



GOVERNMENT OF MALAWI

MALAWI ENGINEERING INSTITUTION

(Malawi Engineering Institution Act, 2019)



PROFESSIONAL ENGINEERING SERVICES

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A. INTRODUCTION

This document outlines services that are engineering in nature. As such, these services should be provided by or under the supervision of a professional engineer. Various stages and arrangements under which these services can be provided have been outlined. The expected deliverables from the professional engineer are also listed in this document.

It is an offence for these activities to be carried out by someone who is not a professional engineer. In this case, both the person seeking the services and the one providing the services when they are not a professional engineer may be prosecuted under the Malawi Engineering Institution Act of 2019.

B. ENGINEERING SERVICES

1. Planning studies, investigations and assessments

The planning, investigation and assessment 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 normally involve:

1. Consultation with the client or client's authorized representatives
2. Inspection of the project site
3. Developing and defining the scope of work where required
4. Preliminary investigation, route, location, planning and a level of design appropriate to allow decisions on feasibility
5. Assessment of existing infrastructural elements with the view of informing the project on options of how to integrate existing works with proposed new works
6. Consultation with authorities having rights or powers of sanction as well as consultation with the public and stakeholder groups
7. Advice to the client as to regulatory and statutory requirements, including environmental management and the need for survey, analysis, 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
8. Searching for, obtaining, investigating and collating available data, drawings and plans relating to the works
9. Investigating financial and economic implications relating to the proposals or feasibility studies.

10. Clause (9) does not normally apply to civil and structural services or on building projects, where these services are provided by a quantity surveyor, except as far as the interpretation of cost figures concerning the engineer's scope of works.
11. Assist the Client to develop timeframes for next stages of the project where required.

Deliverables will typically include

- Collation of information
- Reports on technical and financial feasibility and related implications
- List of consents and approval
- Schedule of required surveys, tests, analysis, site and other investigations
- Timeframes for upcoming deliverables.

2. Standard Professional Engineering Services

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

In the case where only a single engineer is appointed on a project, the services and deliverables of the principal agent are included as standard and must be agreed between the parties to see the project through all stages.

Financial Administration

Unless otherwise agreed in writing prior to the commencement of any work, part of the standard services of the professional engineer on all projects includes the provision of services related to all financial matters such as calculation of quantities, cost estimates, cost control and the procurement process.

The only exceptions, where financial services do not form part of the standard services of the professional engineer are in the following cases;

- Structural and civil engineering services related to building and multi-disciplinary projects and where such services form part of the quantity surveyor's scope of services. Where the civil and structural professional engineer is required to give assistance with such services, these shall be treated as an additional service remunerated on a time and cost basis.

- In the case of building and multi-disciplinary projects where the scope of works forms part of the principal building contract (for example a domestic subcontract) and where such financial administration services form part of the quantity surveyor's scope of services.

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, aspiration 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 but not limited to:

- agreed scope of services and scope of work
- signed agreement
- report on project site and functional requirements
- schedule of required surveys, tests, analysis, site and other investigations
- schedule of required consents and approvals and related timeframes

2.2 Stage 2 - Concept and Viability (often called preliminary design)

Defined as: Prepare and finalize 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 agent or 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, analysis, tests and investigations that may be required.
6. Establish regulatory authorities' requirements and incorporate into the design.
7. Refine and assess the concept to ensure conformance with all regulatory requirements and consents.
8. Establish access, utilities, services and connections required for the design.
9. Participate in coordinated design interfaces with architect or other consultants involved.
10. Prepare process designs (where required), preliminary designs, and related documentation for approval by authorities and client and suitable for costing.
11. Provide cost estimates and life cycle costs, as required
12. Liaise, cooperate and provide necessary information to the client, principal consultant and other consultants involved.

Deliverables will typically include.

- concept design
- schedule of required surveys, tests and other investigations and related reports.
- process design
- preliminary design
- cost estimates, as required

2.3 Stages 3 - Design Development (also termed detailed design)

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

1. Review documentation 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 consultants' designs and requirements into the designs.
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.

Deliverables will typically include:

- design development drawings
- outline specifications
- local and other authority submission drawings and reports.
- detailed estimates of constructions costs.

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 timely 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 schedule for compliance with approved budget.
8. Assist in calling for tenders and/or negotiation of prices and/or assist the principal consultant or quantity surveyor where relevant.
9. Liaise, co-operate and provide necessary information to the principal consultant and the other consultants as required,
10. Assist in evaluating tenders
11. Assist to prepare contracts documentation for signature
12. Assess samples and products for compliance and design intent
13. Assist in pricing, documentation and tender evaluation as required when the detailed services for these activities are provided by others.

