

REGISTRATION OF ENGINEERS ACT, 1967

NOTIFICATION

IN exercise of the powers conferred by section 4(d) of the Registration of Engineers Act, 1967, the Board of Engineers, with the approval of the Minister, fixes the following scale of fees to be charged by registered Professional Engineers for professional advice or service rendered.

1. Subject to paragraph 2, every consulting engineer who is engaged by a client to perform any of the professional services described in Part A shall be paid in accordance with the scale of fees described in Part B in addition to the other payments described in Part C.
2. Where the professional services of the consulting engineer are rendered in respect of:
 - (a) Class I works described in Appendices A and B, the consulting engineer shall be paid in accordance with either paragraph 1(1), 1(2) or 1(3) of the scale of fees described in Part B;
 - (b) Class II and Class III works described in Appendices A and B, the consulting engineer shall be paid in accordance with paragraph 1(1) of the scale of fees described in Part B.
3. Notwithstanding paragraph 2 and where the consulting engineer is being paid in accordance with paragraph 1(1) of the scale of fees described in Part B, the scale of fees provided in paragraph 1(1)(g) of Part B shall not apply to housing development works.
4. In this Notification unless the context otherwise requires :

"consulting engineer" means the Engineer engaged by the client to perform the professional services;

"contractor" means any person or persons, firm or company under a contract with the client to perform any work or to supply goods in connection with works or both and includes a sub-contractor;

"cost of works" includes the cost to the client of the works however incurred, including any payments (before deduction of any liquidated damages or penalties payable by the contractor to the client) made by the client to the contractor by way of bonus, incentive or ex-gratia payments or in settlement of claims; a fair valuation of any labour, materials, manufactured goods, machinery or other facilities provided by the client, and of the full benefit accruing to the contractor from the use of construction plant and equipment belonging to the client which the client has required to be used in the execution of the works; the market value, as if purchased new, of any second-hand materials, manufactured goods and machinery incorporated in the works; the cost of geotechnical investigations; and a fair proportion of the total cost to the client of any work in connection with the provision or diversion of public utilities systems which is carried out, other than by the contractor, under arrangements made by the consulting engineer, assessed with reference to the costs incurred by the consulting engineer in making such arrangements; but shall not include administration expenses; costs incurred by the client under the Agreement between the consulting engineer and the client; interest on capital during construction, and the cost of raising moneys required for carrying out the construction of the works; costs of land and way-leaves; and price variation arising from escalation of prices;

"multiplier" includes a factor derived from the elements covering annual salary; fringe benefits including bonuses, Employees Provident Fund, staff savings fund, subscriptions to professional institutions, leave, medical aid and insurances, seminars, conferences and workshops; office administrative charges and expenses including rentals, telephones, telex and postal charges, stationery, subscriptions to journals, promotion, training and scholarships, transport costs, legal and audit fees; bank charges and idle time; and profits; but in the case of site staff recruited specially for the project, the multiplying factor shall be derived from the elements covering the annual salary, gratuity, Employees Provident Fund, medical aid, insurances, overheads and profits only;

"project" means the project for which the client has engaged the professional services of the consulting engineer and of which the works form a part;

"salary cost" means the annual salary of any person employed by the consulting engineer divided by 1800 (being deemed to be the average annual total of effective working hours of an employee) and

multiplied by the number of working hours spent by such person in performing any of the services in respect of which payment is to be made to the consulting engineer upon the basis of salary cost; and for the purpose of this definition, the annual salary of a person for a period of less than a full year shall be calculated prorata to such person's salary for such lesser period;

"works" means the works in connection with which the client has engaged the consulting engineer to perform professional services.

PART A

PROFESSIONAL SERVICES

1. Normal Professional Services

The professional services to be rendered by the consulting engineer in this paragraph include the provision of all expert technical advice and skills which are normally required for the class of works for which the consulting engineer has been engaged.

