 making arrangements, on behalf of the client, for the provision and reproduction of such drawings and documents as may be required by contractors and site staff for the execution of the engineering works; and
- 2.1.1.4.14 making arrangements to provide the client, on completion of the engineering works, with such record drawings and manuals as may be required for the operation and maintenance of the engineering works, and preparing such documents as may be necessary to co-ordinate the drawings and manuals provided.

## 2.1.2 ADDITIONAL SERVICES

Services in connection with the items set out below are additional to the normal services of the professional engineer or incorporated engineer, and the professional engineer or incorporated engineer shall obtain the approval of the client for the execution thereof:

**2.1.2.1 PROVISION OF SITE STAFF**

2.1.2.1.1 If the client so requires, the professional engineer or incorporated engineer charged with the services referred to in regulation 2.1.1.4 shall appoint such competent site staff as may be necessary for the efficient checking of the setting out of the works, the day-to-day inspection of the construction of the works, the measuring of work on the site and for determining quantities with representatives of the contractors.

2.1.2.1.2 If adequate site staff have not been appointed, the professional engineer or incorporated engineer shall, with approval of the client, provide such additional services as may be necessary for carrying out the functions referred to in regulation 2.1.2.1.1.

**2.1.2.2 LEADER OF THE PROFESSIONAL TEAM**

If the client requires from the professional engineer or incorporated engineer to act as leader of the professional team, which may include other professional engineers or incorporated engineers, architects or expert advisers, the additional services shall include the following:

2.1.2.2.1 Responsibility for the overall administration of all sections of the project, including those which fall within the ambit of functions of the other professional advisers in the team;

2.1.2.2.2 responsibility for the overall co-ordination and programming of the design and financial control of the project; and

2.1.2.2.3 approval of the certificates for payment to contractors issued by the other professional advisers in the team, prior to the presentation thereof to the client for settlement.

**2.1.2.3 MEDIATION, ARBITRATION, LITIGATION AND SIMILAR SERVICES**

If the client instructs the professional engineer or incorporated engineer to -

2.1.2.3.1 deal with water court and water law matters and obtain the necessary statutory approval, licences or permits;

2.1.2.3.2 assist with contemplated or actual mediation, arbitration or litigation proceedings; or

2.1.2.3.3 attend the proceeding of courts, commissions of inquiry, select committees and similar statutory bodies, or to appear at such proceedings,

the extent of such acts shall be subject to agreement between such client and professional engineer or incorporated engineer.

2.1.2.4 INCIDENTAL ADDITIONAL SERVICES

Incidental additional services shall include -

- 2.1.2.4.1 enquiries not directly connected with the design, documentation and inspection of the execution of the works;
- 2.1.2.4.2 valuation of plant, equipment, material, systems, land or buildings for the purposes of purchase, sale, hiring or letting thereof, or the making of arrangements for such valuation;
- 2.1.2.4.3 the making of arrangements for wayleaves, servitudes or expropriations;
- 2.1.2.4.4 negotiations and making of arrangements for the provision or diversion of utility services which do not form part of the engineering works;
- 2.1.2.4.5 making such amendments as may be required to obtain the formal approval of authorities concerned, where such amendments are necessary as a result of changes in policy by such authorities, and other causes beyond the control of the professional engineer or incorporated engineer;
- 2.1.2.4.6 surveys, analyses, tests and site or foundation or other investigations, model tests, laboratory tests and analyses and performance or acceptance tests referred to in regulations 2.1.1.1.5, 2.1.1.2.2 and 2.1.1.4.12;
- 2.1.2.4.7 setting out or staking out the works referred to in regulation 2.1.1.3.1;
- 2.1.2.4.8 the preparation or detailed checking of manufacture and installation details for erection fit;
- 2.1.2.4.9 detailed inspection, reviewing and checking of designs and drawings not prepared by the professional engineer or incorporated engineer and submitted by any contractor or potential contractor as alternative to those embodied in tender or similar documents prepared by the professional engineer or incorporated engineer;
- 2.1.2.4.10 the preparation and setting out of particulars and calculations in a manner required by any authority concerned, which differs from what the client requires;

- 2.1.2.4.11 services which give rise to abnormal additional costs for the professional engineer or incorporated engineer, and shall include -
  - 2.1.2.4.11.1 services arising from the failure of any contractor to complete his or her contract;
  - 2.1.2.4.11.2 services performed by the professional engineer or incorporated engineer which is customarily or contractually incumbent upon the contractor to perform, whether by virtue of special contractual provisions relieving the contractor of his or her customary obligations, or in consequence of the contractor's failure to meet his or her contractual obligations; and
  - 2.1.2.4.11.3 services performed by the professional engineer or incorporated engineer in determining any remedial measures, making any additional or more extended site visits or resolving any disputes which are the direct and necessary consequence of any failure by the contractor to comply with any specifications, drawings, procedures, construction programmes, time-table or due completion date in terms of the provisions of the contract;
- 2.1.2.4.12 executing or arranging for the periodic monitoring and adjustment of the engineering works in order to optimise or maintain the proper functioning of any process or system;
- 2.1.2.4.13 investigating or reporting on tariffs or charges leviable by the client;
- 2.1.2.4.14 the advance ordering or reservation of materials, the obtaining of licences and permits and the checking of actual labour and plant and material returns for the purpose of establishing or adjusting the contract price;
- 2.1.2.4.15 the inspection and testing (other than on site) of materials and plant, including inspection and work testing during and after manufacture;
- 2.1.2.4.16 additional services -
  - 2.1.2.4.16.1 where the site staff referred to in regulation 2.1.2.1.2 has not been appointed;
  - 2.1.2.4.16.2 as a result of damage to or destruction of the works as referred to in regulation 2.2.4;
  - 2.1.2.4.16.3 as a result of postponement, cancellation or abandoning of the works as referred to in regulation 2.2.5; and
  - 2.1.2.4.16.4 as a result of alterations or modifications to design as referred to in regulation 2.2.6; and



- 2.1.2.4.17 any additional services, of whatever nature, other than those referred to in this regulation.

## 2.2 REMUNERATION AND BASIS OF PAYMENT OF THE PROFESSIONAL ENGINEER OR INCORPORATED ENGINEER FOR MECHANICAL, ELECTRICAL AND ELECTRONIC ENGINEERING SERVICES PERTAINING TO BUILDING PROJECTS

### 2.2.1 REMUNERATION

#### 2.2.1.1 FULL NORMAL SERVICES

The remuneration of the professional engineer or incorporated engineer for normal services referred to in regulation 2.1.1 is the following:

##### 2.2.1.1.1 REPORT STAGE

The fee for the report stage referred to in regulation 2.1.1.1, is a time charge as provided for in regulation 2.3.4 and shall, unless otherwise agreed upon, be payable to the professional engineer or incorporated engineer on the submission of the preliminary proposals or feasibility studies to the client.

##### 2.2.1.1.2 SUBSEQUENT STAGES

The fees for the preliminary stage, the design and tender stage and the construction stage referred to in regulations 2.1.1.2, 2.1.1.3 and 2.1.1.4 are, subject to the provisions of regulation 2.2.1.2, as set out in regulation 2.3.1 and shall, unless otherwise agreed upon, be payable to the professional engineer or incorporated engineer as follows:

###### 2.2.1.1.2.1 *Preliminary design stage:*

Twenty per cent of the fee when the developed proposals for the construction of the works have been prepared and submitted to the client, subject to the professional engineer or incorporated engineer allowing an appropriate credit for the value of such design work related to the accepted proposals referred to in regulation 2.1.1.1, and which are or can be utilised in the development of the preliminary proposals.

###### 2.2.1.1.2.2 *Design and tender stage:*

A further 40 per cent of the fee when the drawings and other documents necessary for the works to be given out on tender or to be placed by the client in any other manner, have been prepared and submitted to the

client: Provided that if the professional engineer or incorporated engineer has prepared such drawings and documents as part of the development of the preliminary proposals, the fee referred to in regulation 2.2.1.1.2.1 is to be increased with 50 per cent and the fee referred to in this regulation is to be reduced to 10 per cent.

2.2.1.1.2.3 *Construction stage:*

2.2.1.1.2.3.1 *Civil and structural:*

A further 15 per cent (or a *pro rata* part) of the fee on completion of working drawings: Provided that if the professional engineer or incorporated engineer has prepared all or some of such working drawings as part of the tender documents or prior to the placing of the works, all or the appropriate portion of the fee referred to in this regulation, as the case may be, shall be added to the fee referred to in regulation 2.2.1.1.2.2, and the remaining 25 per cent of the fee shall be claimed as and when the construction or installation work proceeds, in proportion to the cost of the works completed.

2.2.1.1.2.3.2 *Mechanical, electrical and electronic:*

The remaining 40 per cent of the fee as and when the construction or installation work proceeds, in proportion to the cost of the works completed.

2.2.1.2 PARTIAL NORMAL SERVICES

If the professional engineer or incorporated engineer is appointed to perform services not including all the stages referred to in regulations 2.1.1.1, 2.1.1.2, 2.1.1.3 and 2.1.1.4, the fee is as follows:

2.2.1.2.1 Preliminary design stage only: 30 per cent of the fee, subject to the appropriate credit referred to in regulation 2.2.1.1.2.1;

2.2.1.2.2 preliminary design stage and the design and tender stage only:

2.2.1.2.2.1 civil and structural, excluding completion of working drawings: 70 per cent of the fee, subject to the appropriate credit referred to in regulation 2.2.1.1.2.1;

2.2.1.2.2.2 civil and structural, including completion of working drawings: 85 per cent of the fee, subject to the appropriate credit referred to in regulation 2.2.1.1.2.1;

2.2.1.2.2.3 civil and structural, including completion of the working drawings, reinforcing details, bending schedules and structural steel drawings, excluding shop details: 100 per cent of the additional fees set out in regulations 2.3.1.1.2, 2.3.1.1.3 and 2.3.1.1.4, plus 85 per cent of the basic fee as set out in regulation 2.3.1.1.1;

2.2.1.2.2.4 mechanical, electrical and electronic: 70 per cent of the fee, subject to the appropriate credit referred to in regulation 2.2.1.1.2.1;

2.2.1.2.3 construction stage only, but excluding the drafting of any working drawings:

2.2.1.2.3.1 civil and structural: 35 per cent of the fee;

2.2.1.2.3.2 mechanical, electrical and electronic: 50 per cent of the fee.

#### 2.2.1.3 ADDITIONAL SERVICES

The fees or charges for additional services referred to in regulation 2.1.2, are as follows:

##### 2.2.1.3.1 PROVISION OF SITE STAFF

The charge for the additional services performed by the professional engineer or incorporated engineer in providing site staff referred to in regulation 2.1.2.1.1, is as set out in regulation 2.3.3.1.

##### 2.2.1.3.2 LEADER OF THE PROFESSIONAL TEAM

The fee for the additional services referred to in regulation 2.1.2.2 which the professional engineer or incorporated engineer performs as leader of the professional team, is as set out in regulation 2.3.3.2, and is apportioned as for normal services as set out in regulation 2.2.1.1.

##### 2.2.1.3.3 MEDIATION, ARBITRATION, LITIGATION AND SIMILAR SERVICES

The fee for the services referred to in regulation 2.1.2.3, is as set out in regulation 2.3.3.3.

##### 2.2.1.3.4 INCIDENTAL ADDITIONAL SERVICES

The fee for incidental additional services referred to in regulation 2.1.2.4, is a time charge as provided for in regulation 2.3.4.

**2.2.1.3.5 SITE STAFF NOT APPOINTED**

If adequate or suitable site staff have not been appointed, the fee for the necessary incidental services rendered by the professional engineer or incorporated engineer or his or her staff and for site visits additional to those referred to in regulation 2.1.1.4.7 is a time charge as provided for in regulation 2.3.4, or fees as agreed with the client.

**2.2.2 INTERIM PAYMENTS TO THE PROFESSIONAL ENGINEER OR INCORPORATED ENGINEER**

2.2.2.1 For the purposes of calculating the interim payments referred to in regulation 2.2.1.1.2, the cost of the engineering works, which shall exclude any provisional allowances made to cover contingencies and escalation, shall be determined as follows:

2.2.2.1.1 The net amount of the accepted tender; or

2.2.2.1.2 if no tender is accepted, the net amount of the lowest suitable tender; or

2.2.2.1.3 if the contract is awarded by negotiation, the negotiated price; or

2.2.2.1.4 if no tenders have been invited or if no suitable tenders have been received or if no negotiation was concluded, the mutually agreed estimate.

2.2.2.2 Such interim payments shall rank as part of the total fee ultimately payable, which shall be calculated on the final cost of the works in accordance with the provisions of regulation 2.2.3.