Deliverables will typically include:

- specifications
- services coordination
- working drawings

- budget construction cost
- tender documentation
- tender evaluation report
- tender recommendation
- priced contract documentation

2.5 Stage 5 - Contract Administration and Inspection (also known as construction supervision and contract administration)

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, reinforcement bending schedules and detailing, and specification of structural steel sections and connections.
3. Carry out contract administration procedures in terms of the contract.
4. Prepare schedules of predicted cashflow
5. Prepare pro-active estimates of proposed variations for client decision-making.
6. Attend regular site, technical and progress meetings.
7. Inspect the works for conformity to contract documentation as described under clause 3.3.2.
8. Review the outputs of quality assurance procedures and advise the contractor and client adequacy and need for additional controls, inspections and testing.
9. Adjudicate and resolve financial claims by contractors.
10. Assist in the resolution of contractual claims by the contractor
11. Establish and maintain a financial control system.
12. Clarify details and descriptions during construction as required.
13. Prepare valuations for payment certificates to be issued by the principal agent.
14. Witness and review of all tests and mock-ups carried out on site.
15. Check and approve contractor drawings for compliance with contract documents.
16. Update and issue drawings register.
17. Issue contract instructions as and when required.
18. Review and comment on operation and maintenance manuals, guarantee certificates and warranties.
19. Inspect the works and issue practical completion and defects lists.

20. Arranging for the delivery of all test certificates, including any certificates of compliance, statutory and other approvals, and record drawings and operating manuals.

Deliverables will typically include:

- schedules of predicted cashflow
- construction documentation
- drawing register
- estimates for proposed variations
- contract instructions
- financial control reports.
- valuations for payment certificates
- progressive and draft final account
- practical completion and defects list
- all statutory certification and certificates of compliance as required by the local and other statutory authorities.

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 on, and approve relevant payment valuations and completion certificates.
3. Prepare and/or procure operations and maintenance manuals, guarantees and warranties.
4. Prepare and/or procure as-built drawings and documentation.
5. Conclude the final accounts where relevant

Deliverables will typically include:

- valuations for payment certificates
- works and final completion lists
- operations and maintenance manuals, guarantee and warranties.
- as-built drawings and documentation
- final accounts

3. Additional services

The following services are additional to the standard services provided by the professional engineer unless specially agreed otherwise between the professional engineer and the client. The agreement on the scope of services and remuneration must be in writing and should, if at all possible, be concluded before the services are rendered.

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 Clause 3.1, planning, studies, investigations and assessments, and that are normally paid for on a time and cost basis.
2. Enquiries not directly concerned with the works and its subsequent utilization.
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 and or infrastructure 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 professional engineer's control.
7. Additional work related to monitoring as required by any government departments or authorities to facilities regulatory approvals and certifications
8. Topographical and environmental surveys, analysis, tests and site or foundation or other investigations, model tests, laboratory tests and analysis 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 professional engineer and submitted by any contractor or potential contractor as alternative to those embodied in tender or similar documents prepared by the professional engineer.
12. Inspection and testing, other than on site, of materials and plant, including inspection and testing during manufacture.
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 professional 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, to optimize 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 operation and maintenance manuals.
19. Preparing record drawings on designs done by others or related to alterations to existing works.
20. 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 professional 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 professional engineer and the client prior to the execution thereof.
21. Work and or service 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.
 - Auditing compliance to the above by any contractor and/or professional consultant
22. Exceptional arrangements, communication, facilitation and agreements with any stakeholders other than the client and contractors appointed for the works on which the professional engineer provides services.
23. Any other additional services of whatever nature, specifically agreed to in writing between the professional engineer and the client.
24. Building Information Modelling (BIM) compliancy. Where BIM is a specified project requirement, the appointment as a BIM Manager, the preparation and approval by the client of the BIM Execution Plan and the additional effort over conventional projects to set up the project to be fully BIM compliant as required by the Client.

3.2 Construction monitoring

Quality assurance during construction refers to the engineering activities that are implemented to demonstrate to the client that works are highly likely to meet the requirements. This is achieved through a combination of the quality control processes that are put in place by the contractor to

control its outputs and the inspection and acceptance testing that is carried out by the professional engineer to confirm conformance prior to certification. While the contractor takes the ultimate responsibility for quality and meeting the design requirements, a quality assurance plan and the related construction monitoring assure the client and the professional engineer that the specified quality and design requirements are highly likely to be met.