(a) Preliminary Stage

The professional services to be provided by the consulting engineer at this stage include:-

- (i) investigating data and information relevant to the works and considering any reports relating to the works;
- (ii) advising the client on making any further topographical survey of the proposed site of the works which may be necessary to supplement available topographical information;
- (iii) advising the client on the need to carry out any geotechnical investigation which may be necessary to supplement the available geotechnical information, arranging for such investigation, certifying the amount of any payments to be made by the client to the persons, firms or companies carrying out such investigation under the consulting engineer's direction, and advising the client on the results of such investigation;
- (iv) advising the client on the need for arrangements to be made, in accordance with paragraph 2 of this Part, for the carrying out of special surveys; special investigations or model tests and advising the client of the results of any such surveys, investigations or tests carried out;
- (v) consulting any architect appointed by the client in connection with the architectural treatment of the works; and
- (vi) preparing such reports and documents as are reasonably necessary to enable the client to consider the consulting engineer's proposals, including alternatives for the construction of the works in the light of the investigations carried out by him at this stage, and to enable the client to apply for approval in principle of the execution of the works in accordance with such proposals.

(b) **Design Stage**

The professional services to be provided by the consulting engineer at this stage include:-

- (i) preparing designs and tender drawings in connection with the works, including bar bending schedules, if required; and
- (ii) preparing such conditions of contract, specifications, schedule and bills of quantities as may be necessary to enable the client to obtain tenders or otherwise award a contract for carrying out the works.

(c) **Tender Stage**

The professional services to be provided by the consulting engineer at this stage include advising the client as to the suitability for carrying out the works of the persons, firms or companies tendering and as to the relative merits of tenders, prices and estimates received for carrying out the works.

(d) **Construction Stage**

The professional services to be provided by the consulting engineer at this stage include:-

- (i) advising on and preparing normal contract documents, including letter of acceptance for carrying out the works or part thereof;
- (ii) inspecting and testing during manufacture and installation such electrical and mechanical materials, machinery and plant supplied for incorporation in the works as are usually inspected and tested by consulting engineers, and arranging and witnessing acceptance test;
- (iii) advising the client on the need for special inspection or testing other than that referred to in (ii) above;
- (iv) advising the client on the appointment of site staff in accordance with paragraph 3 of this Part;
- (v) preparing any further bar bending schedules, designs and drawings;
- (vi) examining and approving the contractor's proposals and working drawings;
- (vii) making such visits to site as the consulting engineer shall consider necessary to satisfy himself as to the performance of any site staff appointed pursuant to paragraph 3 of this Part and to satisfy himself that the works are executed generally according to contract and otherwise in accordance with good engineering practice;
- (viii) giving all necessary instructions to the contractor;
- (ix) issuing all certificates as required in the contract;
- (x) performing any duties which the consulting engineer may be required to carry out in any contract for the execution of the works;
- (xi) delivering to the client on the completion of the works such records and manufacturer's manuals as are reasonably necessary to enable the client to operate and maintain the works; and
- (xii) deciding any dispute or difference arising between the client and the contractor and submitted to the consulting engineer for his decision, provided that this professional service shall not extend to advising the client following the taking of any step in or towards any arbitration or litigation in connection with the works.

2. Additional Professional Services Not Included In Normal Services

The additional professional services to be provided by the consulting engineer include the following:-