**2.2.3 COST OF THE ENGINEERING WORKS**

2.2.3.1 For the purpose of calculating the total fee referred to in these regulations, the cost of the engineering works, or any part thereof, shall be the cost of the works designed, specified or administered by the professional engineer or incorporated engineer, and shall include -

2.2.3.1.1 the amount certified for payment to contractors in respect of the works, before deduction of liquidated damages or penalties, if any;

2.2.3.1.2 in cases where the client provides labour, tools, construction plant or materials, manufactured goods or machinery for incorporation in the works, a direct and fair valuation based on normal charges by contractors for similar items including depreciation, waste, repairs, overheads and profit;

- 2.2.3.1.3 an agreed fair valuation of the difference between the cost price of any second-hand materials, manufactured goods or machinery incorporated in the works and the market value of such materials, manufactured goods and machinery as though they were purchased new; and
- 2.2.3.1.4 the cost of any exploratory drilling, test piling, soil resistivity measurement, adits or excavation of shafts for which the professional engineer or incorporated engineer is required to prepare contract documents and which he or she is required to inspect or administer.
- 2.2.3.2 If the engineering works for which the professional engineer or incorporated engineer is responsible are carried out as a portion of the contract, whether by subcontract or otherwise, the cost of the engineering works shall also include a fair proportion of the contractor's preliminary and general charges.
- 2.2.3.3 The cost of the works shall not include the following:
  - 2.2.3.3.1 Administrative expenses incurred by the client;
  - 2.2.3.3.2 professional fees and disbursements;
  - 2.2.3.3.3 cost of surveys;
  - 2.2.3.3.4 salaries, travelling and out-of-pocket and office expenses of the site staff;
  - 2.2.3.3.5 finance costs and charges incurred by the client; and
  - 2.2.3.3.6 cost of land, servitudes and wayleaves.
- 2.2.3.4 If any contract, notwithstanding the provisions of regulation 2.2.3.1, determines that payments to contractors shall be increased or decreased during the currency of the contract in accordance with any fluctuation in the actual cost of specified items or in prescribed indices, the value of such increases or decreases in cost, as the case may be, shall be brought into account in determining the cost of the works for purposes of calculating the total fee ultimately payable, as follows:
  - 2.2.3.4.1 In respect of that portion of the total fee becoming due during the construction stage in terms of the provisions of regulation 2.2.1.1.2.3, the total of the increases or decreases in cost actually certified for payment under the contracts; and

2.2.3.4.2 in respect of that portion of the fee becoming due prior to the construction stage in terms of the provisions of regulations 2.2.1.1.2.1 and 2.2.1.1.2.2 and, where applicable, in respect of any working drawings completed prior to the placing of the works as referred to in regulation 2.2.1.1.2.3, the total of the increases or decreases in cost actually certified for payment, with a maximum of 10 per cent of the original contract amount, excluding contingencies.

2.2.4 **DAMAGE TO, OR DESTRUCTION OF, THE WORKS**

If, at any time before the completion of the works, any part of the engineering works or the equipment therefor, is damaged or destroyed as a result of war, fire, storms, flood or other causes beyond the control of the professional engineer or incorporated engineer, the client shall pay to the professional engineer or incorporated engineer the appropriate fee for any additional services which may be required of him or her, including design, inspection and administration as a result of such damage or destruction.

2.2.5 **POSTPONEMENT, CANCELLATION OR ABANDONMENT OF THE WORKS**

2.2.5.1 If the works are postponed, cancelled or abandoned in whole or in part after the client has instructed the professional engineer or incorporated engineer to continue with any of the stages referred to in regulations 2.1.1.2, 2.1.1.3 and 2.1.1.4, the fee of the professional engineer or incorporated engineer for services performed in respect of that part of the works performed before such works are postponed, cancelled or abandoned, is as set out in regulation 2.2.1.1.1, plus a surcharge of 10 per cent of such amount, and as set out in any other regulation, if applicable, in proportion to the services performed prior to the works being postponed, cancelled or abandoned.

2.2.5.2 If, within two years from the date of postponement, the postponed works, or any part thereof, are resumed, the fee paid in terms of the provisions of regulation 2.2.5.1 shall be considered to be final payment for the services which have already been performed, and payment for subsequent services shall be separately calculated.

2.2.5.3 If additional services referred to in regulation 2.1.2 are required from the professional engineer or incorporated engineer after resumption of the postponed works, the fee for such additional services is a time charge as provided for in regulation 2.3.4.

2.2.5.4 In the event of the engineering works, or any part thereof, being postponed for a period longer than two years, such works shall be considered as having been abandoned.

2.2.5.5 The cost of the works for the purposes of this regulation shall be the mutually agreed estimate of the cost of the relevant parts of the works completed at the time of its postponement, cancellation or abandonment.

2.2.6 **ALTERATIONS OR MODIFICATIONS TO DESIGNS**

If circumstances arise which could not have been reasonably foreseen by the professional engineer or incorporated engineer, or in the event of the client modifying the design requirements and thus necessitating alterations to completed designs or alterations to designs in progress, and which also require the alteration or remaking of any specification, drawing or other document prepared in whole or in part by the professional engineer or incorporated engineer, such revision, amendment or reproduction of such designs, drawings or documents to bring the work up to the stage at which it was modified, are, subject to additional payment against a time charge, calculated in accordance with the provisions of regulation 2.3.4.

2.3 **TARIFF OF CONSULTING FEES FOR ENGINEERING SERVICES FOR CIVIL, STRUCTURAL, MECHANICAL, ELECTRICAL AND ELECTRONIC PROJECTS**

2.3.1 **SERVICES OF A NORMAL NATURE**

In respect of works making normal demands on the time of the professional engineer or incorporated engineer, the fees set out in regulations 2.3.1.1, 2.3.1.2, 2.3.1.3, 2.3.1.4 and 2.3.1.5 are applicable.

2.3.1.1 **CIVIL AND STRUCTURAL ENGINEERING SERVICES**

The fee for civil and structural engineering services is as follows:

## 2.3.1.1.1 BASIC FEES

Where the cost of the works -		the fee is the sum of the primary fee set out in column 3 and the secondary fee calculated in accordance with column 4	
exceeds -	but does not exceed -	Primary fee	Secondary fee: Calculated on the total cost of the works at the following percentage
Column 1	Column 2	Column 3	Column 4
R	R	R	%
—	335 000	1 000	10,5
335 000	613 000	4 350	9,5
613 000	922 000	7 415	9,0
922 000	1 380 000	12 025	8,5
1 380 000	2 303 000	18 925	8,0
2 303 000	3 838 000	30 440	7,5
3 838 000	6 140 000	49 630	7,0
6 140 000	9 211 000	80 330	6,5
9 211 000	16 886 000	149 413	5,75
16 886 000	27 632 000	233 843	5,25
27 632 000	39 913 000	372 003	4,75
39 913 000	67 544 000	471 785	4,5
67 544 000	and over	640 645	4,25

## 2.3.1.1.2 ADDITIONAL FEE FOR THE REINFORCED CONCRETE PORTION OF THE WORKS

The additional fee for the reinforced concrete portion of the works, including the concrete, reinforcement and formwork which involves structural design by the professional engineer or incorporated engineer, together with the relevant proportion of the preliminary and general items set out in the schedule of quantities relating to the works, is as follows:



Where the cost of the reinforced concrete portion of the works, including the cost of the relevant preliminary and general items set out in the schedule of quantities -		the additional fee is the sum of the primary fee set out in column 3 and the secondary fee calculated in accordance with column 4	
exceeds -	but does not exceed -	Primary fee	Secondary fee: Calculated on the total cost of the reinforced concrete portion of the works at the following percentage
Column 1	Column 2	Column 3	Column 4
R	R	R	%
—	3 380 000	—	3,4
3 380 000	5 063 000	8 450	3,15
5 063 000	6 753 000	21 108	2,9
6 753 000	11 358 000	37 990	2,65
11 358 000	16 886 000	100 459	2,1
16 886 000	and over	184 889	1,6

#### 2.3.1.1.3 ADDITIONAL FEE FOR THE STRUCTURAL STEELWORK PORTION OF THE WORKS

The additional fee for the structural steelwork portion of the works, together with the relevant proportion of the preliminary and general items set out in the schedule of quantities relating to the works, is to be calculated at 50 per cent of the rate set out in regulation 2.3.1.1.2.

2.3.1.1.4 ADDITIONAL FEE FOR STRUCTURAL PORTION OF THE WORKS IN OTHER MATERIALS

The additional fee for the structural portion of the work in other materials, shall be as agreed upon between the client and the professional engineer or incorporated engineer.

2.3.1.2 CIVIL AND STRUCTURAL ENGINEERING SERVICES FOR WHICH SPECIAL FEES ARE PROVIDED

2.3.1.2.1 RAILWAY TRACKWORK

The fee for railway trackwork is to be calculated in accordance with the provisions of regulation 2.3.1.1, except that 50 per cent of the cost of permanent way materials in respect of railway trackwork shall be excluded from the cost of the works referred to in regulation 2.2.3, but that the cost of ballast and equipment specially designed by the professional engineer or incorporated engineer shall be included in the cost of the works referred to in the said regulation 2.2.3.

2.3.1.2.2 ROADWORKS

The fee for roadworks is to be calculated in accordance with the provisions of regulation 2.3.1.1, except that the fee for the roadworks element of the project (i.e. excluding the fee for the structural element) is to be reduced by the appropriate percentage as set out below:

Type of roadwork	Percentage reduction in fee for the roadworks element
Rural and peri-urban single carriageway roads .....	20 %
Rural freeways and conventional double carriageway roads .....	5 %
Peri-urban freeways and conventional double carriageway roads .....	5 %
Urban streets .....	Nil
Urban freeways and conventional double carriageway roads .....	Plus 25 %

### 2.3.1.3 WATER AND WASTE WATER TREATMENT WORKS

The fee for water and waste water treatment works is to be calculated in accordance with the provisions of regulation 2.3.1.1, and such amount shall be increased by 25 per cent.

### 2.3.1.4 MECHANICAL AND ELECTRICAL ENGINEERING SERVICES

#### 2.3.1.4.1 MECHANICAL ENGINEERING SERVICES

The fee for mechanical engineering services is as follows:

Where the cost of the works -		the fee is the sum of the primary fee set out in column 3 and the secondary fee calculated in accordance with column 4	
exceeds -	but does not exceed -	Primary fee	Secondary fee: Calculated on the total cost of the works at the following percentage
Column 1	Column 2	Column 3	Column 4
R	R	R	%
—	346 000	900	10,5
346 000	585 000	4 360	9,5
585 000	864 000	7 285	9,0
864 000	1 436 000	11 705	8,5
1 436 000	2 294 000	18 885	8,0
2 294 000	4 017 000	30 355	7,5
4 017 000	5 746 000	50 440	7,0
5 746 000	8 632 000	79 170	6,5
8 632 000	20 090 000	143 910	5,75
20 090 000	and over	244 360	5,25

## 2.3.1.4.2 ELECTRICAL ENGINEERING SERVICES

The fee for electrical engineering services is as follows:

Where the cost of the works -		the fee is the sum of the primary fee set out in column 3 and the secondary fee calculated in accordance with column 4	
exceeds -	but does not exceed -	Primary fee	Secondary fee: Calculated on the total cost of the works at the following percentage
Column 1	Column 2	Column 3	Column 4
R	R	R	%
—	314 000	1 000	10,5
314 000	510 000	4 140	9,5
510 000	775 000	6 690	9,0
775 000	1 291 000	10 565	8,5
1 291 000	2 073 000	17 020	8,0
2 073 000	3 622 000	27 385	7,5
3 622 000	5 178 000	45 495	7,0
5 178 000	7 780 000	71 385	6,5
7 780 000	18 106 000	129 735	5,75
18 106 000	and over	220 265	5,25

## 2.3.1.5 ELECTRONIC ENGINEERING SERVICES

The fee in respect of electronic engineering work is as follows:

## 2.3.1.5.1 BASIC FEES

Where the cost of the works -		the fee is the sum of the primary fee set out in column 3 and the secondary fee calculated in accordance with column 4	
exceeds -	but does not exceed -	Primary fee	Secondary fee: Calculated on the total cost of the works at the following percentage
Column 1	Column 2	Column 3	Column 4
R	R	R	%
—	319 000	1 594	15,75
319 000	519 000	6 379	14,25
519 000	788 000	10 271	13,50
788 000	1 313 000	16 181	12,75
1 313 000	2 062 000	26 028	12,00
2 062 000	3 681 000	41 823	11,00
3 681 000	5 263 000	69 436	10,25
5 263 000	7 906 000	108 903	9,50
7 906 000	18 400 000	168 198	8,75
18 400 000	and over	306 198	8,00

2.3.1.5.1.2 Where electronic equipment or systems are wholly proprietary designed or approved by a State authority having control over such designs or products, the basic fee referred to in regulation 2.3.1.5.1.1 is to be reduced by 33,3 per cent.

2.3.1.5.2 PROGRAMMING

Where the service of the professional engineer or incorporated engineer includes the provision of a complete computer programme comprising of programme design, coding and documentation in respect of such programme, the fee per programme instruction is to be calculated at two-thirds of the time charge provided for in regulation 2.3.4.

2.3.1.5.3 OTHER LISTED SERVICES

The fee for the following listed services is a time charge as provided for in regulation 2.3.4.

2.3.1.5.3.1 Post-comissioning care;

2.3.1.5.3.2 programme design;

2.3.1.5.3.3 programme coding; and

2.3.1.5.3.4 checking of documentation.

2.3.1.6 WORKS IN DIFFERENT CATEGORIES, DISSIMILAR WORKS AND FRAGMENTED WORKS

2.3.1.6.1 Where a single contract includes works which fall under more than one of the main categories of civil (including structural), mechanical, electrical or electronic engineering works, the fees are to be separately calculated in accordance with the relevant provisions of regulation 2.3.1 in respect of the total cost of the works in each of such categories.

