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BOARD NOTICE

NOTICE 206 OF 2011

Engineering Council of South Africa

**Guideline Scope of Services and Tariff of Fees
for Persons Registered in terms of the
Engineering Profession Act, 2000,
(Act No.46 of 2000)**

This schedule contains sets of tariffs of fees that serve as a guideline for the use by Clients and Professional Service Providers in determining fees to be paid for engineering services that are fair and equitable to all parties.

The Engineering Council of South Africa has, under Section 34(2) of the Engineering Profession Act, 2000 (Act No. 46 of 2000) determined the guideline scope of services and tariff of fees in the Schedule.

Any amount mentioned in or fee calculated in terms of this Schedule is exclusive of Value Added Tax.

The commencement date of these Rules shall be 1 January 2012.

SCHEDULE

Guideline Scope of Services and Tariff of Fees for Registered Professionals

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*Words or expressions in **bold font** are defined in Clause 2.3.*

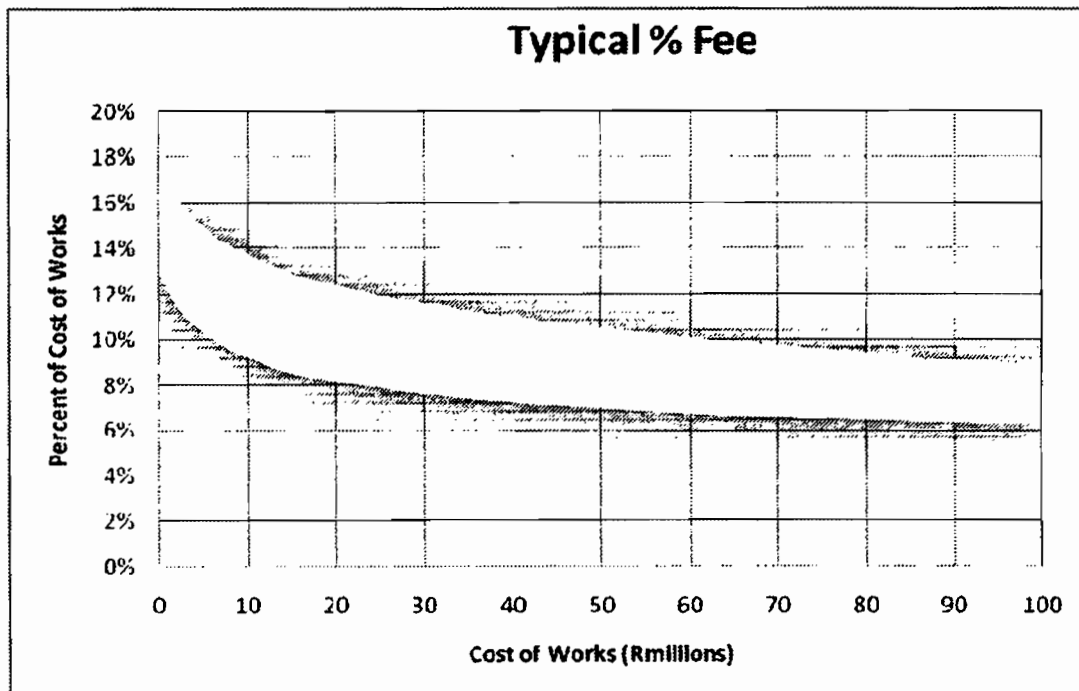
1. PREAMBLE

This schedule shows sets of tariffs of fees that serves as a guideline to determining fees to be paid for engineering services that are fair and equitable to all parties. This schedule allows for four different methods of remuneration namely:

- (i) Percentage fee based on the **cost of works**
- (ii) Fees for services that are additional to those provided for in the normal percentage fee based calculation.
- (iii) Time based fees and
- (iv) Reimbursable expenses.

Where the scope of work is uncertain remuneration will primarily be based on time and reimbursable expenses.

Where the location, size, character, form and function of the works has been defined through previous studies and investigations that have either formed part of the client's normal business practices or have been the subject of previous separate appointments paid for on a time and cost basis the remuneration can be determined using the guideline tariffs that are based on the **cost of the works**. This provides a convenient way to express the fee payable if the scope of work is somewhat uncertain. The typical range of percentage fees applicable to different size projects and services provided are shown in the graph below.



The graph shows that the fee can range from 6% for a large project up to 20% for a small project. The fee can also fall within the shadowed area on either side of the band depending on the complexity factors that are expanded upon in paragraph 4.1. These factors are normally converted into multipliers that range from 0.3 to 1.5 and that are applied to modify the overall percentage fee and agree on a fair and reasonable fee for the service to be provided.

Once the client and consulting engineer have come to a mutually acceptable agreement on the appropriate fee and the scope of services and scope of work is clearly defined then

the client and consulting engineer should agree on commercial terms that set out the timing of deliverables and related payments as well as the method of payment that seeks to balance service provider cash flow and client risk.

2. GENERAL PROVISIONS

2.1 Repeal and Transition

Subject to sub-clause (2), the Guideline Scope of Services and Tariff of Fees for Persons Registered in terms of the Engineering Profession Act, 2000 (Act No. 46 of 2000), published under Government Gazette No. 28744, Board Notice 190 of 23 December 2010, is hereby repealed.

The provisions of Board Notice 192 of 24 December 2010 and 190 of 23 December 2010 and R.1113 of 11 June 1982 including subsequent amendments still apply in respect of **services** rendered during a **stage**, which has not yet been completed by the date of commencement of this Schedule.

2.2 Generality of Terms

In this document, except where the context otherwise requires or indicates:

- (i) the masculine includes the feminine,
- (ii) the singular includes the plural, and
- (iii) any reference to a natural person includes a juristic person

2.3 Definitions

In this Schedule, any word or expression defined in the Act has that meaning, and, unless the context otherwise indicates:

- (i) **"Building and Multi Disciplinary Project"** means a project comprising building work or multi disciplinary work, where the engineer is subject to the authority of another professional acting as the Principal Agent while financial and administrative matters are dealt with by another professional and where the engineer is only paid a fee based on the costs of a portion of the works and has to attend project coordination meetings.
- (ii) **"client"**, means any juristic person or organ of the State engaging a **consulting engineer** for **services** on a **project**;
- (iii) **"construction monitoring"** means the process of administering the construction contract and over-seeing and/or inspecting the works, to the extent of the **consulting engineer's** engagement, for the purpose of verification that the works are being completed in accordance with the requirements of the contract that the designs are being correctly interpreted and that appropriate construction techniques are being utilized. **Construction monitoring**, to whatever extent, shall not diminish the contractor's responsibility for executing and completing the works in accordance with his contract.
- (iv) **"consulting engineer"**, for purposes of these rules only, means any professional registered in terms of **the Act**, or a juristic person who employs such professional, engaged by a **client** on a **project**;
- (v) **"contractor"** means any person or a juristic person under contract to a **client** to perform the **works** or part of it on a **project**, including a subcontractor under contract to such **contractor**;
- (vi) **"cost of the works"** means the total final amount (or a fair estimate thereof), exclusive of value added tax, certified or which would, normally, be certifiable for payment to **contractors** (irrespective of who actually carries out the works) in respect of the **works** designed, specified or administered by the **consulting engineer**, before deduction of liquidated damages or penalties, including –

- Escalation, assuming continuity of the project through to final completion. Where delays occur in the project cycle the client and consultant should come to an agreement on the escalation that will be applicable to various stages of services.
 - a pro-rata portion of all costs related to the Contractor general obligations and overhead (preliminary and general) items applicable to the Works;(irrespective of who actually carries out the works) and
 - the costs of new materials, goods or equipment, or a fair evaluation, of such material, goods or equipment as if new whether supplied new or otherwise by, or to, the client and including the cost or a fair evaluation of the cost of installation (the sourcing, inspection and testing of such will comprise additional services by the consulting engineer);
- (vii) **"Electronic Engineering Services"** means services related to the provision of electronic systems and detailing the terminations, signals and interconnections of electronic components as distinct from conventional electrical HV, MV and LV systems and related reticulation.
- (viii) **"Engineering Project"** means a project of which the scope comprises mainly engineering work.
- (ix) **"Industrial Engineering Services"** means services related to the integration of resources and processes into cohesive strategies, structures and systems for the effective and efficient delivery of quality goods and services.
- (x) **"normal services"** means the **services** set out in clause 3.1;
- (xi) **"Principal Agent"** means the Professional Service Provider appointed as such.
- (xii) **"project"** means any total scheme envisaged by a **client**, including all the **works** and **services** concerned;
- (xiii) **"scope of work"** means the portion of the **works** for which the consulting engineer is engaged.
- (xiv) **"services"** means the services contemplated in clause 3 on a **project** for which a **consulting engineer** is engaged;
- (xv) **"stage"** means a stage of **normal services** set out in clause 3.1;
- (xvi) **"the Act"** means the Engineering Profession Act, 2000 (Act No. 46 of 2000);
- (xvii) **"total annual cost of employment"** means the total annual cost of employment as defined in clause 4.5(4);
- (xviii) **"works"** means the activities on a **project** for which **contractors** are under contract to the **client** to perform or are intended to be performed, including the supply of goods and equipment;

2.4 Short Title

This Schedule is called the Guideline Scope of Services and Tariff of Fees for Registered Persons, 2010.