- (a)
 - (i) preparing any report or additional contract documents required for consideration of proposals for the carrying out of alternative works;
 - (ii) carrying out work consequent upon a decision by the client to seek amendments to existing laws affecting the works;
 - (iii) carrying out work in connection with any application already made by the client for any order, sanction, licence, permit or other consent, approval (not including the normal approval required from the relevant technical authorities such as building authorities, water-works authorities, electricity authorities and telecoms authorities) or authorisation necessary to enable the works to proceed;
 - (iv) carrying out work arising from the failure of the client to award a contract in due time;
 - (v) preparing details for shop fabrication of ductwork, metal, plastic and timber framework;
 - (vi) carrying out work consequent upon any assignment of a contract by the contractor or upon the failure of the contractor properly to perform any contract or upon delay by the client in fulfilling his obligations or in taking any other step necessary for the due performance of the works;
 - (vii) advising the client and carrying out work following the taking of any step in or towards any litigation or arbitration relating to the works;
 - (viii) carrying out work in conjunction with others employed to provide any of the services specified in paragraph 2(b) of this Part; and
 - (ix) carrying out such other additional services, if any, as are specified.
- (b)
 - (i) obtaining specialist technical advice on any abnormal aspects of the works;
 - (ii) obtaining architectural, legal, financial and other professional services;
 - (iii) providing services in connection with the valuation, purchase, sale or leasing of lands and the obtaining of way-leaves;
 - (iv) the carrying out of marine, air, and land surveys other than those referred to in paragraph 1(a) of this Part and the making of model tests or special investigations; and
 - (v) the carrying out of special inspection or tests advised by the consulting engineer under paragraph 1(d)(iii) of this Part.

3. Supervision On Site

The consulting engineer may be required to provide part-time or full-time engineer supervision on site.

PART B

SCALE OF FEES

Scale of Fees For Normal Professional Services

The consulting engineer in performing any of the professional services described in paragraph 1 of Part A shall be paid in accordance with only one of the following scale of fees as described in paragraph 1(1), 1(2) and 1(3) of this Part.

(1) Payment Depending upon the cost of the Works

(a) The payment depending upon the cost of the works shall be computed as follows:-

(i) The works shall first be grouped into one or more of the following groupings as shall be appropriate:-

Group A - civil/structural engineering works including geotechnical investigations but excluding mechanical and electrical services; and

Group B - mechanical and electrical services including mechanical and electrical plant and equipment but excluding Group A works.

(ii) The engineering works as grouped above shall then be classified into one or more of the appropriate classes of works as detailed in Appendices A and B.

(iii) The cost of each relevant class of works within each of the above groupings shall next be computed.

(iv) The consulting engineer shall then be paid an amount or the sum of the amounts calculated in respect of each relevant class of works within a group of works in accordance with the scale of fees set out in paragraph 1(1)(c) of this Part, where the cost of a group of works is not less than \$50,000, or in accordance with the scale of fees in paragraph 1(2) of this Part where the cost of a group of works is less than \$50,000.

(v) The computation of fees payable for each group of works where the project contains more than one class of works shall be performed as follows:-

the total cost of all classes of works computed in paragraph 1(1)(a)(iii) above shall be derived and the fee computed in accordance with the scale of fees for the lowest class; plus

additional fee for the next higher class of works which shall then be computed by applying the difference between the scale of fees of the lowest class and that of the higher class upon the total cost of all classes of works less the cost of works already apportioned to the lowest class; plus

in the event that there is a next higher class of works, an additional fee shall be computed by applying the difference between the scale of fees of the lower class and this class upon the total cost of works of all the classes less the cost of works already apportioned to the lower two classes.

(b) Where the works have been classified in accordance with paragraph 1(1)(a) of this Part into more than one class, there shall be attributed to each class an appropriate portion of the cost of any "General or Preliminary Items" included in the total cost of the works, so that the total cost of all classes of works shall equal the total cost of the works.