2.3.1.6.2 If the works comprise substantial portions of dissimilar types of work than the work falling within the main categories referred to in regulation 2.3.1.5.1, the professional engineer or incorporated engineer and the client shall agree to a fee, which shall lie between the fee derived by taking regulation 2.3.1 as applicable to the total cost of the works falling within the main categories, and the fee derived by taking regulation 2.3.1 as applicable to the cost of each of the dissimilar types of work, as if they were separate works.

2.3.1.6.3 If the works are undertaken on separate non-contiguous sites, or if the continuity of the works is interrupted, or if the works are unusually fragmented, or are being executed as separately documented phases in accordance with the requirements or with the consent of the client, the fee may be calculated by taking the provisions of regulation 2.3.1 as applicable to each site, contract or phase as if they are separate works or, if this is inappropriate, the professional engineer or incorporated engineer and the client shall agree to a fee, which shall lie between the fee derived by taking regulation 2.3.1 as applicable to the total cost of the works and the fee derived by taking regulation 2.3.1 as applicable to the cost of each as if they were separate works.

2.3.1.7 ALTERATION TO EXISTING WORKS

The fee for alteration to existing works is to be calculated in accordance with the provisions of regulation 2.3.1 and such amount shall be increased by 25 per cent.

2.3.2 SERVICES NOT OF A NORMAL NATURE

2.3.2.1 WORKS MAKING UNUSUALLY HIGH DEMANDS

The fee for engineering services in respect of certain works or parts of works, as set out below, which make unusually high demands on the professional engineer or incorporated engineer, is to be calculated as follows:

2.3.2.1.1 UNUSUALLY TIME-CONSUMING WORKS

For urban freeways, the fee is to be calculated in accordance with the provisions of regulation 2.3.1.2.2 and such amount shall be increased up to 25 per cent as agreed with the client.

2.3.2.1.2 OTHER TYPES OF WORKS

2.3.2.1.2.1 In respect of other types of works or parts of works, including those referred to in regulation 1.1.3, which make unusually high demands on the professional engineer or incorporated engineer, the professional engineer or incorporated engineer and the client shall agree to an increase of the fee referred to in regulation 2.3.1 which shall be equitable when taking into account the causes and extent of the unusually high demands made on the professional engineer or incorporated engineer.

2.3.2.1.2.2 The professional engineer or incorporated engineer shall, as soon as it becomes evident to him or her and generally not later than at the completion of the report stage, inform the client if he or she considers the works to be of such a nature as to warrant an increase of the fee referred to in regulation 2.3.2.1.2.1: Provided that if it only becomes evident at a later stage that the works are of a nature making unusually high demands on the professional engineer or incorporated engineer, such professional engineer or incorporated engineer shall inform the client thereof without delay, in which event the portion of the services which has already been completed by the professional engineer or incorporated engineer when he or she so informs the client, shall not be subject to the increased fee, unless he or she and the client agrees otherwise.

2.3.2.2 WORKS MAKING UNUSUALLY LOW DEMANDS

2.3.2.2.1 In respect of works or parts of works which make unusually low demands on the professional engineer or incorporated engineer, the professional engineer or incorporated engineer and the client shall agree to a fee equitable for such works, taking into account the causes and extent of the unusual reduction in the demands made on the professional engineer or incorporated engineer.

2.3.2.2.2 In respect of electronic engineering services where equipment or systems are of wholly proprietary design or are approved by a government body having control over designs or products of the type in question, the application of such design or product is to be regarded as work making less than normal demands on the professional engineer or incorporated engineer, and the surcharge in respect of the complexity factor built into the fee scale for electronic engineering services will not apply, but the appropriate fee is to be calculated in accordance with the applicable tariff for mechanical and electrical engineering services.

2.3.3 ADDITIONAL SERVICES

2.3.3.1 PROVISION OF SITE STAFF

The professional engineer's or incorporated engineer's charge for the provision of site staff referred to in regulation 2.1.2.1.1, is to be calculated as follows:

2.3.3.1.1 Salary of the site staff, including regular bonus, plus 30 per cent of such amount;



2.3.3.1.2 removal costs, on-site transport cost and housing allowances, plus 10 per cent of such amount; and

2.3.3.1.3 all other direct costs and allowances, as agreed with the client, plus 10 per cent of such amount, or such other direct costs and allowances, as agreed with the client, be taken as 55 per cent of the salaries of the site staff, inclusive of regular bonus.

2.3.3.2 LEADER OF THE PROFESSIONAL TEAM

The fee for additional services referred to in regulation 2.1.2.2 which the professional engineer or incorporated engineer performs as leader of the professional team, is 10 per cent of the fees payable to each of the other members of the professional team.

2.3.3.3 MEDIATION, ARBITRATION, LITIGATION AND SIMILAR SERVICES

2.3.3.3.1 The fee for acting as mediator or arbitrator where there is more than one mediator or arbitrator, or for acting as assessor, is a time charge as provided for in regulation 2.3.4.1, plus 25 per cent of such amount, with a minimum of two hours.

2.3.3.3.2 The fee for acting as sole mediator, arbitrator or umpire is a time charge as provided for in regulation 2.3.4.1, plus 75 per cent of such amount, with a minimum of two hours.

2.3.3.3.3 Services referred to in regulations 2.3.3.3.1 and 2.3.3.3.2 shall include time spent in attending mediation meetings and the arbitration court, studying evidence and in framing the award.

2.3.3.3.4 The fee for services in connection with court proceedings, excluding services referred to in regulations 2.3.3.3.1, 2.3.3.3.2 and 2.3.3.3.3, is a time charge as provided for in regulation 2.3.4, plus 25 per cent of such amount, with a minimum of two hours.

2.3.4 TIME CHARGE

The fee for time charge is calculated at the following rates, per hour or part thereof:

2.3.4.1 Principal, partner or director: For normal services — R180,00.

For service in respect of complex and special cases the said rates may be increased as agreed by the professional engineer or incorporated engineer and the client.

- 2.3.4.2 Member of salaried professional and technical staff: 17 cents per R100 or part thereof of such staff member's total annual remuneration and other employment benefits, which shall include his or her basic annual salary and, if any, any annual bonus, other fringe benefits not included in the basic salary and any contribution in respect of such staff member by his or her employer in terms of the Workmen's Compensation Act, 1941 (Act 30 of 1941), and to any pension fund, providend fund and medical aid fund, and for life insurance: Provided that these rates shall be deemed to include establishment charges and charges in respect of time expended by clerical staff: Provided further that if it should be found that the rate referred to in this subregulation will exceed the rate referred to in regulation 2.3.4.1, the parties concerned shall so agree beforehand.

2.3.5 TRAVELLING TIME

An amount, at the rate provided for in regulation 2.3.4, may be charged for time spent by the professional engineer or incorporated engineer and members of his or her staff in travelling during normal working hours, with a maximum of eight hours per day: Provided that if the professional engineer's or incorporated engineer's fees are calculated on a percentage of the value of the works, and the journey to and from the professional engineer's or incorporated engineer's place of practice does not exceed 50 km, the professional engineer or incorporated engineer and members of his or her staff shall not be reimbursed for time spent in travelling, but all travelling further than 50 km shall be subject to a time charge as provided for in regulation 2.3.4.

2.4 DIRECT CIVIL ENGINEERING COMMISSIONS

The provisions of regulations 2.1 to 2.3.5 shall *mutatis mutandis* apply to a direct civil engineering commission.

3. STRUCTURAL AND CIVIL ENGINEERING SERVICES PERTAINING TO BUILDING PROJECTS, EXCLUDING DIRECT CIVIL ENGINEERING COMMISSIONS.

3.1 SERVICES OF THE PROFESSIONAL ENGINEER OR INCORPORATED ENGINEER

3.1.1 NORMAL SERVICES

The following shall be normal services to be performed by the professional engineer or incorporated engineer:

**3.1.1.1 REPORT STAGE**

The report stage shall include the preparation and submission of a report of preliminary proposals or feasibility studies and estimates of cost for consideration by the client and shall, where necessary, also include -

- 3.1.1.1.1 consultation with the client or his authorised representatives and any other professional advisers appointed by the client in connection with the project;
- 3.1.1.1.2 inspection of the site of the works;
- 3.1.1.1.3 preliminary investigation, route location, planning and design where any of these are required for determination of feasibility;
- 3.1.1.1.4 consultation with local authorities; and
- 3.1.1.1.5 advice to the client as to the need for surveys, analyses, tests and site or other investigations to complete the report, and arranging for these to be carried out at the cost of the client.

**3.1.1.2 PRELIMINARY DESIGN STAGE**

The preliminary design stage shall comprise of the development of preliminary proposals or the basic planning of the works as may be required by the client and shall, where necessary, also include -

- 3.1.1.2.1 a submission of a basic planning report, if so required by the client;
- 3.1.1.2.2 establishing final design criteria;
- 3.1.1.2.3 advice to the client as to the need for any further surveys, analyses, tests and site or other investigations, and arranging for these to be carried out at the cost of the client;
- 3.1.1.2.4 advice to the client as to the appointment and determination of the services of other consulting engineers, architects and specialist advisers, arranging such appointments and consultation with such advisers in matters affecting the works; and
- 3.1.1.2.5 the preparation and submission of sketch plans or line diagrams and updated estimates.

**3.1.1.3 DESIGN AND TENDER STAGE**

The design and tender stage shall include the development of the preliminary designs into working drawings, and shall, where necessary, also include -

- 3.1.1.3.1 the preparation of general arrangement drawings and estimates of steel required for the schedules of quantities;
- 3.1.1.3.2 the provision of outline information necessary for the design of other services;
- 3.1.1.3.3 the provision of adequate information for shop detail drawings to be prepared by the structural steel manufacturer;
- 3.1.1.3.4 the drafting or adapting of invitations to tender, tender conditions, forms of tender and conditions of contract; and
- 3.1.1.3.5 analysis of tenders and submission of recommendations on the acceptance of tenders.

3.1.1.4 CONSTRUCTION STAGE

The construction stage shall include the general administration and other services connected with the carrying out of the works, and shall, where necessary, also include -

- 3.1.1.4.1 placing orders for the works on behalf of the client;
- 3.1.1.4.2 advice to the client as to the drafting of the contract documents, or the drafting of the contract documents by the professional engineer or incorporated engineer;
- 3.1.1.4.3 advice to the client as to the appointment of site staff referred to in regulation 3.1.2.1;
- 3.1.1.4.4 preparation of reinforcing details, bending schedules and other information: Provided that this service may be included in the design and tender stage if full documentation is required before the construction stage;
- 3.1.1.4.5 checking contractors' drawings for the permanent works to ensure that they comply with design requirements, but excluding detailed checking of shop details for erection fit;
- 3.1.1.4.6 advice to the client on alternative designs and tenders, but excluding detailed inspections, reviewing and checking of alternative designs and drawings not prepared by the professional engineer or incorporated engineer and submitted by any contractor or potential contractor;

- 3.1.1.4.7 issuing instructions to contractors, co-ordination and general inspection of the execution of the works for compliance with the contract at such intervals as the professional engineer or incorporated engineer may deem necessary and directing site staff, but excluding detailed and daily inspection of the works and site administration referred to in regulation 3.1.2.1;
- 3.1.1.4.8 attendance at site meetings during the construction of the engineering works, at an average of once per fortnight;
- 3.1.1.4.9 deciding on or assisting the principal agent of the client to decide on disputes or differences that may arise between the client and the contractors, but not by way of mediation, arbitration or litigation;
- 3.1.1.4.10 issuing variation orders, or information for variation orders to be issued;
- 3.1.1.4.11 advice to the client regarding the inspection and testing of such materials and plant as are usually inspected and tested, and arranging for such inspection and testing to be carried out at the cost of the client;
- 3.1.1.4.12 making arrangements, on behalf of the client, for the provision and reproduction of such drawings and documents as may be required by contractors and site staff for the execution of the engineering works; and
- 3.1.1.4.13 making arrangements to provide the client, on completion of the engineering works, with such record drawings and manuals as may be required for the operation and maintenance of the engineering works, and preparing such documents as may be necessary to co-ordinate the drawings and manuals provided.

### 3.1.2 ADDITIONAL SERVICES

Services in connection with the items set out below are additional to the normal services of the professional engineer or incorporated engineer, and the professional engineer or incorporated engineer shall obtain the approval of the client for the execution thereof:

#### 3.1.2.1 PROVISION OF SITE STAFF

- 3.1.2.1.1 If the client so requires, the professional engineer or incorporated engineer charged with the services referred to in regulation 3.1.1.4 shall appoint such competent site staff as may be necessary for the efficient checking of the setting out of the works, the day-to-day inspection of the construction of the works, the measuring of work on the site and for determining quantities with representatives of the contractors.

- 3.1.2.1.2 If adequate site staff have not been appointed, the professional engineer or incorporated engineer shall, with approval of the client, provide such additional services as may be necessary for carrying out the functions referred to in regulation 3.1.2.1.1.
- 3.1.2.2 **PRINCIPAL AGENT OF THE CLIENT**
- If the professional engineer or incorporated engineer is appointed as principal agent of the client, his or her additional services shall include the following:
- 3.1.2.2.1 Advising the client as to the appointment and determination of services of other professional advisers;
- 3.1.2.2.2 leadership of the professional team;
- 3.1.2.2.3 submission of the preliminary and developed proposals in the form of reports, drawings and specification, together with estimates of costs for the project as a whole;
- 3.1.2.2.4 responsibility for the overall administration of all sections of the project, including those which fall within the ambit of functions of the other professional advisers in the team;
- 3.1.2.2.5 responsibility for the overall co-ordination and programming of the design and financial control of the project;
- 3.1.2.2.6 deciding on differences that may arise between the client and the contractors, but not by way of mediation, arbitration or litigation;
- 3.1.2.2.7 approval of the certificates for payment to contractors issued by the other professional advisers in the team, prior to the presentation thereof to the client for settlement;
- 3.1.2.2.8 making arrangements to provide the client, on completion of the project, with such record drawings and manuals as may be required to keep a proper record of the project as constructed, and as may be required for the operation and maintenance of the relevant parts of the project; and
- 3.1.2.2.9 approval of the final contract account for the project as a whole.