3. GUIDELINE SCOPE OF SERVICES

The following guideline scope of services are provided to indicate which services would normally be provided and for which the guidelines tariffs would typically represent reasonable compensation. In agreeing the scope of services and the scope of work to be carried out, the client and consulting engineer should review the scope of services and list the applicable normal and additional services and agree the related compensation.

3.1 Planning, Studies, Investigations and Assessments

These typical services relate to carrying out studies and investigations as well as the preparation and submission of reports embodying preliminary proposals or initial feasibility studies and will normally be remunerated on a time and cost basis.

- (1) Consultation with the client or client's authorized representative.
- (2) Inspection of the site of the project.
- (3) Developing a scope of work where required.
- (4) Preliminary investigation, route location, planning and a level of design appropriate to allow decisions on feasibility.
- (5) Consultation with authorities having rights or powers of sanction as well as consultation with the public and stakeholder groups.
- (6) Advice to the client as to regulatory and statutory requirements, including environmental management and the need for surveys, analyses, tests and site or other investigations, as well as approvals, where such are required for the completion of the report, and arranging for these to be carried out at the client's expense.
- (7) Searching for, obtaining, investigating and collating available data, drawings and plans relating to the works.
- (8) Investigating financial and economic implications relating to the proposals or feasibility studies.
- (9) Clause (8) does not normally apply to civil and structural services on **Building Projects**, where these services are provided by a Quantity Surveyor, except as far as the interpretation of cost figures the Engineer's **scope of work** is concerned.

Deliverables will typically include:

- ◆ Collation of information.
- ◆ Reports on technical and financial feasibility and related implications.
- ◆ List of consents and approvals.
- ◆ Schedule of required surveys, tests, analyses, site and other investigations.

3.2 Normal Services

These services listed below are applicable to projects where the nature, form and function of the facility has been defined through previous investigations and reports and the engineering services are required to take the project through to successful completion of construction.

Note, in building or multi-disciplinary projects all calculation of quantities and related cost estimates are the responsibility of the quantity surveyor and are not included as normal services of the Engineer. These services are shown in *italics* in the following lists.

In other projects where quantity surveyors are not involved these services will be the responsibility of the Engineer.

In certain instances on building or multi-disciplinary projects these services are provided with the assistance of the engineers in the respective disciplines and the specific scope should be formulated with care. For example, on building projects the electrical engineer may calculate quantities and related costs and will be compensated for this as an additional service.

In the case where only a single consulting engineer is appointed on a project and the required services extend through to stage 4, 5 and 6, the services of the Principal Agent defined under paragraph 3.3.8 are included as normal services and must be agreed between the parties.

3.2.1 Stage 1 – Inception

(Defined as: Establish client requirements and preferences, assess user needs and options, appointment of necessary consultants, establish the project brief including project objectives, priorities, constraints, assumptions aspirations and strategies)

- (1) Assist in developing a clear project brief.
- (2) Attend project initiation meetings.
- (3) Advise on procurement policy for the project.
- (4) Advise on the rights, constraints, consents and approvals.
- (5) Define the scope of services and scope of work required.
- (6) Conclude the terms of the agreement with the client.
- (7) Inspect the site and advise on the necessary surveys, analyses, tests and site or other investigations where such information will be required for Stage 2 including the availability and location of infrastructure and services.
- (8) Determine the availability of data, drawings and plans relating to the project.
- (9) Advise on criteria that could influence the project life cycle cost significantly.
- (10) Provide necessary information within the agreed scope of the project to other consultants involved.

Deliverables will typically include:

- ♦ Agreed scope of services and scope of work.
- ♦ Signed agreement.
- ♦ Report on project, site and functional requirements.
- ♦ Schedule of required surveys, tests, analyses, site and other investigations.
- ♦ Schedule of consents and approvals.

3.2.2 Stage 2 – Concept and Viability (Often called Preliminary Design)

(Defined as: Prepare and finalise the project concept in accordance with the brief, including project scope, scale, character, form and function, plus preliminary programme and viability of the project)

- (1) Agree documentation programme with principal consultant and other consultants involved.
- (2) Attend design and consultants' meetings.
- (3) Establish the concept design criteria.
- (4) Prepare initial concept design and related documentation.
- (5) Advise the client regarding further surveys, analyses, tests and investigations which may be required.
- (6) Establish regulatory authorities' requirements and incorporate into the design.
- (7) Refine and assess the concept design to ensure conformance with all regulatory requirements and consents.
- (8) Establish access, utilities, services and connections required for the design.
- (9) Coordinate design interfaces with other consultants involved.

- (10) Prepare preliminary process designs, preliminary designs, and related documentation for approval by authorities and client and suitable for costing.
- (11) *Provide cost estimates and comment on life cycle costs as required.*
- (12) Liaise, co-operate and provide necessary information to the client, principal consultant and other consultants involved.

Typical deliverables will include:

- ◆ Concept design.
- ◆ Schedule of required surveys, tests and other investigations and related reports.
- ◆ Process design.
- ◆ Preliminary design.
- ◆ *Cost estimates as required.*

3.2.3 Stage 3 – Design Development (also termed Detail Design)

(Defined as: Develop the approved concept to finalise the design, outline specifications, cost plan, financial viability and programme for the project)

- (1) Review documentation programme with principal consultant and other consultants involved.
- (2) Attend design and consultants' meetings.
- (3) Incorporate client's and authorities' detailed requirements into the design.
- (4) Incorporate other consultant's designs and requirements into the design.
- (5) Prepare design development drawings including draft technical details and specifications.
- (6) *Review and evaluate design and outline specification and exercise cost control.*
- (7) *Prepare detailed estimates of construction cost.*
- (8) Liaise, co-operate and provide necessary information to the principal consultant and other consultants involved.
- (9) Submit the necessary design documentation to local and other authorities for approval.

Typical deliverables will include:

- ◆ Design development drawings.
- ◆ Outline specifications.
- ◆ Local and other authority submission drawings and reports.
- ◆ *Detailed estimates of construction costs.*

3.2.4 Stage 4 – Documentation and Procurement

(Defined as: Prepare procurement and construction documentation, confirm and implement the procurement strategies and procedures for effective and timeous procurement of necessary resources for execution of the project.)

- (1) Attend design and consultants' meetings.
- (2) Prepare specifications and preambles for the works.
- (3) Accommodate services design.

- (4) *Check cost estimates and adjust designs and documents if necessary to remain within budget.*
- (5) *Formulate the procurement strategy for contractors or assist the principal consultant where relevant.*
- (6) *Prepare documentation for contractor procurement.*
- (7) *Review designs, drawings and schedules for compliance with approved budget.*
- (8) *Calling for tenders and/or negotiation of prices and/or assist the principal consultant where relevant.*
- (9) *Liaise, co-operate and provide necessary information to the principal consultant and the other consultants as required.*
- (10) *Evaluation of tenders.*
- (11) *Preparation of contract documentation for signature*
- (12) *Assist in pricing, documentation and tender evaluation as required when the detailed services for these activities are provided by others.*
- (13) *Assess samples and products for compliance and design intent.*

Typical deliverables will include:

- ♦ *Specifications.*
- ♦ *Services co-ordination.*
- ♦ *Working drawings.*
- ♦ *Budget construction cost.*
- ♦ *Tender documentation.*
- ♦ *Tender evaluation report.*
- ♦ *Tender recommendations.*
- ♦ *Priced contract documentation.*

3.2.5 Stage 5 – Contract Administration and Inspection

(Defined as: Manage, administer and monitor the construction contracts and processes including preparation and coordination of procedures and documentation to facilitate practical completion of the Works)

- (1) *Attend site handover.*
- (2) *Issue construction documentation in accordance with the documentation schedule including, in the case of structural engineering, reinforcing bending schedules and and detailing and specifications of structural steel sections and connections.*
- (3) *Carry out contract administration procedures in terms of the contract.*
- (4) *Prepare schedules of predicted cash flow.*
- (5) *Prepare pro-active estimates of proposed variations for client decision making.*
- (6) *Attend regular site, technical and progress meetings.*
- (7) *Inspect works for conformity to contract documentation*
- (8) *Adjudicate and resolve financial claims by contractor(s).*
- (9) *Assist in the resolution of contractual claims by the contractor.*

- (10) *Establish and maintain a financial control system.*
- (11) Clarify details and descriptions during construction as required.
- (12) *Prepare valuations for payment certificates to be issued by the principal agent.*
- (13) Witness and review of all tests and mock ups carried out both on and off site.
- (14) Check and approve contractor drawings for design intent.
- (15) Update and issue drawings register.
- (16) Issue contract instructions as and when required.
- (17) Review and comment on operation and maintenance manuals, guarantee certificates and warranties.
- (18) Inspect the works and issue practical completion and defects lists.
- (19) Arranging for the delivery of all test certificates, statutory (regulatory) and other approvals, as built drawings and operating manuals

Typical deliverables will include:

- ♦ *Schedules of predicted cash flow.*
- ♦ Construction documentation.
- ♦ Drawing register.
- ♦ *Estimates for proposed variations.*
- ♦ Contract instructions.
- ♦ *Financial control reports.*
- ♦ *Valuations for payment certificates.*
- ♦ *Progressive and draft final account(s)*
- ♦ Practical completion and defects list
- ♦ Electrical Certificate of Compliance

Where a quantity surveyor is included in the project team in building works, items 4,5,8,10 and 12 and related deliverables will not be required from the engineer.