(c) The scale of fees referred to in paragraph 1(1)(a) of this Part shall be as follows:-

Cost of Class of Works		Fee for Class I works	Fee for Class II works	Fee for Class III works
On the first	\$ 50,000	11%	9%	7%
On the next	\$ 75,000	9%	7½%	6¼%
On the next	\$ 125,000	7½%	6¾%	5¾%
On the next	\$ 250,000	6½%	6¼%	5¼%
On the next	\$ 500,000	6%	5¾%	4¾%
On the next	\$ 1,500,000	5½%	5¼%	4¼%
On the next	\$ 2,500,000	5%	4¾%	3¾%
On the next	\$ 5,000,000	4½%	4¼%	3½%
On the next	\$10,000,000	4¼%	3¾%	3¼%
On the next	\$20,000,000	4%	3½%	3%
On the remainder		3¾%	3½%	3%

(d) Additional fees on the reinforced concrete portion of the works including concrete, reinforcement, prestressing tendons and anchorages, formwork, inserts and all labours together with relevant portion of the "Preliminaries" shall be as follows:-

Cost of reinforced concrete portion of works		Fees for reinforced concrete works	
On the first	\$ 500,000	3½% of the cost of the reinforced concrete portion of the works	
On the next	\$2,000,000	2½%	- ditto -
On the next	\$2,500,000	2%	- ditto -
On the remainder		1½%	- ditto -

If bar bending schedules are not required, the additional fees on the reinforced concrete portion of the works shall be reduced by 25%.

- (e) Additional fees for structural steelwork shall be one half of that for reinforced concrete portion of the works.
- (f) Where the works are to be constructed in more than one phase and as a consequence the services which may be necessary for the consulting engineer to perform under paragraph 1 of Part A have to be undertaken by the consulting engineer separately in respect of each phase, then these provisions for payment shall apply separately to each phase as if the expression "the works" as used in this paragraph means the works comprised in each phase.
- (g) Where the design for any unit of works is repeated in the construction of subsequent units by the same client under one works contract or under other contracts at the same site or other sites for which standard type drawings, specifications and other documents are used, the fees for the subsequent units shall be in accordance with the following scale:-

Repetitive work for	Fees for design copyright only	Fees up to & including tender stage	Fees up to & including construction stage
Original unit	(Apply paragraph 1(1), 1(2) or 1(3) of this Part)		
2nd unit	30 %	35 %	65 %
3rd unit	20 %	25 %	55 %
4th unit	10 %	15 %	45 %
5th & subsequent units	Free of Charge	5 %	35 %

Provided that the above scale of fees shall not apply to housing development works.

(2) Payment of A Fixed Sum

- (a) The consulting engineer in performing any or all of the professional services described in paragraph 1 of Part A shall be paid a sum not less than that deductible from paragraph 1(1) of this Part basing on, instead of the actual cost of each separate class of works, the estimates thereof approved by the client and the consulting engineer at the time of the consulting engineer's engagement.
- (b) In addition to the sum paid under paragraph 1(2)(a) above, the consulting engineer shall be paid such fees as described in paragraph 2 of this Part for any professional services rendered under paragraph 2 of Part A.

(3) Payment On The Basis of Salary Cost Times Multiplier

- (a) In respect of the provision by the consulting engineer of professional services described in the following paragraphs:-

Paragraph 1 of Part A	Normal Professional Services
Paragraph 2 of Part A	Additional Professional Services Not Included In Normal Professional Services
Part C	Other Payments

the consulting engineer shall be paid:-

- (i) salary cost times the multiplier in respect of the times spent by partners, consultants, and technical supporting staff; and
 - (ii) the fee for the use of computers or other special equipment under paragraph 1(ii) of Part C.
- (b) The consulting engineer shall not be entitled to any payment in respect of time spent by secretarial staff or by staff engaged on general accountancy or administration duties in the consulting engineer's office.