3.1.2.3      **MEDIATION, ARBITRATION, LITIGATION  
AND SIMILAR SERVICES**

If the client instructs the professional engineer or incorporated engineer to -

3.1.2.3.1      obtain the necessary statutory approval, licences or permits;

3.1.2.3.2      assist with contemplated or actual mediation, arbitration or litigation proceedings; or

3.1.2.3.3      attend the proceeding of courts, commissions of inquiry, select committees and similar statutory bodies, or to appear at such proceedings,

the extent of such acts shall be subject to agreement between such client and professional engineer or incorporated engineer.

3.1.2.4      **INCIDENTAL ADDITIONAL SERVICES**

Incidental additional services shall include -

3.1.2.4.1      negotiating with authorities other than local authorities;

3.1.2.4.2      surveys, investigations and cost analyses of existing structures;

3.1.2.4.3      the making of arrangements for wayleaves, servitudes or expropriations;

3.1.2.4.4      making such amendments as may be required to obtain the formal approval of authorities concerned, where such amendments are necessary as a result of changes in policy by such authorities, and other causes beyond the control of the professional engineer or incorporated engineer;

3.1.2.4.5      the carrying out of special investigations or tests;

3.1.2.4.6      the preparation or detailed checking of shop details;

3.1.2.4.7      detailed inspection, reviewing and checking of designs and drawings not prepared by the professional engineer or incorporated engineer and submitted by any contractor or potential contractor as alternative to those embodied in tender or similar documents prepared by the professional engineer or incorporated engineer;

3.1.2.4.8      attendance at site meetings in addition to those referred to in regulation 3.1.1.4.8, unless the professional engineer or incorporated engineer is appointed as the principal agent of the client;

- 3.1.2.4.9 services which give rise to abnormal additional costs for the professional engineer or incorporated engineer, and shall include -
  - 3.1.2.4.9.1 services arising from the failure of any contractor to complete his or her contract;
  - 3.1.2.4.9.2 services performed by the professional engineer or incorporated engineer which are customarily or contractually incumbent upon the contractor to perform, whether by virtue of special contractual provisions relieving the contractor of his or her customary obligations, or in consequence of the contractor's failure to meet his or her contractual obligations; and
  - 3.1.2.4.9.3 services performed by the professional engineer or incorporated engineer in determining any remedial measures, making any additional or more extended site visits or resolving any disputes which are the direct and necessary consequence of any failure by the contractor to comply with any specifications, drawings, procedures, construction programmes, time-table or due completion date in terms of the provisions of the contract;
- 3.1.2.4.10 checking, co-ordinating or advising on any part of the project not forming part of the engineering works;
- 3.1.2.4.11 the collection, investigation and collation of the specific data referred to in regulation 3.2.7 and which has not been made available to the professional engineer or incorporated engineer;
- 3.1.2.4.12 additional services -
  - 3.1.2.4.12.1 where the site staff referred to in regulation 3.1.2.1.2 has not been appointed;
  - 3.1.2.4.12.2 as a result of damage to or destruction of the works as referred to in regulation 3.2.4;
  - 3.1.2.4.12.3 as a result of postponement, cancellation or abandoning of the works as referred to in regulation 3.2.5; and
  - 3.1.2.4.12.4 as a result of alterations or modifications to design as referred to in regulation 3.2.6; and
- 3.1.2.4.13 any additional services of whatever nature other than those referred to in this regulation.



### 3.2 REMUNERATION AND BASIS OF PAYMENT OF THE PROFESSIONAL ENGINEER OR INCORPORATED ENGINEER FOR STRUCTURAL AND CIVIL ENGINEERING SERVICES PERTAINING TO BUILDING PROJECTS

#### 3.2.1 REMUNERATION

##### 3.2.1.1 FULL NORMAL SERVICES

Subject to the provisions of regulation 3.2.1.1.5, the remuneration of the professional engineer or incorporated engineer for normal services referred to in regulation 3.1.1 is as set out in regulation 3.3.1 and shall, unless otherwise agreed upon, be payable to the professional engineer or incorporated engineer as follows:

##### 3.2.1.1.1 REPORT STAGE

The fee for the report stage referred to in regulation 3.1.1.1, is 10 per cent of the fee when the services necessary for the report stage have been completed.

##### 3.2.1.1.2 PRELIMINARY DESIGN STAGE

The fee for the preliminary design stage referred to in regulation 3.1.1.2, is a further 10 per cent of the fee when the services necessary for the preliminary design stage have been completed.

##### 3.2.1.1.3 DESIGN AND TENDER STAGE

The fee for the design and tender stage referred to in regulation 3.1.1.3, is a further 35 per cent of the fee on completion of the general arrangement drawings and other documents necessary for the engineering works to be given out on tender or to be placed by the client in any other manner.

##### 3.2.1.1.4 CONSTRUCTION STAGE

The fee for the construction stage referred to in regulation 3.1.1.4, is -

3.2.1.1.4.1 a further 30 per cent (or *pro rata* part) of the fee on completion of all working drawings and schedules;

3.2.1.1.4.2 a further 12,5 per cent of the fee as and when the construction work proceeds in proportion to the cost of work completed; and

3.2.1.1.4.3 the remaining 2,5 per cent of the fee on completion of the final contract account.

**3.2.1.1.5 PARTIAL NORMAL SERVICES**

If the professional engineer or incorporated engineer is appointed to perform services not including all the stages referred to in regulations 3.1.1.1, 3.1.1.2, 3.1.1.3 and 3.1.1.4, the fee is apportioned as follows:

- 3.2.1.1.5.1 Report and preliminary design stage only: 30 per cent of the fee;
- 3.2.1.1.5.2 report stage, preliminary design stage and the design and tender stage only: 60 per cent of the fee;
- 3.2.1.1.5.3 report stage, preliminary design stage and the design and tender stage and preparation of reinforcing details and bending schedules only: 90 per cent of the fee;
- 3.2.1.1.5.4 construction stage only, but excluding the preparation of reinforcing details and bending schedules: 25 per cent of the fee.

**3.2.1.2 ADDITIONAL SERVICES**

The fees or charges for additional services referred to in regulation 3.1.2, are as follows:

**3.2.1.2.1 PROVISION OF SITE STAFF**

The charge for the additional services performed by the professional engineer or incorporated engineer in providing site staff referred to in regulation 3.1.2.1.1, is as set out in regulation 3.3.3.1.

**3.2.1.2.2 PRINCIPAL AGENT OF THE CLIENT**

The fee for the additional services referred to in regulation 3.1.2.2 which the professional engineer or incorporated engineer performs as principal agent of the client, is as set out in regulation 3.3.3.2 and is apportioned as for normal services as set out in regulation 3.2.1.1.

**3.2.1.2.3 MEDIATION, ARBITRATION, LITIGATION AND SIMILAR SERVICES**

The fee for the services referred to in regulation 3.1.2.3, is as set out in regulation 3.3.3.3.

**3.2.1.2.4 INCIDENTAL ADDITIONAL SERVICES**

The fee for incidental additional services referred to in regulation 3.1.2.4, is a time charge as provided for in regulation 3.3.4.

### 3.2.1.2.5 SITE STAFF NOT APPOINTED

If adequate or suitable site staff have not been appointed, the fee for the necessary incidental services rendered by the professional engineer or incorporated engineer or his or her staff and for site visits additional to those referred to in regulation 3.1.1.4.8, is a time charge as provided for in regulation 3.3.4, or fees as agreed with the client.

### 3.2.1.3 FEE FOR RE-USE OF COMPLETED DESIGNS

3.2.1.3.1 If the client wishes to erect one or more duplicates of a particular complete structure or works for which the professional engineer or incorporated engineer has completed investigation, designs, drawings and specification, the fee that the professional engineer or incorporated engineer may charge for the re-use of such documents is 25 per cent of the apportioned fee for normal and additional services carried out in the report, preliminary design and design and tender stages, based on the updated cost of the works duplicated or repeated.

3.2.1.3.2 In addition to the fees referred to in regulation 3.2.1.3.1, the professional engineer or incorporated engineer is to be remunerated for such new work as is necessarily performed by him or her, and he or she shall be paid for all disbursements and expenses.

3.2.1.3.3 Where the professional engineer's or incorporated engineer's services are retained for the construction stage, the fee to be charged by the professional engineer or incorporated engineer for his or her services and any additional services carried out during this stage, is the full apportioned fee for the construction stage, based on the updated cost of the works duplicated or repeated, plus all disbursements and expenses.

3.2.1.3.4 Regulations 3.2.1.3.1, 3.2.1.3.2 and 3.2.1.3.3 shall not be applicable in cases of type designs prepared for re-use by the client at his or her own risk.

### 3.2.2 INTERIM PAYMENTS TO THE PROFESSIONAL ENGINEER OR INCORPORATED ENGINEER

3.2.2.1 For the purposes of calculating the interim payments referred to in regulation 3.2.1.1, the cost of the engineering works, which shall exclude any provisional allowances made to cover contingencies and escalation, shall be determined as follows:

- 3.2.2.1.1 The applicable portion of the net amount of the accepted tender; or
- 3.2.2.1.2 if no tender is accepted, the net amount of the applicable portion of the lowest suitable tender recommended as such by the principal agent of the client in consultation with the professional engineer or incorporated engineer; or
- 3.2.2.1.3 if the contract is awarded by negotiation, the negotiated price; or
- 3.2.2.1.4 if no tenders have been invited or if no suitable tenders have been received or if no negotiation was concluded, the mutually agreed estimate.
- 3.2.2.2 Such interim payments shall rank solely as part of the total fee ultimately payable, which shall be calculated on the final cost of the works in accordance with the provisions of regulation 3.2.3.
- 3.2.3 **COST OF THE ENGINEERING WORKS**
- 3.2.3.1 For the purpose of calculating the total fee referred to in these regulations, the cost of the engineering works, or any part thereof, shall be the cost of the works designed, specified or administered by the professional engineer or incorporated engineer, and shall include -
  - 3.2.3.1.1 the amount certified for payment to contractors in respect of the works, before deduction of liquidated damages or penalties, if any;
  - 3.2.3.1.2 in cases where the client provides labour, tools, construction plant or materials, manufactured goods or machinery for incorporation in the works, a direct and fair valuation based on normal charges by contractors for similar items including depreciation, waste, repairs, overheads and profit;
  - 3.2.3.1.3 an agreed fair valuation of the difference between the cost price of any second-hand materials, manufactured goods or machinery incorporated in the works and the market value of such materials, manufactured goods and machinery as though they were purchased new;
  - 3.2.3.1.4 all temporary works associated with the parts of the project as set out in this regulation;
  - 3.2.3.1.5 all excavations carried out in accordance with the consulting engineer's instructions and for which he is responsible;

- 3.2.3.1.6 all concrete, reinforcing steel, structural steelwork, timber, aluminium and any other structural material shown on the engineer's drawings and for which he is responsible;
- 3.2.3.1.7 formwork for concrete;
- 3.2.3.1.8 brickwork designed and detailed by the professional engineer or incorporated engineer and for which he or she is responsible;
- 3.2.3.1.9 wall foundations designed and detailed by the professional engineer or incorporated engineer;
- 3.2.3.1.10 cladding designed and detailed by the professional engineer or incorporated engineer and for which he or she is responsible;
- 3.2.3.1.11 inserts in or through structural work which the professional engineer or incorporated engineer has to indicate on his or her drawings;
- 3.2.3.1.12 builder's work and decorative treatment to structural members requiring design and drawings by the professional engineer or incorporated engineer;
- 3.2.3.1.13 the cost of any exploratory drilling, test piling, soil resistivity measurement, adits or excavation of shafts for which the professional engineer or incorporated engineer is required to prepare contract documents and which he or she is required to inspect or administer; and
- 3.2.3.1.14 if the engineering works are carried out as a portion of a contract, a fair proportion of the preliminary and general items which shall be calculated as follows:
  - 3.2.3.1.14.1 The cost of the items under the preliminary and general sections of the schedule of quantities which are solely related to the engineering works, in full; and
  - 3.2.3.1.14.2 a portion of the cost of all other items than the items referred to in regulation 3.2.3.1.14.1 and which are set out under the preliminary and general section of such schedules of quantities, in the same ratio which the cost of the engineering works referred to in this regulation bears to the total cost of the project after deducting all such other preliminary and general items.
- 3.2.3.2 The cost of the engineering works shall not include the following:
  - 3.2.3.2.1 Administrative expenses incurred by the client;
  - 3.2.3.2.2 professional fees and disbursements;

- 3.2.3.2.3 cost of surveys;
- 3.2.3.2.4 salaries, travelling and out-of-pocket and office expenses of the site staff;
- 3.2.3.2.5 finance costs and charges incurred by the client; and
- 3.2.3.2.6 cost of land, servitudes and wayleaves.