3.2.6 Stage 6 – Close-Out

(Defined as: Fulfil and complete the project close-out including necessary documentation to facilitate effective completion, handover and operation of the project)

- (1) Inspect and verify the rectification of defects
- (2) *Receive, comment and approve relevant payment valuations and completion certificates*
- (3) Facilitate and/or procure final operations and maintenance manuals, guarantees and warranties.
- (4) Prepare and/or procure as-built drawings and documentation.
- (5) *Conclude the final accounts where relevant.*

Typical deliverables will include:

- ♦ *Valuations for payment certificates*
- ♦ Works and final completion lists
- ♦ Operations and maintenance manuals, guarantees and warranties

- ♦ As-built drawings and documentation
- ♦ *Final accounts*

3.3 Additional Services

The following services are additional to the normal services provided by the consulting engineer, unless specifically agreed otherwise between the consulting engineer and the client. The agreement on the scope of services and remuneration shall be in writing and should, if at all possible, be concluded before such services are rendered.

3.3.1 Additional Services pertaining to all Stages of the Project

- (1) All services related to defining the scope of work, previously carried out under the report stage and that was normally paid for on a time and cost basis.
- (2) Enquiries not directly concerned with the works and its subsequent utilisation.
- (3) Valuation for purchase, sale or leasing of plant, equipment, material, systems, land or buildings or arranging for such valuation.
- (4) Making arrangements for way leaves, servitudes or expropriations.
- (5) Negotiating and arranging for the provision or diversion of services not forming part of the works.
- (6) Additional work in obtaining the formal approval of the appropriate Government Departments or Public Authorities, including the making of such revisions as may be required as a result of decisions of such Departments or Authorities arising out of changes in policy, undue delay, or other causes beyond the consulting engineer's control.
- (7) Additional work related to monitoring as required by any Government Departments or Authorities in order to facilitate regulatory approvals and certification (e.g. Mines Health and Safety Act 29 of 1996).
- (8) Topographical and environmental surveys, analyses, tests and site or foundation or other investigations, model tests, laboratory tests and analyses carried out on behalf of the client.
- (9) Setting out or staking out the works and indicating any boundary beacons and other reference marks.
- (10) Preparation of drawings for manufacture and installation or detailed checking of such for erection or installation fit.
- (11) Detailed inspection, reviewing and checking of designs and drawings not prepared by the consulting engineer and submitted by any contractor or potential contractor as alternative to those embodied in tender or similar documents prepared by the consulting engineer.
- (12) Travel and travel time costs related to offsite inspection and testing of materials and plant during manufacture and/or prior to delivery to site.
- (13) Preparing and setting out particulars and calculations in a form required by any relevant authority.
- (14) Abnormal additional services by or costs to the consulting engineer due to the failure of a contractor or others to perform their required duties adequately and on time.
- (15) Executing or arranging for the periodic monitoring and adjustment of the works, after final handover and completion of construction and commissioning, in order to optimise or maintain proper functioning of any process or system.
- (16) Investigating or reporting on tariffs or charges leviable by or to the client.
- (17) Advance ordering or reservation of materials and obtaining licenses and permits.
- (18) Preparing detailed operating, operation and maintenance manuals.
- (19) Additional services, duties and/or work resulting from project scope changes, alterations and/or instructions by the client, or his duly authorized agents, requiring the consulting

engineer to advise upon, review, adapt and/or alter his completed designs and/or any other documentation and/or change the scope of his services and/or duties. Such additional services are subject to agreement in writing between the consulting engineer and the client prior to the execution thereof.

- (20) The frequency and extent of site administration and inspections that are required relative to the norm: The frequency and duration of works inspections will depend on many factors, such as the nature, complexity and duration of the project, site location, project programme, contractor competence, important elements of the works being enclosed or covered etc. The norm is that meetings and inspections should occur at an average frequency of once every 2 weeks with more frequent occurrences during critical stages of the Works.
- (21) When the Works Contract is extended beyond the awarded contract period due to poor contractor performance or unforeseen circumstances, attendance at such meetings and related inspections may be considered as additional services.
- (22) Where more frequent inspections are required due to poor contractor performance or other extraneous factors these will normally be considered to be additional services.
- (23) Preparing as-built drawings on designs done by others or related to alterations to existing works.
- (24) Work and or services related to targeted procurement that could entail, but is not necessarily limited to any or all of the following:
 - incorporation of any targeted participation goals,
 - the measuring of key participation indicators,
 - the selection, appointment and administration of participation and;
 - auditing compliance to the above by any contractors and/or professional consultant.
- (25) Exceptional arrangements, communication, facilitation and agreements with any stakeholders other than the client and contractors appointed for the works on which the consulting engineer provides services.
- (26) Any other additional services, of whatever nature, specifically agreed to in writing between the consulting engineer and the client.

3.3.2 Construction Monitoring

- (1) If the construction monitoring, as set out in clause 3.2.5, is deemed to be insufficient by the parties, the **consulting engineer** may, with prior written approval having been obtained from the **client**, appoint or make available additional staff for such construction monitoring on site to the extent specifically defined and agreed with the **client**. The functions in respect of additional construction monitoring are to be limited to detailed inspections and exclude those mentioned under clause 3.2.5. In particular, such monitoring is required where designed elements are normally buried or covered or become inaccessible during the course of the Works.
- (2) Alternatively, the **client** may appoint or make available staff, as intended in clause (1), subject to approval by the **consulting engineer**.
- (3) Staff, as intended in clauses (1) and (2), shall report to and take instructions from the **consulting engineer** or an authorized representative of the **consulting engineer** only and shall be deemed to be in the employ of the **consulting engineer**.
- (4) Should any change regarding the persons utilized for additional on-site monitoring or their remuneration or duration of services be necessary, the utilization of such persons and/or their remuneration must be agreed in writing with the **client** prior to the implementation thereof.
- (5) If, for any reason, no additional staff or inadequate staff for construction monitoring is appointed, the **consulting engineer** shall provide additional services, including additional

site visits, as required and agreed to in writing with the **client** prior to commencement thereof.

- (6) The duties of the **consulting engineer** for the following four defined levels of construction monitoring, respectively, are as follows:

(a) Level 1:

The construction monitoring staff shall:-

- (i) Monitor the outputs from another party's quality assurance programme against the requirements of the plans and specifications.
- (ii) Visit the **works** at a frequency agreed with the **client** to review important materials, critical work procedures and/or completed elements or components.
- (iii) Be available to advise the **contractor** on the technical interpretation of the plans and specifications.

(b) Level 2:

The **construction monitoring** staff shall:-

- (i) Review, preferably at the earliest opportunity, a sample of each important –
Work procedure
Construction material
for compliance with the requirements of the plans and specifications and review representative samples of important completed work prior to enclosure or completion as appropriate.
- (ii) Visit the **works** at a frequency agreed with the **client** to review important materials, critical work procedures and/or completed elements or components.
- (iii) Be available to provide the **contractor** with technical interpretation of the plans and specifications.

(c) Level 3:

The **construction monitoring** staff shall:

- (i) Maintain a part-time presence on site as agreed with the **client** to review random samples and review important completed work prior to enclosure or on completion as appropriate.
- (ii) Where the **consulting engineer** is the sole consultant or **principal agent**, carry out such administration of the **project** as is necessary on behalf of the **client**.
- (iii) Be available to provide the **contractor** with technical interpretation of the plans and specifications.

(d) Level 4:

The **construction monitoring** staff shall:-

- (i) Maintain a full time presence on site to constantly review –
Work procedures
Construction materials
for compliance with the requirements of the plans and specifications and review completed work prior to enclosure or on completion and include in as-built records and drawings as appropriate.
- (ii) Where the **consulting engineer** is the sole consultant or **principal agent**, carry out such administration of the **project** as is necessary on behalf of the **client**.

- (iii) Be available to provide the **contractor** with technical interpretation of the plans and specifications.

3.3.3 Occupational Health and Safety Act, 1993 (Act No.85 of 1993).

Should the client require the consulting engineer to undertake duties falling under the above Occupational Health and Safety Act and the Construction Regulations in terms thereof, on behalf of the client, the additional services may include the following:

- (1) The consulting engineer must arrange, formally and in writing, for the contractor to provide documentary evidence of compliance with all the requirements of the above Occupational Health and Safety Act.
- (2) The consulting engineer must execute the duties of the client, as his appointed agent, as contemplated in the Construction Regulations to the above Occupational Health and Safety Act.

3.3.4 Quality Assurance System

Where the client requires that a quality management system or quality assurance services, over and above construction monitoring services, be applied to the project, these are in addition to normal services provided by the consulting engineer and to be specifically defined and separately agreed in writing prior to commencement thereof.

3.3.5 Lead Consulting Engineer

Should the client require the consulting engineer to assume the leadership of a joint venture, consortium or team of consulting engineers, of the same discipline, prescribed or requested by the client, the additional services may include the following:

- (1) Responsibility for the overall administration of all sections of the services, including those portions of the services, which fall within the ambit of the other consulting engineers.
- (2) Responsibility for the overall co-ordination, programming of design and financial control of all the works included in the services.
- (3) Processing certificates or recommendations for payment of contractors.

3.3.6 Engineering Management Services (Principal Consultant)

Should the client require the consulting engineer to undertake duties of an engineering management nature on behalf of the client, where the project involves (a) multi-disciplinary team(s) the additional services will include the following:

Stage 1 Services

- (1) Facilitate development of a clear project brief.
- (2) Establish the procurement policy for the project.
- (3) Assist the client in the procurement of necessary and appropriate other consultants including the clear definition of their roles and responsibilities.
- (4) Establish in conjunction with the client, other consultants and all relevant authorities, the site characteristics, rights and constraints for the proper design of the intended project.
- (5) Define the consultant's scope of work and services.
- (6) Conclude the terms of the agreement with the client.
- (7) Facilitate a schedule of the required consents and approvals.
- (8) Prepare, co-ordinate and monitor a project initiation programme.
- (9) Facilitate client approval of all Stage 1 documentation.