2. Scale of Fees For Additional Professional Services Not Included In Normal Services

Payment For Additional Services

The consulting engineer who has rendered any of the additional professional services described in paragraph 2 of the Part A shall be paid in accordance with the following scale of fees:-

- (a) the partners and consultants shall be paid at the hourly rate or rates deducible from the salary cost times the appropriate multiplier.
- (b) the technical and supporting staff shall be paid the salary cost times the appropriate multiplier.
- (c) time spent by partners, consultants, technical and supporting staff in travelling in connection with the works shall be chargeable as provided in paragraphs 2(a) and (b) of this Part respectively.
- (d) the consulting engineer shall not be entitled to any payment in respect of time spent by secretarial staff or by staff engaged on general accountancy or administration duties in the consulting engineer's office.
- (e) where the consulting engineer has obtained the advice of a specialist under paragraph 2(b) of Part A, the consulting engineer shall be paid by the client a co-ordinating fee of 5% of the specialist fee paid to such specialist by the client provided that such a co-ordinating fee shall not be applicable when the method of payment for the professional services rendered is agreed between the consulting engineer and the client to be as described in paragraphs 1(2) and 1(3) of this Part.

3. Stages Of Payment Of Fees

The agreed proportion of payment of fees for the relevant stages of the consulting engineer's professional services shall be as follows:-

	Alternative 1*	Alternative 2*	Alternative 3*
1. Preliminary stage	20%	20%	20%
2. Design stage (i)	30%	45%	35%
3. Design stage (ii)	15%	15%	20%
4. Tender Stage	5%	5%	5%
5. Construction stage	30%	15%	20%

*Notes:

Alternative 1 shall be appropriate for the design and supervision of civil and mechanical/electrical works, i.e. Group A or Group B works but excluding structural engineering works and engineering systems in buildings.

Alternative 2 shall be appropriate for structural engineering works in buildings.

Alternative 3 shall be appropriate for engineering systems in buildings.

PART C

OTHER PAYMENTS

1. Payment For Use of Computer Or Other Special Equipment

Where the consulting engineer is to be paid by the client:-

- (a) in accordance with paragraph 1(3) of Part B for the performance of his professional services; or
- (b) in accordance with paragraph 1(1) or 1(2) of Part B for the performance of the professional services described in paragraph 1 of Part A or of any additional professional services described in paragraph 2 of Part A,

and in both instances computers or other special equipment had been utilised, the consulting engineer shall be paid for:-

- (i) the time spent in connection with the use of the computers or other special equipment, the development and writing of programmes, and the operation of the computers and other special equipment in trial and final runs, in accordance with paragraph 1(3) of Part B when applicable or in accordance with the scale of fees described in paragraph 2 of Part B; and
- (ii) the actual hiring charge for the use of the computers or other special equipment.

2. Payment For Site Supervision

- (1) In addition to any other payment to be made by the client to the consulting engineer under paragraphs 1(1) and 1(2) of Part B, the consulting engineer shall be:-
 - (a) reimbursed in respect of all salary and wage payments made by the consulting engineer to site staff employed by the consulting engineer pursuant to paragraph 3 of Part A and in respect of all other expenditure actually incurred by the consulting engineer in connection with the selection, engagement and employment of site staff; and
 - (b) paid a sum calculated at 7 percent of the amounts payable to the consulting engineer under (a) above in respect of head office overhead costs incurred on site staff administration.
- (2) In addition to any other payment to be made by the client to the consulting engineer under paragraph 1(3) of Part B, the consulting engineer shall be:-
 - (a) reimbursed in respect of all salary cost made by the consulting engineer to his own staff seconded to site pursuant to paragraph 3 of Part A, times a multiplier; and
 - (b) reimbursed in respect of all salary and wage payments made by the consulting engineer to site staff specially recruited by the consulting engineer pursuant to paragraph 3 of Part A, times a multiplier and all other expenditure actually incurred by the consulting engineer in connection with the selection, engagement and employment of such site staff.
- (3) The consulting engineer shall also in all cases be reimbursed for the actual cost of providing such site office accommodation, furniture, telephones, equipment and transport as shall be reasonably necessary for the use of site staff appointed pursuant to paragraph 3 of Part A, and for the actual running cost of such necessary site accommodation and cost of other facilities, including stationery, telephone calls, telegrams and postage.