3.2.3.3 If any contract, notwithstanding the provisions of regulation 3.2.3.1, determines that payments to contractors shall be increased or decreased during the currency of the contract in accordance with any fluctuation in the actual cost of specified items or in prescribed indices, the value of such increases or decreases in cost, as the case may be, shall be brought into account in determining the cost of the works for purposes of calculating the total fee ultimately payable, as follows:

3.2.3.3.1 In respect of that portion of the total fee becoming due during the construction stage in terms of the provisions of regulation 3.2.1.1.4, the total of the increases or decreases in cost actually certified for payment under the contracts; and

3.2.3.3.2 in respect of that portion of the fee becoming due prior to the construction stage in terms of the provisions of regulations 3.2.1.1.1, 3.2.1.1.2 and 3.2.1.1.3 and, where applicable, in respect of any working drawings completed prior to the placing of the works as referred to in regulation 3.2.1.1.4, the total of the increases or decreases in cost actually certified for payment, with a maximum of 10 per cent of the original contract amount, excluding contingencies.

### 3.2.4 DAMAGE TO, OR DESTRUCTION OF, THE WORKS

If, at any time before the completion of the works, any part of the engineering works or the equipment therefor, is damaged or destroyed as a result of war, fire, storms, flood or other causes beyond the control of the professional engineer or incorporated engineer, the client shall pay to the professional engineer or incorporated engineer the appropriate fee for any additional services which may be required by him or her, including design, inspection and administration as a result of such damage or destruction.

3.2.5 POSTPONEMENT, CANCELLATION OR  
ABANDONMENT OF THE WORKS

3.2.5.1 If the works are postponed, cancelled or abandoned in whole or in part after the client has instructed the professional engineer or incorporated engineer to continue with any of the stages referred to in regulations 3.1.1.1, 3.1.1.2, 3.1.1.3 and 3.1.1.4, the fee of the professional engineer or incorporated engineer for services performed in respect of that part of the works performed before such works are postponed, cancelled or abandoned, is as set out in regulation 3.2.1.1.1, plus a surcharge of 10 per cent of such amount, and as set out in any other regulation, if applicable, in proportion to the services performed prior to the works being postponed, cancelled or abandoned.

3.2.5.2 If, within two years from the date of postponement, the postponed works, or any part thereof, are resumed, the fee paid in terms of the provisions of regulation 3.2.5.1 shall be considered to be final payment for the services which have already been performed, and payment for subsequent services shall be separately calculated.

3.2.5.3 If additional services referred to in regulation 3.1.2 are required from the professional engineer or incorporated engineer after resumption of the postponed works, the fee for such additional services is a time charge as provided for in regulation 3.3.4.

3.2.5.4 In the event of the engineering works, or any part thereof, being postponed for a period longer than two years, such works shall be considered as having been abandoned.

3.2.5.5 The cost of the works for the purposes of this regulation shall be the mutually agreed estimate of the cost of the relevant parts of the works completed at the time of its postponement, cancellation or abandonment.

3.2.6 ALTERATIONS OR MODIFICATIONS TO  
DESIGNS

If circumstances arise which could not have been reasonably foreseen by the professional engineer or incorporated engineer, or in the event of the client modifying the design requirements and thus necessitating alterations to completed designs or alterations to designs in progress, and which also require the alteration or remaking of any specification, drawing or other document prepared in whole or in part by the professional engineer or incorporated engineer, such revision,

amendment or reproduction of such designs, drawings or documents to bring the work up to the stage at which it was modified, are, subject to additional payment against a time charge calculated in accordance with the provisions of regulation 3.3.4.

3.2.7 DATA TO BE SUPPLIED TO THE PROFESSIONAL ENGINEER OR INCORPORATED ENGINEER

The client, either directly or through his or her principal agent, shall supply the following free of charge to the professional engineer or incorporated engineer:

3.2.7.1 All such plans and sections of the project and all such site plans of a practical scale giving levels and all such relevant detail drawings as the professional engineer or incorporated engineer may reasonably require;

3.2.7.2 all pertinent data and information together with such assistance as shall reasonably be required to enable the professional engineer or incorporated engineer to perform his or her services;

3.2.7.3 copies of all contract documents, drawings and supporting documents relating to those parts of the project which are relevant to the engineering works, including the general conditions of contract where applicable; and

3.2.7.4 copies of all variation drawings and orders affecting the engineering works.

3.3 TARIFF OF CONSULTING FEES FOR STRUCTURAL AND CIVIL ENGINEERING SERVICES PERTAINING TO BUILDING PROJECTS

3.3.1 SERVICES OF A NORMAL NATURE

3.3.1.1 STRUCTURAL AND CIVIL ENGINEERING SERVICES PERTAINING TO BUILDING PROJECTS

In respect of works making normal demands on the time of the professional engineer or incorporated engineer, the fee is as follows:



Where the cost of the works -		the fee is the sum of the primary fee set out in column 3 and the secondary fee calculated in accordance with column 4	
exceeds -	but does not exceed -	Primary fee	Secondary fee: Calculated on the total cost of the works at the following percentage
Column 1	Column 2	Column 3	Column 4
R	R	R	%
—	335 000	1 000	10,5
335 000	677 000	4 350	9,5
677 000	1 690 000	11 120	8,5
1 690 000	3 380 000	19 570	8,0
3 380 000	6 753 000	36 470	7,5
6 753 000	16 886 000	70 235	7,0
16 886 000	and over	154 665	6,5

### 3.3.1.2 FRAGMENTED WORKS

If the works are undertaken on separate non-contiguous sites, or if the continuity of the works is interrupted, or if the works are unusually fragmented, or are being executed as separately documented phases in accordance with the requirements or with the consent of the client, the fee may be calculated by taking the provisions of regulation 3.3.1.1 as applicable to each site, contract or phase as if they are separate works or, if this is inappropriate, the professional engineer or incorporated engineer and the client shall agree to a fee, which shall lie between the fee derived by taking regulation 3.3.1.1 as applicable to the total cost of the works and the fee derived by taking regulation 3.3.1.1 as applicable to the cost of each as if they were separate works.

### 3.3.1.3 WET SERVICES

The fee for wet services is to be calculated in accordance with the provisions of regulation 3.3.1.1 and such amount shall be increased by 25 per cent.

### 3.3.1.4 ALTERATIONS TO EXISTING WORKS

The fee for alteration to existing works is to be calculated in accordance with the provisions of regulation 3.3.1 and such amount shall be increased by 25 per cent.

### 3.3.2 SERVICES NOT OF A NORMAL NATURE

3.3.2.1 WORKS MAKING UNUSUALLY HIGH DEMANDS

The fee in respect of certain works or parts of works, as set out below, which make unusually high demands on the professional engineer or incorporated engineer, is to be calculated as follows:

3.3.2.1.1 UNUSUALLY TIME-CONSUMING WORKS

3.3.2.1.1.1 In respect of types of works or parts of works, including those referred to in regulation 1.1.3, which make unusually high demands on the professional engineer or incorporated engineer, the professional engineer or incorporated engineer and the client shall agree to an increase of the fee referred to in regulation 3.3.1 which shall be equitable when taking into account the causes and extent of the unusually high demands made on the professional engineer or incorporated engineer.

3.3.2.1.1.2 The professional engineer or incorporated engineer shall, as soon as it becomes evident to him or her, and generally not later than at the completion of the report stage, inform the client if he or she considers the works to be of such a nature as to warrant an increase of the fee referred to in regulation 3.3.2.1.1.2: Provided that if it only becomes evident at a later stage that the works are of a nature making unusually high demands on the professional engineer or incorporated engineer, such professional engineer or incorporated engineer shall inform the client thereof without delay, in which event the portion of the services which has already been completed by the professional engineer or incorporated engineer when he or she so informs the client, shall not be subject to the increased fees, unless he or she and the client agrees otherwise.

3.3.2.2 WORKS MAKING UNUSUALLY LOW DEMANDS

In respect of works or parts of works making unusually low demands on the professional engineer or incorporated engineer, the professional engineer or incorporated engineer and the client shall agree to a fee equitable for such works, taking into account the causes and extent of the unusual reduction in the demands made on the professional engineer or incorporated engineer.

3.3.3 ADDITIONAL SERVICES

3.3.3.1 PROVISION OF SITE STAFF

The professional engineer's or incorporated engineer's charge for the provision of site staff referred to in regulation 3.1.2.1.1, is to be calculated as follows:

- 3.3.3.1.1 Salary of the site staff, inclusive of regular bonus, plus 30 per cent of such amount;
- 3.3.3.1.2 removal costs, on site transport cost and housing allowances, plus 10 per cent of such amount; and
- 3.3.3.1.3 all other direct costs and allowances, as agreed with the client, plus 10 per cent of such amount, or such other direct costs and allowances may, as agreed with the client, be taken as 55 per cent of the salaries of the site staff, inclusive of regular bonus.

#### 3.3.3.2 PRINCIPAL AGENT OF THE CLIENT

The fee for additional services referred to in regulation 3.1.2.2 which the professional engineer or incorporated engineer performs as principal agent of the client, is 1 per cent of the final cost of the project.

#### 3.3.3.3 MEDIATION, ARBITRATION, LITIGATION AND SIMILAR SERVICES

- 3.3.3.3.1 The fee for acting as mediator or arbitrator where there is more than one mediator or arbitrator, or for acting as assessor, is a time charge as provided for in regulation 3.3.4.1, plus 25 per cent of such amount, with a minimum of two hours.
- 3.3.3.3.2 The fee for acting as sole mediator, arbitrator or umpire is a time charge as provided for in regulation 3.3.4.1, plus 75 per cent of such amount, with a minimum of two hours.
- 3.3.3.3.3 Services referred to in regulations 3.3.3.3.1 and 3.3.3.3.2 shall include time spent in attending mediation meetings and the arbitration court, studying evidence and in framing the award.
- 3.3.3.3.4 The fee for services in connection with court proceedings, excluding services referred to in regulations 3.3.3.3.1, 3.3.3.3.2 and 3.3.3.3.3, is a time charge as provided for in regulation 3.3.4, plus 25 per cent of such amount, with a minimum of two hours.

#### 3.3.4 TIME CHARGE

The fee for time charge is calculated at the following rates, per hour or part thereof:

3.3.4.1 Principal, partner or director: For normal services  
— R180,00

3.3.4.2 Member of salaried professional and technical staff: 17 cents per R100 or part thereof of such staff member's total annual remuneration and other employment benefits, which shall include his or her basic annual salary and, if any, any annual bonus, other fringe benefits not included in the basic salary and any contribution in respect of such staff member by his or her employer in terms of the Workmen's Compensation Act, 1941 (Act 30 of 1941), and to any pension fund, providend fund and medical aid fund, and for life insurance: Provided that these rates shall be deemed to include establishment charges and charges in respect of time expended by clerical staff: Provided further that if it should be found that the rate referred to in this sub-regulation will exceed the rate referred to in regulation 3.3.4.1, the parties concerned shall so agree beforehand.

### 3.3.5 TRAVELLING TIME

An amount, at the rate provided for in regulation 3.3.4, may be charged for time spent by the professional engineer or incorporated engineer and members of his or her staff in travelling during normal working hours, with a maximum of eight hours per day: Provided that if the professional engineer's or incorporated engineer's fees are calculated on a percentage of the value of the works, and the journey to and from the engineer's place of practice does not exceed 50 km, the professional engineer or incorporated engineer and members of his or her staff shall not be reimbursed for time spent in travelling, but all travelling further than 50 km shall be subject to a time charge as provided for in regulation 3.3.4.

## 4. MECHANICAL, ELECTRICAL AND ELECTRONIC ENGINEERING SERVICES PERTAINING TO BUILDING PROJECTS.

### 4.1 SERVICES OF THE PROFESSIONAL ENGINEER OR INCORPORATED ENGINEER

#### 4.1.1 NORMAL SERVICES

The following shall be normal services to be performed by the professional engineer or incorporated engineer:

##### 4.1.1.1 REPORT STAGE

The report stage shall include the preparation and submission of a report of preliminary proposals or

feasibility studies and estimates of cost for consideration by the client and shall, where necessary, also include -

- 4.1.1.1.1 consultation with the client or his or her authorised representatives and any other professional advisers appointed by the client in connection with the project;
- 4.1.1.1.2 inspection of the site of the works;
- 4.1.1.1.3 preliminary investigation, route location, planning and design where any of these are required for determination of feasibility;
- 4.1.1.1.4 consultation with local authorities; and
- 4.1.1.1.5 advice to the client as to the need for surveys, analyses, tests and site or other investigations to complete the report, and arranging for these to be carried out at the cost of the client.

#### 4.1.1.2 PRELIMINARY DESIGN STAGE

The preliminary design stage shall comprise of the development of preliminary proposals or the basic planning of the works as may be required by the client and shall, where necessary, also include -

- 4.1.1.2.1 a submission of a basic planning report, if so required by the client;
- 4.1.1.2.2 establishing final design criteria;
- 4.1.1.2.3 advice to the client as to the need for any further surveys, analyses, tests and site or other investigations, and arranging for these to be carried out at the cost of the client;
- 4.1.1.2.4 advice to the client as to the appointment and determination of the services of other consulting engineers, architects and specialist advisers, arranging such appointments and consultation with such advisers in matters affecting the works; and
- 4.1.1.2.5 the preparation and submission of sketch plans or line diagrams and updated estimates.