Typical deliverables

- ♦ Project brief
- ♦ Agreed scope of work
- ♦ Agreed services
- ♦ Project procurement policy
- ♦ Signed agreements
- ♦ Integrated schedule of consents and approvals
- ♦ Project initiation programme
- ♦ Record of all meetings

Stage 2 services

- (1) Assist the client in procurement of the other consultants.
- (2) Advise the client on the requirement to appoint a health and safety consultant.
- (3) Communicate the project brief to the other consultants and monitor the development of the concept and viability.
- (4) Agree format and procedures for cost control and reporting by the other consultants.
- (5) Prepare a documentation programme and indicative construction programme.
- (6) Manage and integrate the concept and viability documentation for presentation to the client for approval.
- (7) Facilitate approval of the concept and viability by the client.
- (8) Facilitate approval of the concept and viability by statutory authorities.

Typical deliverables

- ♦ Signed consultant/client agreements
- ♦ Indicative documentation programme and construction programme

- ◆ Approval by the client to proceed to Stage 3

Stage 3 Services

- (1) Agree and implement communication processes and procedures for the design development of the project.
- (2) Assist the client in the procurement of the necessary other consultants including the clear definition of their roles and responsibilities.
- (3) Prepare, co-ordinate, agree and monitor a detailed design and documentation program.
- (4) Conduct and record consultants' and management meetings.
- (5) Facilitate input required by health and safety consultant.
- (6) Facilitate design reviews for compliance and cost control.
- (7) Facilitate timeous technical co-ordination.
- (8) Facilitate client approval of all Stage 3 documentation.

Typical deliverables

- ◆ Additional signed client/consultant agreements
- ◆ Documentation programme
- ◆ Record of all meetings
- ◆ Approval by the client to proceed to Stage 4

Stage 4 services

- (1) Recommend and agree procurement strategy for contractors, subcontractors and suppliers with the client and the other consultants.
- (2) Prepare and agree the procurement programme.
- (3) Advise the client, in conjunction with the other consultants on the appropriate insurances.
- (4) Co-ordinate and monitor preparation of procurement documentation by consultants in accordance with the project procurement programme.
- (5) Manage procurement process and recommended contractors for approval by the client.
- (6) Agree the format and procedures for monitoring and control by the quantity surveyor of the cost of the works.
- (7) Co-ordinate and assemble the contract documentation for signature.

Typical deliverables

- ◆ Procurement programme
- ◆ Tender/contract conditions
- ◆ Record of all meetings
- ◆ Obtain approval by the client of tender recommendation(s)
- ◆ Contract documentation for signature

Stage 5 services

- (1) Arrange site handover to the contractor.
- (2) Establish construction documentation issue process.
- (3) Agree and monitor issue and distribution of construction documentation.

- (4) Instruct the contractor on behalf of the client to appoint subcontractors.
- (5) Conduct and record regular site meetings.
- (6) Monitor, review and approve the preparation of the construction programme by the contractor.
- (7) Regularly monitor performance of the contractor against the construction programme.
- (8) Adjudicate entitlements that arise from changes required to the construction programme.
- (9) Receive, co-ordinate and monitor approval of all contract documentation provided by contractor(s).
- (10) Agree quality assurance procedures and monitor implementation thereof by the other consultants and the contractors.
- (11) Monitor preparation and auditing of the contractor's health and safety plan and approval thereof by the health and safety consultant.
- (12) Monitor preparation of the environmental management plan by the environmental consultant.
- (13) Establish procedures for monitoring scope and cost variations.
- (14) Monitor, review, approve and issue certificates.
- (15) Receive, review and adjudicate any contractual claims.
- (16) Monitor preparation of financial control reports by the other consultants.
- (17) Prepare and submit progress reports.
- (18) Coordinate, monitor and issue practical completion lists and the certificate of practical completion.
- (19) Facilitate and expedite receipt of the occupation certificate where relevant.

Typical deliverables

- ♦ Signed contracts
- ♦ Approved construction programme
- ♦ Construction documentation
- ♦ Payment certificates
- ♦ Progress reports
- ♦ Record of meetings
- ♦ Certificate(s) of practical completion

Stage 6 services

- (1) Co-ordinate and monitor rectification of defects.
- (2) Manage procurement of operations and maintenance manuals, guarantees and warranties.
- (3) Manage preparation of as-built drawings and documentation.
- (4) Manage procurement of outstanding statutory certificates.
- (5) Monitor, review and issue payment certificates.
- (6) Issue completion certificates.
- (7) Manage agreement of final account(s).
- (8) Prepare and present the project close-out report.

Typical deliverables

- ♦ Completion certificates
- ♦ Record of necessary meetings
- ♦ Project close-out report

3.3.7 Mediation, Arbitration and Litigation proceedings and similar Services

Where the client requires the consulting engineer to, on his behalf, perform the services listed hereunder or similar work, the extent thereof and remuneration therefore is subject to agreement between the client and the consulting engineer:

- (1) Dealing with matters of law, obtaining parliamentary or other statutory approval, licenses or permits.
- (2) Assisting with or participating in contemplated or actual mediation, arbitration or litigation proceedings such as Contractor disputes.
- (3) Officiating at or attending courts and commissions of enquiry, select committees and similar bodies convened by statute, regulation or decree.

3.3.8 Principal Agent of the Client

When a consulting engineer is, in addition to his normal functions as consulting engineer, appointed as the **principal agent** of the client on a building or multi-disciplinary project for the purposes of procurement and construction on a project, the consulting engineer will also be responsible for the following:

Stage 3 services

- (1) Prepare, co-ordinate, agree and monitor a detailed design and documentation programme

Typical deliverables

- ♦ Detailed design and documentation programme

Stage 4 services

- (1) Recommend and agree procurement strategy for contractors, subcontractors and suppliers with the client and the other consultants
- (2) Prepare and agree the procurement programme
- (3) Advise the client, in conjunction with the other consultants on the appropriate insurances
- (4) Manage procurement process and recommended contractors for approval by the client
- (5) Agree the format and procedures for monitoring and control by the quantity surveyor of the cost of the works
- (6) Co-ordinate and assemble the contract documentation for signature

Typical deliverables

- ♦ Procurement programme
- ♦ Tender/contract conditions
- ♦ Contract documentation for signature

Stage 5 services

- (1) Arrange site handover to the contractor
- (2) Establish construction documentation issue process
- (3) Agree and monitor issue and distribution of construction documentation

- (4) Instruct the contractor on behalf of the client to appoint subcontractors
- (5) Conduct and record regular site meetings
- (6) Review, approve and monitor the preparation of the construction programme by the contractor
- (7) Regularly monitor performance of the contractor against the construction programme
- (8) Adjudicate entitlements that arise from charges required to the construction programme
- (9) Receive, co-ordinate and monitor approval of all contract documentation provided by contractor(s)
- (10) Agree quality assurance procedures and monitor implementation thereof by the other consultants and the contractors
- (11) Monitor preparation and auditing of the contractor's health and safety plan and approval thereof by the health and safety consultant
- (12) Monitor preparation of the environmental management plan by the environmental consultant
- (13) Establish procedures for monitoring scope and cost variations
- (14) Monitor, review, approve and issue certificates
- (15) Receive, review and adjudicate any contractual claims
- (16) Monitor preparation of financial control reports by the other consultants
- (17) Prepare and submit progress reports
- (18) Co-ordinate, monitor and issue practical completion lists and the certificate of practical completion

Typical deliverables

- ◆ Signed contracts
- ◆ Approved construction programme
- ◆ Construction documentation
- ◆ Payment certificates
- ◆ Progress reports
- ◆ Record of meetings
- ◆ Certificate(s) of practical completion
- ◆ Facilitate and expedite receipt of occupation certificates

Stage 6 services

- (1) Co-ordinate and monitor rectification of defects
- (2) Manage procurement of operations and maintenance manuals, guarantees and warranties
- (3) Manage preparation of as-built drawings and documentation
- (4) Manage procurement of outstanding statutory certificates
- (5) Monitor, review and issue payment certificates
- (6) Issue completion certificates
- (7) Manage agreement of final account(s)
- (8) Prepare and present the project close-out report

Typical deliverables

- ◆ Completion certificates
- ◆ Record of necessary meetings
- ◆ Project close-out report