3. Disbursements

The consulting engineer shall in all cases be reimbursed by the client for the disbursements actually incurred in connection with:-

- (a) printing, reproduction and purchase of all documents, drawings, maps and record;
- (b) telegrams, telex and telephone calls other than local;
- (c) travelling, hotel expenses and other similar disbursements;
- (d) advertising for tenders and for site staff; and
- (e) the provision of additional professional services to the client under paragraph 2(b) of Part A.

4. Payment For Alteration or Modification To Design

If after the completion by the consulting engineer of his professional services under paragraph 1(a) of Part A or, where the consulting engineer is to be paid in accordance with paragraph 1(2) of Part B, at any time after the execution of an agreement between the consulting engineer and the client, any design whether completed or in progress or any specification, drawings or other document prepared in whole or in part by the consulting engineer shall require to be modified or revised by reason of instructions received by the consulting engineer from the client, or by reason of circumstances which could not reasonably have been foreseen, the consulting engineer shall be paid an additional payment by the client as provided in paragraph 1(3) of Part B calculated in accordance with paragraph 2 of Part B, and also any appropriate reimbursement provided in paragraphs 1 and 3 of this Part for making any necessary modification revision and for any consequential reproduction of documents.

5. Payment When Works Are Damaged Or Destroyed

If at any time before completion of the works any part of the works or any materials, plant or equipment whether incorporated in the works or not shall be damaged or destroyed, the consulting engineer shall be paid an additional payment in respect of any expenses incurred or additional work required by the client to be carried out by the consulting engineer as a result of such damage or destruction as provided in paragraph 1(3) of Part B, the amount of such additional payment to be calculated in accordance with the scale of fees set out in paragraph 2 of Part B, and also any appropriate reimbursements in accordance with paragraphs 1 and 3 of this Part.

6. Payment Following Termination Or Suspension By The Client

(1) In the event of a termination or suspension by the client of the works, the consulting engineer shall be paid the following sums (less the amount of payments previously made to the consulting engineer):-

- (a) a sum deductible from the percentage of work completed up till the time of termination or suspension;
- (b) a disruption charge equal to one sixth of the difference between the sum which would have been payable to the consulting engineer under paragraphs 1(1), 1(2) and 1(3) of Part B but for the termination or suspension, and the sum payable under (a), provided the works have advanced beyond the preliminary stage; and
- (c) amounts due to the consulting engineer under any other paragraphs of Part B.

- (2) In the event that the consulting engineer is required to recommence the works suspended by the client the consulting engineer shall be paid for the performance of his professional services the sum payable to the consulting engineer under paragraph 1(1) or 1(2) of Part B, the payment under paragraph 6(1)(a) and (c) of this Part being treated as payment on account.

Provided that the consulting engineer shall retain as an additional payment the disruption charge referred to in paragraph 6(1)(b) of this Part.

- (3) Where tendering for the works (or any part thereof) is or likely to be delayed for more than nine months or postponed at the request of the client, the consulting engineer shall be paid according to the scale of fees described in paragraph 1(1)(c) of Part B but the cost of works applicable shall be the estimated cost of works (or any relevant part thereof) at the time of completion of design.
- (4) Where works are suspended or postponed after the tenders have been called, the fees payable to the consulting engineer shall be as follows:-
- (a) The preliminary stage, design stage and tender stage -- fees shall be computed on the lowest acceptable tender provided that where no acceptable tender is received the fees shall be computed on the estimate made by the consulting engineer of the cost of the works at the date of calling tenders;
 - (b) Where the works are subsequently resumed and tenders recalled, the fees payable to the consulting engineer shall be as follows:-
 - (i) preliminary stage, design stage and tender stage -- fees as computed in (a);
 - (ii) construction stage -- fees shall be computed on the contract sum of the works at the time of resumption.
- (5) If the consulting engineer shall be required to perform any additional services in connection with the resumption of his professional services in accordance with paragraph 6(2) of this Part the consulting engineer shall be paid in respect of the performance of such additional professional services in accordance, as the case may be, with paragraph 1(3) of Part B or the scale of fees set out in paragraph 2 of Part B and any appropriate reimbursement in accordance with paragraph 3 of this Part.