#### 4.1.1.3 DESIGN AND TENDER STAGE

The design and tender stage shall include the development of the preliminary designs into working drawings, and shall, where necessary, also include -

- 4.1.1.3.1 the preparation of designs, tender drawings, documents and specifications;
- 4.1.1.3.2 the provision of outline information necessary for the design of other services;

4.1.1.3.3 the drafting or adapting invitations to tender, tender conditions, forms of tender and conditions of contract; and

4.1.1.3.4 analysis of tenders and submission of recommendations on the acceptance of tenders and estimates of the cost of the works.

4.1.1.4 CONSTRUCTION STAGE

The construction stage shall include the general administration and other services connected with the carrying out of the works, and shall, where necessary, also include -

4.1.1.4.1 placing orders for the engineering works on behalf of the client;

4.1.1.4.2 advice to the client as to the drafting of the contract documents, or the drafting of the contract documents by the professional engineer or incorporated engineer;

4.1.1.4.3 advice to the client as to the appointment of site staff referred to in regulation 4.1.2.1;

4.1.1.4.4 provision of such further information, drawings and designs as the professional engineer or incorporated engineer may deem necessary to enable the contractors to draft the installation drawings;

4.1.1.4.5 examining contractors' technical proposals and checking the drawings of contractors to ensure that they comply with design and specification requirements, but excluding detailed checking of drawings for co-ordination, erection or installation fit;

4.1.1.4.6 advice to the client on alternative designs and tenders, but excluding detailed inspections, reviewing and checking of alternative designs and drawings not prepared by the professional engineer or incorporated engineer and submitted by any contractor or potential contractor;

4.1.1.4.7 issuing instructions to contractors, co-ordination and general inspection of the execution of the works for compliance with the contract at such intervals as the professional engineer or incorporated engineer may deem necessary and directing site staff, but excluding detailed and daily inspection of the works and site administration referred to in regulation 4.1.2.1;

- 4.1.1.4.8 attendance at site meetings during the construction of the engineering works, at an average of once per fortnight;
- 4.1.1.4.9 periodic valuation of completed work for the purpose of issuing certificates for payment to contractors;
- 4.1.1.4.10 deciding on or assisting the principal agent of the client to decide on disputes or differences that may arise between the client and the contractors, but not by way of mediation, arbitration or litigation;
- 4.1.1.4.11 issuing variation orders, or information for variation orders to be issued;
- 4.1.1.4.12 measurement or assessment of variations and negotiation with contractors on the value thereof;
- 4.1.1.4.13 checking contractors' claims in respect of allowable fluctuations in the cost of the contract;
- 4.1.1.4.14 advice to the client regarding the inspection and testing of such materials and plant as are usually inspected and tested, and arranging for such inspection and testing to be carried out at the cost of the client;
- 4.1.1.4.15 checking contractors' commissioning procedures and witnessing performance or acceptance tests on site, but excluding day-to-day routine tests;
- 4.1.1.4.16 making arrangements, on behalf of the client, for the provision and reproduction of such drawings and documents as may be required by contractors and site staff for the execution of the engineering works;
- 4.1.1.4.17 making arrangements to provide the client, on completion of the engineering works, with such record drawings and manuals as may be required for the operation and maintenance of the engineering works, and preparing such documents as may be necessary to co-ordinate the drawings and manuals provided; and
- 4.1.1.4.18 preparation of the final contract account.

#### 4.1.2 ADDITIONAL SERVICES

Services in connection with the items set out below are additional to the normal services of the professional engineer or incorporated engineer, and the professional engineer or incorporated engineer shall obtain the approval of the client for the execution thereof:

#### 4.1.2.1 PROVISION OF SITE STAFF

4.1.2.1.1 If the client so requires, the professional engineer or incorporated engineer charged with the services referred to in regulation 4.1.1.4 shall appoint such competent site staff as may be necessary for the efficient checking of the setting out of the works, the day-to-day inspection of the construction of the works, the measuring of work on the site and for determining quantities with representatives of the contractors.

4.1.2.1.2 If adequate site staff have not been appointed, the professional engineer or incorporated engineer shall, with approval of the client, provide such additional services as may be necessary for carrying out the functions referred to in regulation 4.1.2.1.1.

#### 4.1.2.2 PRINCIPAL AGENT OF THE CLIENT

If the professional engineer or incorporated engineer is appointed as principal agent of the client, his or her additional services shall include the following:

4.1.2.2.1 Advising the client as to the appointment and determination of services of other professional advisers;

4.1.2.2.2 leadership of the professional team;

4.1.2.2.3 submission of the preliminary and developed proposals in the form of reports, drawings and specifications, together with estimates of costs for the project as a whole;

4.1.2.2.4 responsibility for the overall administration of all sections of the project, including those which fall within the ambit of functions of the other professional advisers in the team;

4.1.2.2.5 responsibility for the overall co-ordination and programming of the design and financial control of the project;

4.1.2.2.6 deciding on differences that may arise between the client and the contractors, but not by way of mediation, arbitration or litigation;

4.1.2.2.7 approval of the certificates for payment to contractors issued by the other professional advisers in the team, prior to the presentation thereof to the client for settlement;

4.1.2.2.8 making arrangements to provide the client, on completion of the project, with such record drawings and manuals as may be required to keep a proper record of the project as constructed, and as may be required for the operation and maintenance of the relevant parts of the project; and



- 4.1.2.2.9 approval of the final contract account for the project as a whole.

4.1.2.3 SCHEDULES OF QUANTITIES

The professional engineer or incorporated engineer shall advise the client on the need for drawing up the engineering works set out in the documents referred to in regulations 4.1.1.3.1 and 4.1.1.3.3 in schedules of quantities, to enable projects to be administered on a measured basis and, if agreed to by the client and carried out by the professional engineer or incorporated engineer, the following shall be deemed to be additional services:

- 4.1.2.3.1 The preparation of elemental and operational schedules of quantities for the engineering works or, if the design of the project is not sufficiently advanced, provisional schedules of quantities: Provided that where provisional quantities are prepared, these shall subsequently be remeasured;

- 4.1.2.3.2 measurement of quantities, preparation and pricing of the final contract account and negotiation for settlement with the contractors;

- 4.1.2.3.3 providing the quantity surveyor with the normal information required for preparing schedules of quantities if the client has appointed a quantity surveyor to perform quantity surveying services in respect of the engineering works.

4.1.2.4 MEDIATION, ARBITRATION, LITIGATION AND SIMILAR SERVICES

If the client instructs the professional engineer or incorporated engineer to -

- 4.1.2.4.1 obtain the necessary statutory approval, licences or permits;

- 4.1.2.4.2 assist with contemplated or actual mediation, arbitration or litigation proceedings; or

- 4.1.2.4.3 attend the proceeding of courts, commissions of inquiry, select committees and similar statutory bodies, or to appear at such proceedings,

the extent of such acts shall be subject to agreement between such client and professional engineer or incorporated engineer.

4.1.2.5 INCIDENTAL ADDITIONAL SERVICES

Incidental additional services shall include -

- 4.1.2.5.1 dealing with authorities other than local authorities;
- 4.1.2.5.2 surveys, investigations and cost analyses of existing structures;
- 4.1.2.5.3 the making of arrangements for wayleaves, servitudes or expropriations;
- 4.1.2.5.4 negotiating and arranging for the provision or diversion of utility services not forming part of the engineering works;
- 4.1.2.5.5 making such amendments as may be required to obtain the formal approval of the authorities concerned, where such amendments are necessary as a result of changes in policy by such authorities, and other causes beyond the control of the professional engineer or incorporated engineer;
- 4.1.2.5.6 the carrying out of special investigations or tests;
- 4.1.2.5.7 the preparation or detailed checking of site co-ordination drawings, installation drawings and shop drawings for co-ordination, erection or installation fit;
- 4.1.2.5.8 detailed inspection, reviewing and checking of designs and drawings not prepared by the professional engineer or incorporated engineer and submitted by any contractor or potential contractor as alternative to those embodied in tender or similar documents prepared by the professional engineer or incorporated engineer;
- 4.1.2.5.9 attendance at site meetings in addition to those referred to in regulation 4.1.1.4.8, unless the professional engineer or incorporated engineer is appointed as the principal agent of the client;
- 4.1.2.5.10 services which give rise to abnormal additional costs for the professional engineer or incorporated engineer, and shall include -
  - 4.1.2.5.10.1 services arising from the failure of any contractor to complete his or her contract;
  - 4.1.2.5.10.2 services performed by the professional engineer or incorporated engineer which is customarily or contractually incumbent upon the contractor to perform, whether by virtue of special contractual provisions relieving the contractor of his or her customary obligations, or in consequence of the contractor's failure to meet his or her contractual obligations; and

- 4.1.2.5.10.3 services performed by the professional engineer or incorporated engineer in determining any remedial measures, making any additional or more extended site visits or resolving any disputes which are the direct and necessary consequence of any failure by the contractor to comply with any specifications, drawings, procedures, construction programmes, time-table or due completion date in terms of the provisions of the contract;
- 4.1.2.5.11 checking, co-ordinating or advising on any part of the project not forming part of the engineering works;
- 4.1.2.5.12 executing or arranging for the periodic monitoring and adjustment of the engineering works in order to optimise or maintain the proper functioning of any process or system;
- 4.1.2.5.13 investigating or reporting on tariffs or charges leviable by the client;
- 4.1.2.5.14 the advance ordering or reservation of materials, the obtaining of licences and permits and the checking of actual labour and plant and material returns for the purpose of establishing or adjusting the contract price;
- 4.1.2.5.15 the inspection and testing (other than on site) of materials and plant, including inspection and work testing during and after manufacture;
- 4.1.2.5.16 negotiating with supply authorities for special tariffs;
- 4.1.2.5.17 the collection, investigation and collation of the data referred to in regulation 4.2.7;
- 4.1.2.5.18 negotiating a contract with a contractor selected otherwise than by competitive tendering, involving checking and agreeing on quantities and costs of materials and labour and the checking and agreeing on added percentages to cover overheads and profits;
- 4.1.2.5.19 additional work as a result of the use of second-hand materials or equipment provided by the client;
- 4.1.2.5.20 carrying out commissioning procedures or performance tests;
- 4.1.2.5.21 preparing manuals and other documents in which the design, operation and maintenance of the engineering works, in addition to those referred to in regulation 4.1.1.4.17, are described;
- 4.1.2.5.22 arranging for checking and recommending maintenance contracts;

- 4.1.2.5.23 additional services -
- 4.1.2.5.23.1 where the site staff referred to in regulation 4.1.2.1.2 has not been appointed;
- 4.1.2.5.23.2 as a result of damage to or destruction of the works as referred to in regulation 4.2.4;
- 4.1.2.5.23.3 as a result of postponement, cancellation or abandoning of the works as referred to in regulation 4.2.5; and
- 4.1.2.5.23.4 as a result of alterations or modifications to design as referred to in regulation 4.2.6; and
- 4.1.2.5.24 any additional services, of whatever nature, other than those referred to in this regulation.

## 4.2 REMUNERATION AND BASIS OF PAYMENT OF THE PROFESSIONAL ENGINEER OR INCORPORATED ENGINEER FOR MECHANICAL, ELECTRICAL AND ELECTRONIC ENGINEERING SERVICES PERTAINING TO BUILDING PROJECTS

### 4.2.1 REMUNERATION

#### 4.2.1.1 FULL NORMAL SERVICES

Subject to the provisions of regulation 4.2.1.1.2, the remuneration of the professional engineer or incorporated engineer for normal services referred to in regulation 4.1.1 is as set out in regulations 4.3.1 and 4.3.2, as the case may be, and shall, unless otherwise agreed upon, be payable to the professional engineer or incorporated engineer as follows:

##### 4.2.1.1.1 REPORT STAGE

The fee for the report stage referred to in regulation 4.1.1.1, is a time charge as provided for in regulation 4.3.4 and shall, unless otherwise agreed upon, be payable to the professional engineer or incorporated engineer on the submission of the preliminary proposals or feasibility studies to the client.

##### 4.2.1.1.2 SUBSEQUENT STAGES

The fees for the preliminary stage, the design and tender stage and the construction stage referred to in regulations 4.1.1.2, 4.1.1.3 and 4.1.1.4 are, subject to the provisions of regulation 4.2.1.1.5, set out in regulation 4.3.1 and shall, unless otherwise agreed upon, be payable to the professional engineer or incorporated engineer as follows:

4.2.1.1.2.1 *Preliminary design stage:*

Twenty per cent of the fee when the services necessary for the preliminary design stage have been completed, subject to the professional engineer or incorporated engineer allowing an appropriate credit for the value of such design work related to the accepted proposals referred to in regulation 4.1.1.1, and which are or can be utilised in the development of the preliminary design.

4.2.1.1.2.2 *Design and tender stage:*

A further 40 per cent of the fee when the services necessary for the design and tender stage have been completed.

4.2.1.1.2.3 *Construction stage:*

4.2.1.1.2.3.1 As the installation work proceeds, a further 35 per cent of the fee in proportion to the cost of the work completed.