4. GUIDELINE TARIFF OF FEES

4.1 Application of Tariff of Fees

- (1) The guideline tariff of fees contained in this Schedule applies in respect of the services set out in clause 0.
- (2) The client should remunerate the consulting engineer, for the services rendered, on the basis of clauses 4.2 to 4.6. In cases where the client and consulting engineer have agreed that clauses 4.2 and 4.3 are not applicable, payment should be on the basis of clause 4.5.
- (3) The client shall reimburse the consulting engineer for all expenses and costs incurred in terms of clause 4.6 in performing his services, irrespective of whether fees are charged in terms of clauses 4.2 and 4.3 or clause 4.5, as well as for all costs incurred on behalf, and with the approval, of the client.
- (4) While the tariff of fees contained in this Schedule can be applied to many projects the factors that influence the fees to be paid for design services on a project are complex and depend on a number of contributing factors. These contributing factors that should be taken into account may include, inter alia, all or any of the following:
 - (a) Project complexity: Projects may range from relatively simple projects where the designs are based on well established, common practices to more complex projects where the works call for the application of new, unusual or untried techniques, designs, systems or applications.
 - (b) Monetary value of the works: This may range from a situation where the value of the work is very high relative to the services being rendered to a project where the value of the works is abnormally low relative to the services required from the consulting engineer.
 - (c) Time duration: This may involve projects where the works are executed over appreciably shorter or longer periods than would normally be expected for any of the stages defined in 3.1.
 - (d) Level of responsibility, liability and risk: These may range from relatively low levels of responsibility and/or risks to projects with unusually high responsibilities and/or risks that are expected to be carried by the consulting engineer.
 - (e) Level of expertise, qualifications, skills and experience: Some works do not require a high degree of expertise while other works may require more specialized expertise or substantial skills and experience that cost more to develop and retain.
 - (f) Level of technology required and changes in technology that may influence the costs of the services provided
 - (g) Whether aspects related to labour intensive works need to be considered in the design.
 - (h) Level of effort: Some projects do not call for substantial effort as the works can be designed without extensive investigations or field measurements while others may call for unusually high effort on the part of the consulting engineer because of, for example, research required or integration with existing works or repairs to existing infrastructure where the status quo needs to be investigated in considerable detail and these need to be accommodated within the design.
 - (i) Potential value added: In some instances the design, no matter how sophisticated will not add much value to the overall project while in other cases greater design optimization can lead to considerable savings in capital, maintenance or operations costs, or add value to the final project. For example, in the case of Industrial Engineers, where a fee based on the value of the Works is not generally appropriate, a fee based on the value added by the service may be more appropriate.

- (j) **Client Requirements:** Some clients have relatively few requirements and/or many standard details and the consulting engineer's designs are accepted at face value. Other clients require considerable details to be investigated during design development to satisfy their own, often complex, internal processes.
 - (k) **Business Strategy:** Some firms may decide to offer a low price to enter a market segment at a low cost or to keep employees busy while waiting for economic upswings.
 - (l) **Project Definition:** In some projects the design concept and scope is self evident or detailed in the Terms of Reference and does not require much further investigation and analysis of options, while in other projects the design development requires extensive analysis and testing of various options.
- (5) Combinations of one or more of the above factors may result in a substantial adjustment of the tariff that is required to fairly compensate the consulting engineer and this adjustment factor should be negotiated in good faith by both parties.
- (6) Agreement on any adjustment of or special fees should be reached at the time of the engagement of the consulting engineer or as soon after circumstances warrant such as practically possible, but in all cases prior to the consulting engineer rendering services which may be affected.
- (7) Where the normal services relate to more than one of the disciplines of consulting engineering contemplated in clauses 4.2.1 to 4.2.8, namely civil, structural, mechanical, electrical or electronic engineering services, a separate fee for services in each discipline should be calculated in accordance with the relevant clause.
- (8) Where at the instance and with the consent of the client the works are undertaken on separate non-contiguous sites, continuity is interrupted or are unusually fragmented or are constructed as separately documented phases or sections, the fee for **normal services** is:
 - (a) the sum of the fees calculated separately for each site, contract, phase or section as if they were separate works; or
 - (b) a fee agreed to between the client and the consulting engineer and which fee lies between the fee calculated on the total cost of the works and the sum of the fees contemplated in clause (a) above.
- (9) For the calculation of fees, "Duplication of works" is defined as the re-use of designs, drawings and details done by a consultant to duplicate a complete unit (e.g. a building or bridge).
- (10) The fee for services provided in the report stage is calculated on a time basis.
- (11) The following fees may be claimed after each stage of services or monthly or as agreed between the consulting engineer and the client:
 - (a) Percentage fees determined on the basis of the **cost of the works** prevailing at the time of the fee calculation and pro-rata to the completed **services**, or a portion of the total fee based on completion of the stages along the lines indicated in 4.2.9.
 - (b) Time based fees applicable when the services were rendered.
- (12) Disbursements as set out in clause (3) may be claimed monthly.
- (13) Clients should note that if the fee finally agreed is substantially less than the guidelines provided, inadequate attention may be given to design with a resulting increase in project risk.

4.2 Fees for Normal Services

In the following tables the fee guidelines consist of the sum of a primary and secondary fee depending on the Cost of the Works. Alternatively, if the scope of services and scope of work are relatively well defined and a reasonable budget of the Cost of Works is available, then the client and consultant can agree a single percentage fee based on this budgeted cost and the overall fee calculated using the tables below as well as any relevant complexity factors.

For example, if a civil engineering project involves alterations to a structure with complex structural engineering and a reasonable expectation of the Cost of the Works is R31million then the fee calculated using the tables would be:

Fee from 4.2.1: = R1 251 500 + 8% * R18 150 000 = R2 703 500 for normal civil works

Plus R 551 900 + 3% * R 18 150 000 = R1 096 400 additional for structures

Therefore total = R 3 799 900

Multiplied by a complexity factor for additions to existing buildings of 1.25 = R4 749 875 which is equal to a percentage fee of: R4 749 875/ R31 000 000 = **15.32%**

Alternatively, consider the example of a relatively simple rural road project with a reasonable budget value of R21 000 000. Then the fee calculated using the tables would be:

Fee from 4.2.1: = R 1 251 500 + 8% * R 8 150 000 = R1 903 500

Multiplied by a complexity factor of 0.85 for rural roads = R1 617 975 which is equal to a percentage fee of: R1 617 975/ R21 000 000 = **7.70%**

Fee negotiations would typically commence using these starting values and judgement regarding project complexity to arrive at a finally agreed percentage fee. The fee amount to be paid will generally be based upon the final cost of the works or any other suitably agreed arrangement.

4.2.1 Civil and Structural Engineering Services pertaining to Engineering Projects

- (1) The basic fee for normal services in the disciplines of civil and structural engineering, pertaining to **Engineering Projects**, is determined from the table below. The fee is the sum of the primary fee and the secondary fee applicable to the specific cost of the works in respect of which the services were rendered on the project excluding the report stage described in clause 3.2.1 which is normally reimbursed on a time basis in terms of clause 4.5.

Cost of the Works		Basis of Fee Calculation	
For projects up to R 512 000		A Lump Sum or on a Time Basis	
Where the cost of the works:		Primary Fee	Secondary fee
Exceeds	But does not exceed		
R 512 000	R 1 280 000	R 64 000	12,5% on the balance over R 512 000
R 1 280 000	R 6 300 000	R 160 000	10,0% on the balance over R 1 280 000
R 6 300 000	R 12 850 000	R 662 000	9,0% on the balance over R 6 300 000
R 12 850 000	R 32 000 000	R 1 251 500	8,0% on the balance over R 12 850 000
R 32 000 000	R 64 000 000	R 2 783 500	6,0% on the balance over R 32 000 000
R 64 000 000	R 385 500 000	R 4 703 500	5,5% on the balance over R 64 000 000
R 385 500 000		R 22 386 000	5,0% on the balance over R385 500 000

- (2) The following additional fee is typically applicable to the value of the reinforced concrete and structural steel portions of the works, inclusive of the costs of concrete, reinforcing, formwork, structural steel work and any pro-rata preliminary and general amounts. Where structures of identical design are repeated on the same project, the combined costs is normally cumulated for the determination of the cost of the reinforced concrete and structural steel works. In cases where structures require individual design, a separate additional fee is normally calculated for each structure based on the cost of the reinforced concrete and/or structural steel work for that particular structure. The additional fee is the sum of the primary fee and the secondary fee applicable to the specific cost of the works in respect of which the services were rendered on the project as shown below.

Cost of the Works		Basis of Fee Calculation	
For projects up to R 512 000		A Lump Sum or on a Time Basis	
Where the cost of the works:		Primary Fee	Secondary fee
Exceeds	But does not exceed		
R 512 000	R 1 280 000	R 25 600	5,0% on the balance over R 512 000
R 1 280 000	R 6 300 000	R 64 000	4,5% on the balance over R 1 280 000
R 6 300 000	R 12 850 000	R 289 900	4,0% on the balance over R 6 300 000
R 12 850 000	R 32 000 000	R 551 900	3,0% on the balance over R 12 850 000
R 32 000 000	R 64 000 000	R 1 126 400	2,0% on the balance over R 32 000 000
R 64 000 000	R 385 500 000	R 1 766 400	1,5% on the balance over R 64 000 000
R 385 500 000		R 6 588 900	1,5% on the balance over R385 500 000

- (3) To calculate the fee for railway track work in terms of this item, 50 per cent of the cost of the permanent way materials is normally excluded from the cost of the works **in view of the limited design input normally required for these elements**, but the full cost of ballast and equipment specially designed by the consultant is normally included in the cost of the works.
- (4) For normal services relating to a description of the works mentioned in the first column of the following table, the proportion of the basic fee relating to the specific item calculated in terms of clause (1) and (2) is normally multiplied by the category factors mentioned against that description in the second column of the table. In cases more than one of the descriptions below applies, the effective factor will typically be the product of the factors involved.
- (5) These factors do not apply when fees are a lump sum or on a time basis.
- (6) In the case of road works, where the road traverses both rural and urban areas, an adjustment pro-rata to the length of road in rural and urban area is normally made.
- (7) In the case of road rehabilitation a combination of factors applies depending on the situation of the road (rural or urban) and the category factor for alterations to existing works.