This means that the client and professional engineer should agree a satisfactory arrangement in respect of construction monitoring that suits the type of works, the project location and the duration of the critical aspects of the works. Disagreement regarding the required level of construction monitoring should not be taken lightly and the parties should carefully consider the consequences of non-compliance and related responsibilities, bearing in mind that the professional engineer has a duty of care, while the client should strive to ensure quality and minimize life-cycle costs.

The level of construction monitoring and the frequency and duration of the site visits must be agreed with the client prior to commencement of the works and should be recorded in the agreement with the Client. The level of construction monitoring and activities related to the quality assurance plan may change during the course of the works to reduce quality related risks and this will require an amendment of the agreement.

Level 1 construction monitoring services may suffice for simple projects where more regular inspections are not required other than during critical stages of the works with less frequent visits once the portion of the works in which the professional engineer is involved has largely been completed. In most situations, however, more regular construction monitoring is required for quality assurance and clarification.

Aspects that need to be considered when determining the degree to which additional construction monitoring services are required are:

- The type of work
- The discipline of the work (civil, structural, mechanical, electrical etc.).
- The competency of the contractor and its related quality control system.
- The speed with which critical elements of the work are covered.
- The consequences of non-compliance
- The timing and ease of subsequent detection and rectification of non-compliance

Arising from the above, three levels of construction monitoring may be defined and described as follows:

(a) Level 1: Periodic Construction Monitoring

The professional engineer's staff must:

- i) Visit the works at a frequency agreed with the client or at on-call basis at a notice time agreed with the contractor and the client, with extra visits for works completion, inspection, provision of design/technical clarifications and inspections for works defects lists.
- ii) Review random samples of material and work procedures, for conformity to contract documentation and review random samples of important completed work prior to covering up, or on completion, as appropriate.

(b) Level 2: Part-time Construction monitoring

The professional engineer's staff, or part-time construction monitoring staff must:

- i) Regularly visit the site at a frequency that may vary during the course of the project, and such visits may be daily or weekly, according to the project demands; the frequency and duration of site visits must be agreed in writing between the client and the professional engineer prior to commencement of the services
- ii) Review regular samples of materials and work procedures for conformity to contract documentation, provide design/technical clarifications where required and review regular samples of important completed work prior to covering up, or on completion, as appropriate.
- iii) Where the professional engineer is the sole professional service provider or principal agent, carry out such administration of the project as is necessary on behalf of the client.

(c) Level 3. Full-time Construction Monitoring (full-time staff resident on site for the duration of the works and paid for by the client as an additional service)

The full-time construction monitoring staff must:

- i) Maintain a full-time presence on site to constantly review samples of materials and work procedures, for conformity to contract documentation, provide design/technical clarifications and review completed work prior to covering up, or on completion, as appropriate.
- ii) Assist with the preparation of as-built records and drawings to the extent required in the agreement with the client

- iii) Where the professional engineer is the sole professional services provider or principal agent, carry out such administration of the project as is necessary on behalf of the client.

Level 1 construction monitoring is considered to be a basic level of services and is only suitable for the most simple, routine projects. The client must be aware of the risk associated with Level 1 construction monitoring because the professional engineer is often unable to witness or inspect work prior to its being covered up and is not liable for hidden defects. On any project where a significant portion of its work is rapidly covered such as projects involving underground services and building projects like secondary healthcare, tourism and leisure, industrial, commercial, retail and office buildings with complex electrical and mechanical works, Level 2 and Level 3 construction monitoring is required.

Where Level 1 construction monitoring is applied on a project and for reasons beyond the control of the professional engineer, additional site visits in excess of the frequency initially agreed with the client or are on-call basis, these must be undertaken by the professional engineer and will be regarded as an additional service.

Most engineering work typically requires at least Level 2 monitoring to enable the engineer to inspect work prior to its being covered up. Examples may include witnessing the position of reinforcing steel prior to pouring concrete, underground installations or installations above false ceilings. The professional engineer may also require acceptance inspection and testing of various elements on a regular basis depending on the quality controls instituted by the contractor as part of the quality assurance plan. Level 2 construction monitoring does not allow for a full-time presence on site and so the professional engineer and construction monitoring staff are unable to witness/inspect all work prior to its being covered up.

In the case of most civil works where all materials and elements are generally regarded as being critical and covered on a daily basis, work is monitored on a continuous basis for the duration of the works and Level 3 monitoring usually applies. This level is also applied to the structural works that are included in such projects.