4.2.1.1.2.3.2 The remaining 5 per cent of the fee on completion of the final contract account.

4.2.1.1.3 **PARTIAL NORMAL SERVICES**

If the professional engineer or incorporated engineer is appointed to perform services not including all the stages referred to in regulations 4.1.1.1, 4.1.1.2, 4.1.1.3 and 4.1.1.4, the fee is apportioned as follows:

4.2.1.1.3.1 Report stage and preliminary design stage only: 30 per cent of the fee;

4.2.1.1.3.2 report stage, preliminary design stage and the design and tender stage only: 70 per cent of the fee;

4.2.1.1.3.3 construction stage only: 50 per cent of the fee.

4.2.1.2 **ADDITIONAL SERVICES**

The fees or charges for additional services referred to in regulation 4.1.2, are as follows:

4.2.1.2.1 **PROVISION OF SITE STAFF**

The charge for the additional services performed by the professional engineer or incorporated engineer in providing site staff referred to in regulation 4.1.2.1.1, is as set out in regulation 4.3.3.1.

#### 4.2.1.2.2 PRINCIPAL AGENT OF THE CLIENT

The fee for the additional services referred to in regulation 4.1.2.2 which the professional engineer or incorporated engineer performs as principal agent of the client, is as set out in regulation 4.3.3.2 and is apportioned as for normal services as set out in regulation 4.2.1.1.

#### 4.2.1.2.3 SCHEDULES OF QUANTITIES

The fee for the additional services referred to in regulation 4.1.2.3, is to be calculated in accordance with regulation 4.3.3.3 and apportioned as follows:

- 4.2.1.2.3.1 70 per cent of the fee when schedules of quantities have been completed;
- 4.2.1.2.3.2 a further 10 per cent of the fee if the work proceeds in proportion to the cost of the works completed;
- 4.2.1.2.3.3 the remaining 20 per cent of the fee on completion of the final contract account.

#### 4.2.1.2.4 MEDIATION, ARBITRATION, LITIGATION AND SIMILAR SERVICES

The fee for the services referred to in regulation 4.1.2.4, is as set out in regulation 4.3.3.4.

#### 4.2.1.2.5 INCIDENTAL ADDITIONAL SERVICES

The fee for incidental additional services referred to in regulation 4.1.2.5, is a time charge as provided for in regulation 4.3.4.

#### 4.2.1.2.6 SITE STAFF NOT APPOINTED

If adequate or suitable site staff have not been appointed, the fee for the necessary incidental services rendered by the professional engineer or incorporated engineer or his or her staff and for site visits additional to those referred to in regulation 4.1.1.4.8, is a time charge as provided for in regulation 4.3.4, or fees as agreed with the client.

#### 4.2.1.3 FEE FOR RE-USE OF COMPLETED DESIGNS

- 4.2.1.3.1 If the client wishes to erect one or more duplicates of a particular complete structure or works for which the professional engineer or incorporated engineer has

completed investigations, designs, drawings and specification, the fee that the professional engineer or incorporated engineer may charge for the re-use of such documents is 25 per cent of the apportioned fee for normal and additional services carried out in the report, preliminary design and design and tender stages, based on the updated cost of the works duplicated or repeated.

4.2.1.3.2 In addition to the fees referred to in regulation 4.2.1.3.1, the professional engineer or incorporated engineer is to be remunerated for such new work as is necessarily performed by him or her, and he or she shall be paid for all disbursements and expenses.

4.2.1.3.3 Where the professional engineer's or incorporated engineer's services are retained for the construction stage, the fee to be charged by the professional engineer or incorporated engineer for his or her services and any additional services carried out during this stage, is the full apportioned fee for the construction stage, based on the updated cost of the works duplicated or repeated, plus all disbursements and expenses.

4.2.1.3.4 Regulations 4.2.1.3.1, 4.2.1.3.2 and 4.2.1.3.3 shall not be applicable in cases of type designs prepared for re-use by the client at his or her own risk.

#### 4.2.2 INTERIM PAYMENTS TO THE PROFESSIONAL ENGINEER OR INCORPORATED ENGINEER

4.2.2.1 For the purposes of ascertaining the interim payments referred to in regulations 4.2.1.1 and 4.2.1.2.3, the cost of the engineering works, which shall exclude any provisional allowances made to cover contingencies and escalation, shall be determined as follows:

4.2.2.1.1 The net amount of the accepted tender; or

4.2.2.1.2 if no tender is accepted, the net amount of the lowest suitable tender recommended as such by the principal agent of the client in consultation with the professional engineer or incorporated engineer; or

4.2.2.1.3 if the contract is awarded by negotiation, the negotiated price; or

4.2.2.1.4 if no tenders have been invited or if no suitable tenders have been received or if no negotiation was concluded, the mutually agreed estimate.

4.2.2.2 Such interim payments shall rank as part of the total fee ultimately payable, which shall be calculated on the final cost of the works in accordance with the provisions of regulation 4.2.3.

#### 4.2.3 COST OF THE ENGINEERING WORKS

4.2.3.1 For the purpose of calculating the total fee referred to in these regulations, the cost of the engineering works, or any part thereof, shall be the cost of the works designed, specified or administered by the professional engineer or incorporated engineer, and shall include -

4.2.3.1.1 the amount certified for payment to contractors in respect of the works, before deduction of liquidated damages or penalties, if any;

4.2.3.1.2 in cases where the client provides labour, tools, construction plant or materials, manufactured goods or machinery for incorporation in the works, a direct and fair valuation based on normal charges by contractors for similar items including depreciation, waste, repairs, overheads and profit;

4.2.3.1.3 an agreed fair valuation of the difference between the cost price of any second-hand materials, manufactured goods or machinery incorporated in the works and the market value of such materials, manufactured goods and machinery as though they were purchased new;

4.2.3.1.4 one-third, or such other appropriate proportion as may be agreed upon with the client, of the cost of any chimneys and air-conditioning and ventilation ducts and their insulation, specified or designed by the professional engineer or incorporated engineer and forming part of the building structure; and

4.2.3.1.5 the cost of any exploratory drilling, test piling, soil resistivity measurement, adits or excavation of shafts for which the professional engineer or incorporated engineer is required to prepare contract documents and which he or she is required to inspect or administer.

4.2.3.2 If the engineering works are carried out as a portion of a contract, whether by subcontract or otherwise, the cost of the engineering works shall include the following:

4.2.3.2.1 The allowance in the contract to cover attendance and profit relating to the engineering works;

4.2.3.2.2 the cost of items of builders' work required in connection with the engineering works and specified or designed by the professional engineer or incorporated engineer;

4.2.3.2.3 the cost of the items under the preliminary and general sections of the schedules of quantities which are solely related to the engineering works, in full; and



- 4.2.3.2.4 except in the case of nominated subcontractors, a portion of the cost of all other items than the items referred to in regulation 4.2.3.2.3 and which are set out under the preliminary and general section of such schedules of quantities, in the same ratio which the cost of the engineering works referred to in regulations 4.2.3.1, 4.2.3.2.1, 4.2.3.2.2 and 4.2.3.2.3 bears to the total cost of the project after deducting all such other preliminary and general items.
- 4.2.3.3 The cost of the engineering works shall not include the following:
  - 4.2.3.3.1 Administrative expenses incurred by the client;
  - 4.2.3.3.2 professional fees and disbursements;
  - 4.2.3.3.3 cost of surveys;
  - 4.2.3.3.4 salaries, travelling and out-of-pocket and office expenses of the site staff;
  - 4.2.3.3.5 finance costs and charges incurred by the client; and
  - 4.2.3.3.6 cost of land, servitudes and wayleaves; and
  - 4.2.3.3.7 the cost of permanent accommodation for plant or equipment, unless specifically designed and detailed by the professional engineer or incorporated engineer.
- 4.2.3.4 If any contract, notwithstanding the provisions of regulation 4.2.3.1, determines that payments to contractors shall be increased or decreased during the duration of the contract in accordance with any fluctuation in the actual cost of specified items or in prescribed indices, the value of such increases or decreases in cost, as the case may be, shall be brought into account in determining the cost of the works for purposes of calculating the total fee ultimately payable, as follows:
  - 4.2.3.4.1 In respect of that portion of the total fee becoming due during the construction stage in terms of the provisions of regulation 4.2.1.1.4, the total of the increases or decreases in cost actually certified for payment under the contracts; and
  - 4.2.3.4.2 in respect of that portion of the fee becoming due prior to the construction stage in terms of the provisions of regulations 4.2.1.1.1, 4.2.1.1.2 and 4.2.1.1.3 and, where applicable, in respect of any working drawings completed prior to the placing of the works as referred to in regulation 4.2.1.1.4, the total of the increases or decreases in cost actually certified for payment, with a maximum of 10 per cent of the original contract amount, excluding contingencies.

#### 4.2.4 DAMAGE TO, OR DESTRUCTION OF, THE WORKS

If, at any time before the completion of the works, any part of the engineering works or the equipment therefor, is damaged or destroyed as a result of war, fire, storms, flood or other causes beyond the control of the professional engineer or incorporated engineer, the client shall pay to the professional engineer or incorporated engineer the appropriate fee for any additional services which may be required by him or her, including design, inspection and administration as a result of such damage or destruction.

#### 4.2.5 POSTPONEMENT, CANCELLATION OR ABANDONMENT OF THE WORKS

4.2.5.1 If the works are postponed, cancelled or abandoned in whole or in part after the client has instructed the professional engineer or incorporated engineer to continue with any of the stages referred to in regulations 4.1.1.1, 4.1.1.2, 4.1.1.3 and 4.1.1.4, the fee of the professional engineer or incorporated engineer for services performed in respect of that part of the works performed before such works are postponed, cancelled or abandoned, is as set out in regulation 4.2.1.1, plus a surcharge of 10 per cent of such amount, and as set out in any other regulation, if applicable, in proportion to the services performed prior to the works being postponed, cancelled or abandoned.

4.2.5.2 If, within two years from the date of postponement, the postponed works, or any part thereof, are resumed, the fee paid in terms of the provisions of regulation 4.2.5.1 shall be considered to be final payment for the services which have already been performed, and payment for subsequent services shall be separately calculated.

4.2.5.3 If additional services referred to in regulation 4.1.2 are required from the professional engineer or incorporated engineer after resumption of the postponed works, the fee for such additional services is a time charge as provided for in regulation 4.3.4.

4.2.5.4 In the event of the engineering works, or any part thereof, being postponed for a period longer than two years, such works shall be considered as having been abandoned.

4.2.5.5 The cost of the works for the purposes of this regulation shall be the mutually agreed estimate of the cost of the relevant parts of the works completed at the time of its postponement, cancellation or abandonment.

#### 4.2.6 ALTERATIONS OR MODIFICATIONS TO DESIGNS

If circumstances arise which could not have been reasonably foreseen by the professional engineer or incorporated engineer, or in the event of the client modifying the design requirements and thus necessitating alterations to completed designs or alterations to designs in progress, and which also require the alteration or remaking of any specification, drawing or other document prepared in whole or in part by the professional engineer or incorporated engineer, such revision, amendment or reproduction of such designs, drawings or documents to bring the work up to the stage at which it was modified, are, subject to additional payment against a time charge, calculated in accordance with the provisions of regulation 4.3.4.

#### 4.2.7 DATA TO BE SUPPLIED TO THE PROFESSIONAL ENGINEER OR INCORPORATED ENGINEER

The client, either directly or through his or her principal agent, shall supply the following free of charge to the professional engineer or incorporated engineer:

- 4.2.7.1 All such plans and sections of the project and all such site plans of a practical scale giving levels and all such relevant detail drawings as the professional engineer or incorporated engineer may reasonably require;
- 4.2.7.2 all pertinent data and information together with such assistance as shall reasonably be required to enable the professional engineer or incorporated engineer to perform his or her services;
- 4.2.7.3 copies of all contract documents, drawings and supporting documents relating to those parts of the project which are relevant to the engineering works, including the general conditions of contract where applicable; and
- 4.2.7.4 copies of all variation drawings and orders affecting the engineering works.

#### 4.3 TARIFF OF CONSULTING FEES FOR MECHANICAL, ELECTRICAL AND ELECTRONIC ENGINEERING SERVICES PERTAINING TO BUILDING PROJECTS

##### 4.3.1 SERVICES OF A NORMAL NATURE

In respect of works making normal demands on the time of the professional engineer or incorporated

engineer, the fees set out in regulations 4.3.1.1 and 4.3.1.2 are applicable.

#### 4.3.1.1 MECHANICAL AND ELECTRICAL ENGINEERING SERVICES

##### 4.3.1.1.1 MECHANICAL ENGINEERING SERVICES

The basic fee for mechanical engineering services is as follows:

Where the cost of the works -		the fee is the sum of the primary fee set out in column 3 and the secondary fee calculated in accordance with column 4	
exceeds -	but does not exceed -	Primary fee	Secondary fee: Calculated on the total cost of the works at the following percentage
Column 1	Column 2	Column 3	Column 4
R	R	R	%
—	173 000	2 120	10,5
173 000	353 065	3 850	9,5
353 065	892 555	7 380	8,5
892 555	1 793 765	11 845	8,0
1 793 765	4 174 840	20 790	7,5
4 174 840	8 936 815	41 665	7,0
8 936 815	and over	86 350	6,5

##### 4.3.1.1.2 ELECTRICAL ENGINEERING SERVICES

The basic fee for electrical engineering services is as follows:

Where the cost of the works -		the fee is the sum of the primary fee set out in column 3 and the secondary fee calculated in accordance with column 4	
exceeds -	but does not exceed -	Primary fee	Secondary fee: Calculated on the total cost of the works at the following percentage
Column 1	Column 2	Column 3	Column 4
R	R	R	%
—	154 000	800	10,5
154 000	314 000	2 340	9,5
314 000	775 000	5 480	8,5
775 000	1 556 000	9 365	8,0
1 556 000	3 622 000	17 135	7,5
3 622 000	7 780 000	35 245	7,0
7 780 000	and over	74 145	6,5

#### 4.3.1.1.3 ADDITIONAL FEES FOR VARIATIONS

The additional fee for the measurement or assessment of all variations to a lump sum contract is as follows:

- 4.3.1.1.3.1 2,5 per cent of the cost of additional works, excluding prime cost items, but including the cost of items ordered under the provisional sums; and
- 4.3.1.1.3.2 2,5 per cent of the value of omitted works, excluding the value of any contingency sums, prime cost sums or provisional sums: Provided that the additional fees shall not be charged in cases where schedules of quantities are prepared by the professional engineer or incorporated engineer and payment is made in terms of regulation 4.3.3.3.