Description of the Works	Typical factor by which basic fee is multiplied
Rural roads (single carriageways), excluding bridges	0,85
Rural freeways and dual carriageways, excluding bridges	0,95
Freeways and dual carriageways through existing peri-urban areas, excluding bridges	1,00
Single Carriageways through existing urban areas	1,00
Freeways and dual carriageways through existing urban areas	1,25
Gravel roads: Primary roads Secondary roads Informal roads	1,25 to 1,50 1,00 to 1,25 0,75 to 1,00
Water and waste water treatment works	1,25
Services (Excluding roads) for existing informal settlements including roads and to reduced standards or supplies	1,25 to 1,50
Water and sanitation in rural areas	1,35
Alterations to existing works and labour based works or contractor development. (Only applicable to the fees on the portion or section of works affected)	1,25
Mass concrete foundations, brickwork and cladding designed and detailed by the consulting engineer (Only applicable to the design portion of the fees on such works)	0,33
Duplication of works (Only applicable to the design portion of the fees on duplicated works)	0,25

4.2.2 Civil Engineering Services pertaining to Building and Multi-Disciplinary Projects

- (1) The basic fee for normal services in the discipline of civil engineering, pertaining to **Building and Multi Disciplinary Projects**, is determined from the table below. The fee is the sum of the primary fee and the secondary fee applicable to the specific cost of the works in respect of which the services were rendered on the project excluding the report stage described in clause 3.2.1 which is normally reimbursed on a time basis in terms of clause 4.5.

Cost of the Works		Basis of Fee Calculation	
For projects up to R 512 000		A Lump Sum or on a Time Basis	
Where the cost of the works:		Primary Fee	Secondary fee
Exceeds	But does not exceed		
R 512 000	R 1 280 000	R 64 000	12,5% on the balance over R 512 000
R 1 280 000	R 6 300 000	R 160 000	10,0% on the balance over R 1 280 000
R 6 300 000	R 12 850 000	R 662 000	9,0% on the balance over R 6 300 000
R 12 850 000	R 32 000 000	R 1 251 500	8,0% on the balance over R 12 850 000
R 32 000 000	R 64 000 000	R 2 783 500	7,0% on the balance over R 32 000 000
R 64 000 000	R 385 500 000	R 5 023 500	7,0% on the balance over R 64 000 000
R 385 500 000		R 27 528 500	7,0% on the balance over R385 500 000

- (2) For normal services relating to a description of the **works** mentioned in the first column of the following table, the proportion of the basic fee relating to the specific item calculated in terms of clause (1) is normally multiplied by the category factor mentioned against that description in the second column of the table. In case more than one of the descriptions below applies, the effective factor will typically be the product of the factors involved.

These factors do not apply when fees are a lump sum or on a time basis.

Description of the Works	Typical factor by which basic fee is multiplied
Alterations to existing works and labour based works or contractor development (Only applicable to the fees on the portion or section of works affected)	1,25
Internal water and drainage for buildings upon specific agreement with the client to render such services	1,25
Duplication of works (Only applicable to the design portion of the fees on duplicated works)	0,25

4.2.3 Structural Engineering Services pertaining to Building Projects

- (1) The basic fee for normal services in the discipline of structural engineering, pertaining to **Building Projects**, is determined from the table below. The fee is the sum of the primary fee and the secondary fee applicable to the specific cost of the works in respect of which the services were rendered on the project excluding the report stage described in clause 3.2.1 which shall be reimbursed on a time basis in terms of clause 4.5.

Cost of the Works		Basis of Fee Calculation	
For projects up to R 512 000		A Lump Sum or on a Time Basis	
Where the cost of the works:		Primary Fee	Secondary fee
Exceeds	But does not exceed		
R 512 000	R 1 280 000	R 64 000	12,5% on the balance over R 512 000
R 1 280 000	R 6 300 000	R 160 000	10,0% on the balance over R 1 280 000
R 6 300 000	R 12 850 000	R 662 000	9,0% on the balance over R 6 300 000
R 12 850 000	R 32 000 000	R 1 251 500	8,0% on the balance over R 12 850 000
R 32 000 000	R 64 000 000	R 2 783 500	7,0% on the balance over R 32 000 000
R 64 000 000	R 385 500 000	R 5 023 500	7,0% on the balance over R 64 000 000
R 385 500 000		R 27 528 500	7,0% on the balance over R385 500 000

- (2) For normal services relating to a description of the works mentioned in the first column of the following table, the proportion of the basic fee relating to the specific item calculated in terms of clause (1) is normally multiplied by the category factor mentioned against that description in the second column of the table. In case more than one of the descriptions below applies, the effective factor will typically be the product of the factors involved.

These factors do not apply when fees are a lump sum or on a time basis.

Description of the Works	Typical factor by which basic fee is multiplied
Alterations to existing works or unusual and complicated building structures or contractor development (Only applicable to the fees on the portion or section of works affected)	1,25
Mass concrete foundations and brickwork designed and cladding designed and detailed by the consulting engineer (Only applicable to the design portion of the fees on such works)	0,33
Duplication of works (Only applicable to the design portion of the fees on duplicated works)	0,25

4.2.4 Mechanical Engineering Services pertaining to Engineering Projects

- (1) The basic fee for normal services in the discipline of mechanical engineering, pertaining to **Engineering Projects**, is determined from the table below. The fee is the sum of the primary fee and the secondary fee applicable to the specific cost of the works in respect of which the services were rendered on the project excluding the report stage described in clause 3.2.1 which shall be reimbursed on a time basis in terms of clause 4.5.

Cost of the Works		Basis of Fee Calculation	
For projects up to R 512 000		A Lump Sum or on a Time Basis	
Where the cost of the works:		Primary Fee	Secondary fee
Exceeds	But does not exceed		
R 512 000	R 1 280 000	R 64 000	12,5% on the balance over R 512 000
R 1 280 000	R 6 300 000	R 160 000	10,0% on the balance over R 1 280 000
R 6 300 000	R 12 850 000	R 662 000	8,0% on the balance over R 6 300 000
R 12 850 000	R 32 000 000	R 1 186 000	7,0% on the balance over R 12 850 000
R 32 000 000	R 64 000 000	R 2 526 500	6,0% on the balance over R 32 000 000
R 64 000 000	R 385 500 000	R 4 446 500	5,5% on the balance over R 64 000 000
R 385 500 000	R 385 500 000	R 22 129 000	5,5% on the balance over R385 500 000

- (2) For normal services relating to a description of the works mentioned in the first column of the following table, the proportion of the basic fee relating to the specific item calculated in terms of clause (1) is normally multiplied by the category factor mentioned against that description in the second column of the table. In case more than one of the descriptions below applies, the effective factor will typically be the product of the factors involved.

These factors do not apply when fees are a lump sum or on a time basis.

Description of the Works	Typical factor by which basic fee is multiplied
Alterations to existing works or contractor development (Only applicable to the fees on the portion or section of works affected.)	1,25
Wet services, for domestic hot and cold water and drainage pipe work inside buildings.	1,25
Duplication of works (Only applicable to the design portion of the fees on duplicated works)	0,25

4.2.5 Electrical Engineering Services pertaining to Engineering Projects

- (1) The basic fee for normal services in the discipline of electrical engineering, pertaining to **Engineering Projects**, is determined from the table below. The fee is the sum of the primary fee and the secondary fee applicable to the specific cost of the works in respect of which the services were rendered on the project excluding the report stage described in clause 3.2.1 which shall be reimbursed on a time basis in terms of clause 4.5.

Cost of the Works		Basis of Fee Calculation	
For projects up to R 512 000		A Lump Sum or on a Time Basis	
Where the cost of the works:		Primary Fee	Secondary fee
Exceeds	But does not exceed		
R 512 000	R 1 280 000	R 64 000	12,5% on the balance over R 512 000
R 1 280 000	R 6 300 000	R 160 000	10,0% on the balance over R 1 280 000
R 6 300 000	R 12 850 000	R 662 000	8,0% on the balance over R 6 300 000
R 12 850 000	R 32 000 000	R 1 186 000	7,0% on the balance over R 12 850 000
R 32 000 000	R 64 000 000	R 2 526 500	6,0% on the balance over R 32 000 000
R 64 000 000	R 385 500 000	R 4 446 000	5,5% on the balance over R 64 000 000
R 385 500 000		R 22 129 000	5,5% on the balance over R385 500 000

- (2) For normal services relating to a description of the works mentioned in the first column of the following table, the proportion of the basic fee relating to the specific item calculated in terms of clause (1) is normally multiplied by the category factor mentioned against that description in the second column of the table. In case more than one of the descriptions below applies, the effective factor will typically be the product of the factors involved.

These factors do not apply when fees are a lump sum or on a time basis.

Description of the Works	Typical factor by which basic fee is multiplied
Alterations to existing works or contractor development (Only applicable to the fees on the portion or section of works affected.)	1,25
Duplication of works (Only applicable to the design portion of the fees on duplicated works)	0,25

4.2.6 Mechanical Engineering pertaining to Building Projects

- (1) The basic fee for normal services in the discipline of mechanical engineering or wet services, pertaining to **Building Projects**, is determined from the table below. The fee is the sum of the primary fee and the secondary fee applicable to the specific cost of the works in respect of which the services were rendered on the project excluding the report stage described in clause 3.2.1 which shall be reimbursed on a time basis in terms of clause 4.5.