In some instances, staff members are made available by the client to assist in construction monitoring, in which cases, these persons should report to and take instructions from the professional engineer or an authorized representative of the professional engineer to avoid mixed messages being passed to the contractor.

3.3 Occupational Health and Safety Act, 21 of 1997

Should the client require the professional engineer to undertake duties falling under the Occupational Health and Safety Act, 21 of 1997, on behalf of the client, the additional services may include the following:

- The professional engineer must arrange, formally and in writing, for the contractor to provide documentary evidence of compliance with all the requirements of the Occupational Health and Safety Acts, 21 of 1997.
- The professional engineer must execute the duties of the client, as his appointed agent, as contemplated in the Occupational Health and Safety Act, 21 of 1997.

3.4 Quality assurance system

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

3.5 Lead professional engineer

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

- 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 professional engineers.
- Responsibility for the overall coordination, programming of design and financial control of all the works included in the services.
- Processing certificates or recommendations for payment of contractors.

3.6 Engineering Management Services (principal consultant)

Should the client require the professional engineer to undertake duties of an engineering management nature on behalf of the client, the additional services will include the following:

Stage 1 Services - Inspection

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 definitions 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 projects.
5. Define the consultant's scope of work and services.
6. Conclude the terms of the agreement with client
7. Facilitate a schedule of the required consents and approvals.
8. Prepare, coordinate 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 the required consents and approval
- Project initiation programme
- Record of all meetings

Stage 2 Services - Concept and Viability

1. Assist the client to procure 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 procedure 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 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 - Design Development

1. Agree and implement communication processes and procedures for the design development of the project.
2. Assist the client to procure the necessary other consultants including the clear definition of their roles and responsibilities.
3. Prepare, coordinate, agree and monitor a detailed design and documentation programme.
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 timely technical coordination.
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 - Documentation and Procurement

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 insurance.
4. Coordinate and monitor preparation of procurement documentation by consultants in accordance with the project procurement programme.
5. Assist the client to manage procurement process and recommend contractors for approval by the client
6. Agree the format and procedures for monitoring and control by the quality surveyor of the cost of the works.
7. Coordinate and assemble the contract documentation for signature.

Typical deliverables

- Procurement programme
- Tender/contract conditions
- Record of all meetings
- Approval by the client of tender recommendations

- Contract documentations for signature

Stage 5 Services - Contract Administration and Inspection

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, coordinate and monitor approval of all contract documentation provided by contractors.
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 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
- Records of meetings

Stage 6 Services - Close-out

1. Coordinate 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. Management procurement of outstanding statutory certificates.
5. Monitor, review and issue payment certificates.
6. Issue completion certificates.
7. Manage agreement of final accounts
8. Prepare and present the project close-out report.

Typical deliverables

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

3.7 Mediation, arbitration and litigation proceedings and similar services

Where the client requires the professional engineer to, on his or her behalf, perform the services listed hereunder or similar work, the extent thereof and remuneration are subject to agreement between the client and the professional engineer.

- Dealing with matters of law, briefing stakeholders, and obtaining statutory approvals, licenses or permits.
- Assist with or participating in contemplated or actual mediation, arbitration or litigation proceedings.
- Officiating at or attending courts and commissions of enquiry, select committees and similar bodies convened by statute, regulation or decree.

3.8 Principal agent of the client

When a professional engineer is in addition to his normal functions as professional engineer, appointed as the client's principal agent for the purpose of procurement and construction on a project, the professional engineer is also responsible for the following:

Stage 3 Services - Design Development

1. Prepare, coordinate, agree and monitor a detailed design and documentation programme.

Typical deliverables

Detailed design and documentation programme

Stage 4 Services - Documentation and Procurement

1. Recommend and agree procurement strategy for contractors, subcontractor and suppliers with the client and other consultants.
2. Prepare and agree the procurement programme.
3. Advise the client, in conjunction with the other consultants, on appropriate insurance.
4. Assist the client to 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. Coordinate and assemble the contract documentation for signature.

Typical deliverables

- Procurement programme.
- Tender/control conditions.
- Contract documentation for signature.

Stage 5 Services - Construction Administration

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, coordinate and monitor approval of all contract documentation provided by contractors.
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.

Typical deliverables:

- Signed contracts.
- Approved construction programme
- Construction documentation
- Payment certificates.
- Progress reports.
- Record of meetings.
- Certificates of practical completion.
- Facilitate and expedite receipt of occupation certificates.

Stage 6 Services - Close-out

1. Coordinate 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 accounts.
8. Prepare and present the project close-out report.

Typical deliverables

- Completion certificates
- Records of necessary meetings
- Project close-out report