#### 4.3.1.2 ELECTRONIC ENGINEERING SERVICES

The fee for engineering services in respect of electronic engineering work is as follows:

##### 4.3.1.2.1 BASIC FEES

Where the cost of the works -		the fee is the sum of the primary fee set out in column 3 and the secondary fee calculated in accordance with column 4	
exceeds -	but does not exceed -	Primary fee	Secondary fee: Calculated on the total cost of the works at the following percentage
Column 1	Column 2	Column 3	Column 4
R	R	R	%
—	156 000	1 219	15,75
156 000	319 000	3 559	14,25
319 000	788 000	8 344	12,75
788 000	1 186 000	14 254	12,00
1 186 000	3 681 000	26 112	11,00
3 681 000	7 906 000	53 720	10,25
7 906 000	and over	113 015	9,50

- 4.3.1.2.1.1 Where electronic equipment or systems are wholly proprietary designed or approved by a state authority having control over such designs or products, the basic fee referred to in regulation 4.3.1.2.1.1 is to be reduced by 33,3 per cent.

**4.3.1.2.2 PROGRAMMING**

Where the service of the professional engineer or incorporated engineer includes the provision of a complete computer programme comprising of programme design, coding and documentation in respect of such programme, the fee per programme instruction is to be calculated at two-thirds of the time charge provided for in regulation 4.3.4.

**4.3.1.2.3 OTHER LISTED SERVICES**

The fee for the following listed services is a time charge as provided for in regulation 4.3.4:

4.3.1.2.3.1 Post-commissioning care;

4.3.1.2.3.2 programme design;

4.3.1.2.3.3 programme coding; and

4.3.1.2.3.4 checking of documentation.

**4.3.1.2.4 ADDITIONAL FEES FOR VARIATIONS**

The additional fee for the measurement or assessment of all variations to a lump sum contract is as follows:

4.3.1.2.4.1 2,5 per cent of the cost of additional works, excluding prime cost items, but including the cost of items ordered under the provisional sums; and

4.3.1.2.4.2 2,5 per cent of the value of omitted works, excluding the value of any contingency sums, prime cost sums or provisional sums: Provided that the additional fees shall not be charged in cases where schedules of quantities are prepared by the professional engineer or incorporated engineer and payment is made in terms of regulation 4.3.3.3.

**4.3.1.3 WORKS IN DIFFERENT CATEGORIES, DISSIMILAR WORKS AND FRAGMENTED WORKS**

4.3.1.3.1 Where a single contract includes works which fall under more than one of the main categories of mechanical, electrical or electronic engineering works, the fees are to be separately calculated in accordance with the relevant provisions of regulation 4.3.1 in respect of the total cost of the works in each of such categories.

4.3.1.3.2 If the works comprise substantial portions of dissimilar types of work than the work falling within the main categories referred to in regulation 4.3.1.3.1, the professional engineer or incorporated engineer and the

client shall agree to a fee, which shall lie between the fee derived by taking regulation 4.3.1 as applicable to the total cost of the works falling within the main categories, and the fee derived by taking regulation 4.3.1 as applicable to the cost of each of the dissimilar types of work, as if they were separate works.

- 4.3.1.3.3 If the works are undertaken on separate non-contiguous sites, or if the continuity of the works is interrupted, or if the works are unusually fragmented, or are being executed as separately documented phases in accordance with the requirements or with the consent of the client, the fee may be calculated by taking the provisions of regulation 4.3.1 as applicable to each site, contract or phase as if they are separate works or, if this is inappropriate, the professional engineer or incorporated engineer and the client shall agree to a fee, which shall lie between the fee derived by taking regulation 4.3.1 as applicable to the total cost of the works and the fee derived by taking regulation 4.3.1 as applicable to the cost of each as if they were separate works.

4.3.1.4 WET SERVICES

The fee for wet services is to be separately calculated in accordance with the provisions of regulation 4.3.1.1 and such amount shall be increased by 25 per cent.

4.3.1.5 ALTERATION TO EXISTING WORKS

The fee for alteration to existing works is to be calculated in accordance with the provisions of regulation 4.3.1 and such amount shall be increased by 25 per cent.

4.3.2 SERVICES NOT OF A NORMAL NATURE

4.3.2.1 WORKS MAKING UNUSUALLY HIGH DEMANDS

The fee for engineering services in respect of certain works or parts of works, as set out below, which make unusually high demands on the professional engineer or incorporated engineer, is to be calculated as follows:

- 4.3.2.1.1 In respect of types of works or parts of works, including those referred to in regulation 1.1.3, which make unusually high demands on the professional engineer or incorporated engineer, the professional engineer or incorporated engineer and the client shall agree to an increase of the fee referred to in regulation 4.3.1 which shall be equitable when taking into account the causes and extent of the unusually high demands made on the professional engineer or incorporated engineer.

- 4.3.2.1.2 The professional engineer or incorporated engineer shall, as soon as it becomes evident to him or her and generally not later than at the completion of the report stage, inform the client if he or she considers the works to be of such a nature as to warrant an increase of the fee referred to in regulation 4.3.2.1.1: Provided that if it only becomes evident at a later stage that the works are of a nature making unusually high demands on the professional engineer or incorporated engineer, such professional engineer or incorporated engineer shall inform the client thereof without delay, in which event the portion of the services which has already been completed by the professional engineer or incorporated engineer when he or she so informs the client, shall not be subject to the increased fee, unless he or she and the client agrees otherwise.
- 4.3.2.2 **WORKS MAKING UNUSUALLY LOW DEMANDS**
- 4.3.2.2.1 In respect of works or parts of works making unusually low demands on the professional engineer or incorporated engineer, the professional engineer or incorporated engineer and the client shall agree to a fee equitable for such works, taking into account the causes and extent of the unusual reduction in the demands made on the professional engineer or incorporated engineer.
- 4.3.2.2.2 In respect of electronic engineering services where equipment or systems are wholly proprietary designed or are approved by a government body having control over designs or products of the type in question, the application of such design or product is to be regarded as work making less than normal demands on the professional engineer or incorporated engineer, and the surcharge in respect of the complexity factor built into the fee scale for electronic engineering services will not apply, but the appropriate fee is to be calculated in accordance with the applicable tariff for mechanical and electrical engineering services.
- 4.3.3 **ADDITIONAL SERVICES**
- 4.3.3.1 **PROVISION OF SITE STAFF**
- The professional engineer's or incorporated engineer's charge for the provision of site staff referred to in regulation 4.1.2.1.1, is to be calculated as follows:
- 4.3.3.1.1 Salary of the site staff, inclusive of regular bonus, plus 30 per cent of such amount;



4.3.3.1.2 removal costs, on-site transport cost and housing allowance plus 10 per cent of such amount; and

4.3.3.1.3 all other direct costs and allowances, as agreed with the client, plus 10 per cent of such amount or such other direct costs and allowances may, as agreed with the client be taken as 55 per cent of the salaries of the site staff, inclusive of regular bonus.

#### 4.3.3.2 PRINCIPAL AGENT OF THE CLIENT

The fee for additional services referred to in regulation 4.1.2.2 which the professional engineer or incorporated engineer performs as principal agent of the client, is 1 per cent of the final cost of the project.

#### 4.3.3.3 SCHEDULES OF QUANTITIES

The additional fee, over and above the basic fee referred to in regulations 4.3.1.1.1 and 4.3.1.2.1, for services referred to in regulation 4.1.2.3, is to be calculated in accordance with the provision of regulation 4.3.3.3.1, 4.3.3.3.2 or 4.3.3.3.3, as the case may be.

##### 4.3.3.3.1 MECHANICAL ENGINEERING WORKS

The additional fee for the preparation of elemental and operation schedules of quantities is as follows:

Where the cost of the works in the schedules of quantities -		the fee is the sum of the primary fee set out in column 3 and the secondary fee calcu- lated in accordance with column 4	
exceeds -	but does not exceed -	Primary fee	Secondary fee: Calculated on the total cost of the works at the follow- ing percentage
Column 1	Column 2	Column 3	Column 4
R	R	R	%
—	346 000	—	3,15
346 000	1 729 000	865	2,90
1 729 000	4 582 000	5 188	2,65
4 582 000	9 164 000	12 060	2,50
9 164 000	13 812 000	25 806	2,35
13 812 000	20 681 000	39 619	2,25
20 681 000	and over	70 640	2,10

#### 4.3.3.3.2 ELECTRICAL ENGINEERING WORKS

The additional fee for the preparation of elemental and operation schedules of quantities is as follows:

Where the cost of the works in the schedules of quantities -		the fee is the sum of the primary fee set out in column 3 and the secondary fee calculated in accordance with column 4	
exceeds -	but does not exceed -	Primary fee	Secondary fee: Calculated on the total cost of the works at the following percentage
Column 1	Column 2	Column 3	Column 4
R	R	R	%
—	314 000	—	3,15
314 000	1 556 000	785	2,90
1 556 000	4 133 000	4 675	2,65
4 133 000	8 259 000	10 874	2,50
8 259 000	12 448 000	23 263	2,35
12 448 000	18 641 000	35 711	2,25
18 641 000	and over	63 672	2,10

#### 4.3.3.3.3 The additional fee for the preparation of provisional schedules of quantities is as follows:

4.3.3.3.3.1 For the preparation of provisional schedules of quantities and for preliminary design services to prepare such provisional schedules of quantities, the fee is 1,5 per cent of the tender price;

4.3.3.3.3.2 for subsequent remeasurement of the quantities and the preparation of the elemental and operational schedules of quantities, the further fee is an appropriate credit in the fee referred to in regulations 4.3.3.3.1 or 4.3.3.3.2 for the value of the portions of the provisional schedules referred to in regulation 4.3.3.3.2.1 which is or can be utilised without remeasurement or alteration in the final schedules.

4.3.3.3.4 If a quantity surveyor is appointed by the client to perform quantity surveying services in respect of the engineering works, the fee for providing the quantity surveyor with information in addition to that normally provided, is a time charge as provided for in regulation 4.3.4.

#### 4.3.3.4 MEDIATION, ARBITRATION, LITIGATION AND SIMILAR SERVICES

4.3.3.4.1 The fee for acting as mediator or arbitrator where there is more than one mediator or arbitrator, or for acting as

assessor, is a time charge as provided for in regulation 4.3.4.1, plus 25 per cent of such amount, with a minimum of two hours.

4.3.3.4.2 The fee for acting as sole mediator, arbitrator or umpire, is a time charge as provided for in regulation 4.3.4.1, plus 75 per cent of such amount, with a minimum of two hours.

4.3.3.4.3 Services referred to in regulations 4.3.3.4.1 and 4.3.3.4.2 shall include time spent in attending mediation meetings and the arbitration court, studying evidence and in framing the award.

4.3.3.4.4 The fee for services in connection with court proceedings, excluding services referred to in regulations 4.3.3.4.1, 4.3.3.4.2 and 4.3.3.4.3, is a time charge as provided for in regulation 4.3.4, plus 25 per cent of such amount, with a minimum of two hours.

#### 4.3.4 TIME CHARGE

The fee for time charge is calculated at the following rates, per hour or part thereof:

4.3.4.1 Principal, partner or director: For normal services — R180,00.

4.3.4.2 Member of salaried professional and technical staff: 17 cents per R100 or part thereof of such staff member's total annual remuneration and other employment benefits, which shall include his or her basic annual salary and, if any, any annual bonus, other fringe benefits not included in the basic salary, and any contribution in respect of such staff member by his or her employer in terms of the Workmen's Compensation Act, 1941 (Act 30 of 1941), and to any pension, providend fund and medical aid fund, and for life insurance: Provided that these rates shall be deemed to include establishment charges and charges in respect of time expended by clerical staff: Provided further that if it should be found that the rate referred to in this subregulation will exceed the rate referred to in regulation 4.3.4.1, the parties concerned shall so agree beforehand.

#### 4.3.5 TRAVELLING TIME

An amount, at the rate provided for in regulation 4.3.4, may be charged for time spent by the professional engineer or incorporated engineer and members of his staff in travelling during normal working hours, with a maximum of eight hours per day: Provided that if the

professional engineer's or incorporated engineer's fees are calculated on a percentage of the value of the works, and the journey to and from the professional engineer or incorporated engineer's place of practice does not exceed 50 km, the professional engineer or incorporated engineer and members of his or her staff shall not be reimbursed for time spent in travelling, but all travelling further than 50 km shall be subject to a time charge as provided for in regulation 4.3.4.

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