Cost of the Works		Basis of Fee Calculation	
For projects up to R 512 000		A Lump Sum or on a Time Basis	
Where the cost of the works:		Primary Fee	Secondary fee
Exceeds	But does not exceed		
R 512 000	R 1 280 000	R 76 800	15,0% on the balance over R 512 000
R 1 280 000	R 6 300 000	R 192 000	12,5% on the balance over R 1 280 000
R 6 300 000	R 12 850 000	R 819 500	10,5% on the balance over R 6 300 000
R 12 850 000	R 32 000 000	R 1 507 250	9,5% on the balance over R 12 850 000
R 32 000 000	R 64 000 000	R 3 326 500	9,0% on the balance over R 32 000 000
R 64 000 000	R 385 500 000	R 6 206 000	8,5% on the balance over R 64 000 000
R 385 500 000		R 33 534 000	8,5% on the balance over R385 500 000

- (2) For normal services relating to a description of the works mentioned in the first column of the following table, the proportion of the basic fee relating to the specific item calculated in terms of clause (1) is normally multiplied by the category factor mentioned against that description in the second column of the table. In case more than one of the descriptions below applies, the effective factor will typically be the product of the factors involved.

These factors do not apply when fees are a lump sum or on a time basis.

Description of the Works	Typical factor by which basic fee is multiplied
Multi-tenant installations	1,25
Alterations to existing works or contractor development (Only applicable to the fees on the portion or section of works affected)	1,25
Wet services, for domestic hot and cold water and drainage pipe work inside buildings.	1,25
Duplication of works (Only applicable to the design portion of the fees on duplicated works)	0,25
For projects where the cost of the works exceeds R 300,000 and where bills of quantities are not required from the consulting engineer and all financial, tender and contractual matters are dealt with by the Quantity Surveyor or other parties.	0,75
As above, but bills of quantities for are not required from the consulting engineer and all financial, tender and contractual matters are dealt with by the consulting engineer (e.g. lump sum, nominated or selected sub-contracts, etc.)	0,90

4.2.7 Electrical Engineering services pertaining to Building Projects

- (1) The basic fee for normal services in the discipline of electrical engineering, pertaining to **Building Projects**, is determined from the table below. The fee is the sum of the primary fee and the secondary fee applicable to the specific cost of the works in respect of which the services were rendered on the project excluding the report stage described in clause 3.2.1 which shall be reimbursed on a time basis in terms of clause 4.5.

Cost of the Works		Basis of Fee Calculation	
For projects up to R 512 000		A Lump Sum or on a Time Basis	
Where the cost of the works:		Primary Fee	Secondary fee
Exceeds	But does not exceed		
R 512 000	R 1 280 000	R 76 800	15,0% on the balance over R 512 000
R 1 280 000	R 6 300 000	R 192 000	12,5% on the balance over R 1 280 000
R 6 300 000	R 12 850 000	R 819 500	10,5% on the balance over R 6 300 000
R 12 850 000	R 32 000 000	R 1 507 250	9,5% on the balance over R 12 850 000
R 32 000 000	R 64 000 000	R 3 326 500	9,0% on the balance over R 32 000 000
R 64 000 000	R 385 500 000	R 6 206 500	8,5% on the balance over R 64 000 000
R 385 500 000		R 33 534 000	8,5% on the balance over R385 500 000

- (2) For normal services relating to a description of the works mentioned in the first column of the following table, the proportion of the basic fee relating to the specific item calculated in terms of clause (1) is normally multiplied by the category factor mentioned against that description in the second column of the table. In case more than one of the descriptions below applies, the effective factor will typically be the product of the factors involved.

These factors do not apply when fees are a lump sum or on a time basis.

Description of the Works	Typical factor by which basic fee is multiplied
Multi-tenant installations	1,25
Alterations to existing works or contractor development (Only applicable to the fees on the portion or section of works affected)	1,25
Duplication of works (Only applicable to the design portion of the fees on duplicated works)	0,25
For projects where the cost of the works exceeds R 300,000 and where bills of quantities are not required from the consulting engineer and all financial, tender and contractual matters are dealt with by the Quantity Surveyor or other parties.	0,75
As above, but bills of quantities are not required from the consulting engineer and all financial, tender and contractual matters are dealt with by the consulting engineer (e.g. lump sum, nominated or selected sub-contracts, etc.)	0,90

4.2.8 Electronic Engineering Services

- (1) The basic fee for normal services in the discipline of electronic engineering, including work pertaining to **Building Projects**, is determined from the table below. The fee is the sum of the primary fee and the secondary fee applicable to the specific cost of the works in respect of which the services were rendered on the project excluding the report stage described in clause 3.2.1 which shall be reimbursed on a time basis in terms of clause 4.5.

Cost of the Works		Basis of Fee Calculation	
For projects up to R 512 000		A Lump Sum or on a Time Basis	
Where the cost of the works:		Primary Fee	Secondary fee
Exceeds	But does not exceed		
R 512 000	R 1 280 000	R 87 040	17,0% on the balance over R 512 000
R 1 280 000	R 6 300 000	R 217 600	13,5% on the balance over R 1 280 000
R 6 300 000	R 12 850 000	R 895 300	11,5% on the balance over R 6 300 000
R 12 850 000	R 32 000 000	R 1 648 550	10,0% on the balance over R 12 850 000
R 32 000 000	R 64 000 000	R 3 563 550	9,5% on the balance over R 32 000 000
R 64 000 000	R 385 500 000	R 6 603 550	8,5% on the balance over R 64 000 000
R 385 500 000	R 0	R 33 931 050	8,5% on the balance over R385 500 000

- (2) For normal services relating to a description of the works mentioned in the first column of the following table the proportion of the basic fee relating to the specific item calculated in terms of clause (1) is normally multiplied by the category factor mentioned against that description in the second column of the table. In case more than one of the descriptions below applies, the effective factor will typically be the product of the factors involved.

These factors do not apply when fees are a lump sum or on a time basis.

Description of the Works	Typical factor by which basic fee is multiplied
Alterations to existing works or contractor development (Only applicable to the fees on the portion or section of works affected)	1,25
Where equipment or systems are wholly of proprietary design or approved by a State authority (Only applicable to the design portion of the fees)	0,67
Duplication of works (Only applicable to the design portion of the fees on duplicated works)	0,25
For projects where the cost of the works exceeds R 440,000 and where bills of quantities are not required from the consulting engineer and all financial, tender and contractual matters are dealt with by the Quantity Surveyor or other parties.	0,75
As above, but bills of quantities for electronic works are not required from the consulting engineer and all financial, tender and contractual matters are dealt with by the consulting engineer (e.g. lump sum, nominated or selected sub-contract, etc.)	0,90

4.2.9 Services provided partially or in Stages

- (1) The following table shows typical percentages that are typically used for proportioning the basic fee for normal services over the various stages of the services. The actual percentage used should be adjusted for individual projects through negotiation and depending on the work involved in each stage, the value that can be added in each stage and any commercial considerations that may be applicable:

Stage of Services	Typical percentage points for each stage
Civil: Engineering Projects:	
Inception	5
Concept and Viability	25
Design Development	25
Documentation and Procurement	15
Contract Administration and Inspection	25
Close-Out	5
Structural: Engineering Projects:	
Inception	5
Concept and Viability	25
Design Development	30
Documentation and Procurement	10
Contract Administration and Inspection	25
Close-Out	5
Civil: Building Projects:	
Inception	5
Concept and Viability	25
Design Development	25
Documentation and Procurement	15
Contract Administration and Inspection	25
Close-Out	5
Structural: Building Projects:	
Inception	5
Concept and Viability	25
Design Development	30
Documentation and Procurement	15
Contract Administration and Inspection	20
Close-Out	5
Mechanical, electrical and electronic projects:	
Inception	5
Concept and Viability	15
Design Development & Documentation and Procurement	30
Contract Administration and Inspection	40
Close-Out	10

- (2) Where not all the stages of the normal services are provided by the consulting engineer, the fee is, subject to clause 4.1(7), calculated as a percentage of the total fee calculated in terms of this clause, which percentage is the sum of the percentage points appropriate to each stage as set out in the above table against those stages of the services provided by the consulting engineer, typically plus 10 percentage points to allow the engineer to become familiar with the project.

4.2.10 Cancellation or Abandonment

Should instructions having been given by the client to the consulting engineer to proceed with any of the stages of services set out in clause 0 and the whole or part of the works is **cancelled or abandoned or postponed for a period of more than six months**, the consulting engineer shall be remunerated for services performed, plus a surcharge of one tenth of the full fee which would have been payable to the consulting engineer had his services been completed in terms of his engagement.

4.3 Fees for Additional Services

- (1) The fees for additional services, contemplated in clause 3.3, are agreed to between the client and the consulting engineer as set out in clause 4.1.
- (2) For additional **services** as a result of the resumption of such services or the alteration or modification of designs on the instructions of the **client**, the **consulting engineer** is entitled to time based fees and actual costs incurred.
- (3) For the provision of a **construction monitoring service**, as contemplated in clause 3.3.2, the consulting engineer is typically entitled to recover from the client
 - (a) for monthly monitoring staff costs, the **total annual cost of employment** of such staff (as defined in clause 4.5(4)), divided by 12 and multiplied by one of the following:
 - (i) Case 1: Where payment is only made for actual time on site and site allowances are not paid separately:
2.1 times total cost of employment.
 - (ii) Case 2: Where payment is only made for actual time on site and site allowances are paid separately:
2.0 times total cost of employment.
 - (iii) Case 3: Where payment is made for leave and non-working days and site allowances are paid separately:
1.8 times total cost of employment.
 - (b) for part time monitoring staff costs, the amount payable to such staff at the hourly rates contemplated in clause 4.5; and
- (4) For all other costs, as set out in clause 4.6 the actual expenses incurred, multiplied by 1.10.
- (5) For duties under the **Occupational Health and Safety Act**, 1993 (Act No.85 of 1993), as contemplated in clause 3.3.3, the consulting engineer shall, if so appointed by the client, be remunerated on a time and cost basis as agreed with the client.
- (6) For services as **lead consulting engineer**, as contemplated in clause 3.3.5, the lead consulting engineer is typically entitled to an additional fee of 10 percent (10%) of the total fees payable for the services.
- (7) For **engineering management services or services as the principal consultant**, as contemplated in clause 0, the consulting engineer will typically be remunerated as follows:
 - (a) The basic fee for services in the discipline of engineering management services, including work pertaining to **Building Projects**, is determined from the table below. The fee is the sum of the primary fee and the secondary fee applicable to the specific cost of the works in respect of which the services were rendered on the project.

Cost of the Works		Basis of Fee Calculation	
For projects up to R 512 000		A Lump Sum or on a Time Basis	
Where the cost of the works:		Primary Fee	Secondary fee
Exceeds	But does not exceed		
R 512 000	R 1 280 000	R 23 040	4,5% on the balance over R 512 000
R 1 280 000	R 6 300 000	R 57 600	3,5% on the balance over R 1 280 000
R 6 300 000	R 12 850 000	R 233 300	3,0% on the balance over R 6 300 000
R 12 850 000	R 32 000 000	R 429 800	2,5% on the balance over R 12 850 000
R 32 000 000	R 64 000 000	R 908 550	1,5% on the balance over R 32 000 000
R 64 000 000	R 385 500 000	R 1 388 550	1,5% on the balance over R 64 000 000
R 385 500 000		R 6 211 050	1,5% on the balance over R385 500 000

- (b) For normal services relating to a description of the works mentioned in the first column of the following table, the proportion of the basic fee relating to the specific calculated in terms of clause (a) is normally multiplied by the category factor mentioned against that description in the second column of the table. In case more than one of the descriptions below applies, the effective factor will typically be the product of the factors involved.

These factors do not apply when fees are a lump sum or on a time basis.

Description of the Works	Typical factor by which basic fee is multiplied
Multi-tenant installations	1,25
Alterations to existing works (Only applicable to the fees on the portion or section of works affected)	1,25

- (c) The following table is typically used to proportion the basic fee over the various stages of the services:

Stage of Services	Typical percentage points for each stage
Concept and design development	25
Design, documentation and tender	35
Construction	35
Completion of all engineering management services	5

- (8) For services as **principal agent of the client**, as contemplated in clause 3.3.8, the consulting engineer is typically entitled to an additional fee calculated at one percentage point (1%) of the total cost of the works comprising the project. The consulting engineer is not entitled to any fees for principal agent if he is not explicitly appointed as such. Services rendered as a **principal agent** can involve a considerable amount of essential work and the parties need to consider the work required and the corresponding remuneration carefully before such an appointment is concluded.

4.4 Value Based Fees

Certain projects and disciplines lend themselves to Value-based fees where the fee is negotiated between the parties based on the value arising out of the work done. Guidelines in this respect are in the process of development and are not included at this stage. Projects for which such fees will be applicable cannot be based on the cost of the Works but rather on the value generated by applying engineering skills to improve overall productivity and cost-effectiveness. Disciplines for which such fees will be particularly applicable include industrial engineering, for example.

4.5 Time Based Fees

- (1) Time based fees are all-inclusive fees, including allowances for overhead charges incurred by the consulting engineer as part of normal business operations, including the cost of management, as well as payments to administrative, clerical and secretarial staff used to support professional and technical staff in general and not on a specific project only.
 - (a) Time based fees are calculated by multiplying the hourly rate contemplated in clause 4.4, which is applicable to the consulting engineer or any other technical staff employed by the consulting engineer, with the actual time spent by such technical staff in rendering the services required by the client.
 - (b) Technical staff include all staff performing work directly related to the execution of the services the consulting engineer is engaged for by the client and excludes all administrative, clerical and secretarial staff used to support professional and technical staff in general and not on a specific project only, but includes the typing of letters, minutes, reports and documents for projects.
- (2) To determine the time based fee rates the persons concerned are divided into:-
 - (a) Category A, in respect of a private consulting practice in engineering, shall mean a top practitioner whose expertise and relevant experience is nationally or internationally recognized and who provides advice at a level of specialization where such advice is recognized as that of an expert.
 - (b) Category B, in respect of a private consulting practice in engineering, shall mean a partner, a sole proprietor, a director, or a member who, jointly or severally with other partners, co-directors or co-members, bears the risks of the business, or a person that takes responsibility for the projects and related liabilities of such practice and where his/her level of expertise and relevant experience is commensurate with the position, performs work of a conceptual nature in engineering design and development, provides strategic guidance in planning and executing a project and/or carries responsibility for quality management pertaining to a project.
 - (c) Category C, in respect of a private consulting practice in engineering, shall mean all salaried professional staff with adequate expertise and relevant experience performing work of an engineering nature and who carry the direct technical responsibility for one or more specific activities related to a project. A person referred to in Category B may also fall in this category if such person performs work of an engineering nature at this level.
 - (d) Category D, in respect of a private consulting practice in engineering, shall mean all other salaried technical staff with adequate expertise and relevant experience performing work of an engineering nature with direction and control provided by any person contemplated in categories A, B or C.
- (3) The time based fee rates are:-
 - (a) Calculated for a person in category-
 - (i) A and B at 22, 00 cents per hour;

- (ii) C at 17, 5 cents per hour; and
 - (iii) D at 16, 5 cents per hour,
 - for each R100 or part thereof of the **total annual cost of employment** of the person concerned, as contemplated in sub-clause (4); or
 - (b) based on such indicative time based fee rates as are determined from time to time by the Engineering Council of South Africa after consultation with service providers and service users: Provided that in all cases the client and consulting engineer may agree on a more appropriate fee to take account of the specific services to be rendered or expertise to be applied.
- (4) For the purposes of clause 4.5, the **total annual cost of employment** of a person means the total amount borne by an employer in respect of the employment of such a person per year, calculated at the amounts applicable to such a person at the time when the services are rendered, including –
- (a) Basic salary or a nominal market related salary, excluding profit share and asset growth;
 - (b) Fringe benefits not reflected in the basic salary, including:
 - (i) Normal annual bonus;
 - (ii) Employer's contribution to medical aid;
 - (iii) Group life insurance premiums borne by the employer;
 - (iv) Employer's contribution to a pension or provident fund; and
 - (v) All other benefits or allowances payable in terms of a letter of appointment, including any transportation allowance or company vehicle benefit, telephone and/or computer allowances, etc; and
 - (c) Amounts payable in terms of an Act, including:
 - (i) Contributions to the Compensation Fund in terms of the Compensation for Occupational Injuries and Diseases Act;
 - (ii) Contributions to unemployment insurance in terms of the Unemployment Insurance Fund Act;
 - (iii) Levies in terms of the Skills Development Levy Act, and
 - (iv) Recoverable levies to all spheres of government.

4.6 Expenses and Costs

- (1) Subject to clause 4.3(3) a consulting engineer shall recover from the client:
 - (a) All expenses actually incurred by the consulting engineer and members of the consulting engineer's staff in rendering their services; and
 - (b) All other costs incurred on behalf of and with approval of the client, plus a mark-up of 10 per cent.
- (2) Recoverable expenses include:
 - (a) Travelling expenses for the conveyance of the consulting engineer or a member of the consulting engineer's staff by means of:
 - (i) private motor transport, including any parking charges, toll fees and related expenses;
 - (ii) a scheduled airline or a train, bus, taxi or hired car; or
 - (iii) non-scheduled or privately owned air transport.
 - (b) Travelling time on the basis of the rate set out in clause 4.5, for all time spent in travelling by the consulting engineer or members of his staff shall be as follows:

- (i) when fees are paid on a time basis, all hours spent on travelling are reimbursable.
 - (ii) when fees are paid on a percentage basis, reimbursement for travelling time shall be for all time spent in travelling minus the first hour per return journey.
 - (c) Accommodation and subsistence expenses incurred by the consulting engineer or a member of his staff;
 - (d) Agreed costs of typing, production, copying and binding of contract documents, pre-qualification documents, feasibility reports, preliminary design reports, final reports and manuals, excluding general correspondence, minor reports, contractual reports, progress reports, etc.
 - (e) Expenses on special reproductions, copying, printing, artwork, binding and photography, etc. requested by the **client**.
 - (f) Alternatively, a lump sum or percentage of the **cost of the works** may be determined and agreed between the **consulting engineer** and the **client** to cater for all or any of the above.
- (3) Costs that shall be recovered under clause (1)(b) above include, but are not limited to:
- (a) Site traffic surveys;
 - (b) Geotechnical investigations;
 - (c) Laboratory testing;
 - (d) Topographical and land surveys;
 - (e) Supply of specific equipment;
 - (f) Specialist sub-consultants;
 - (g) Environmental investigations and studies; and
 - (h) Land acquisitions, expropriation, way leaves, and servitudes.
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