7. Payment Following Termination By The Consulting Engineer

In the event of a termination by the consulting engineer of his professional services, the consulting engineer shall be entitled to be paid the sums specified in paragraphs 6(1)(a) and (c) of this Part less the amount of payments previously made to the consulting engineer.

APPENDIX A

CLASSIFICATION OF WORKS IN GROUP A (CIVIL/STRUCTURAL ENGINEERING)

Class I

1. Airports with extensive terminal facilities;
2. Water, waste water, and solid/liquid waste treatment and disposal plants;
3. Bridges which are asymmetric or are otherwise complicated;
4. Thermal/nuclear power plants;
5. Large dams or complicated small dams, reservoirs and water towers;
6. Urban and suburban arterial streets;
7. Grade crossing eliminations;
8. Highway and railway tunnels;
9. Pumping stations;
10. Major incinerators;
11. Large intercepting and relief sewers;
12. Marine works and terminal facilities, dry docks, jetties, quays and wharves;
13. Heavy foundations, piling and coffer dams;
14. Large sports stadia, swimming pools, grandstands, marinas and zoos;
15. Large hangars;
16. Major irrigation and drainage structures and large water distribution networks;
17. Oil tanks, refineries and collieries;
18. Off-shore installations, and satellite stations;
19. Underground structures;
20. Fortifications and defence works;
21. Gantries;
22. Silos and tall chimneys;
23. Causeways;
24. Shipyards;
25. Bulk handling installations;
26. Mass rapid transit works; and
27. Major and complicated coastal protection works.

Class II

1. Public and office buildings;
2. Industrial buildings, warehouses, garages, hangars and comparable structures;
3. Bridges and other structures of conventional design;
4. Simple waterfront facilities;
5. Railways;
6. Rural roads JKR 01 standard and private streets;
7. Embankments, flood walls and retaining walls;
8. Small dams and small reservoirs;
9. Sewers and water tunnels (free-air);
10. Storm sewers and drains;
11. Sanitary sewers;
12. Water distribution lines, and hot/cold water services;
13. Irrigation and drainage works, except pumping and major works under Class I;
14. Airports except as classified in Class I works;
15. Transmission and other towers; and
16. Light foundations including piling.

Class III

1. Mass earthworks and site clearing;
2. Dredging reclamation works;
3. Gravity retaining walls and gabions;
4. Subsoil drainage and turfing;
5. Road pavement, parade grounds and hardstands;
6. Roadside furniture;
7. Minor drainage culverts;
8. Residential and shophouse buildings not exceeding 4 storeys in height;
9. Standard substations;
10. Proprietary standard beams, trusses, etc.;
11. Prefabricated structures; and
12. Farm roads and kampong estate roads.

APPENDIX B

CLASSIFICATION OF WORKS IN GROUP B (MECHANICAL/ELECTRICAL SERVICES)

Class I

1. Fire fighting and prevention systems;
2. Air-conditioning and mechanical ventilation systems;
3. Refrigeration and cold stores systems;
4. Lighting, power and electrical distribution systems;
5. Generating plant installations;
6. Water treatment and filtration systems;
7. Stage lighting systems;
8. Design of pressure vessels;
9. Plant and production systems including layout;
10. Pollution control systems;
11. Cable car systems; and
12. Bulk liquid and solid handling storage systems.

Class II


1. Electrical load dispatching and control systems;
2. Abattoir plants;
3. Steam generating systems;
4. Hot and cold water systems;
5. Compressed air systems;
6. Medical vacuum piping;
7. Medical gas services;
8. Cooling water systems;
9. L.P. gas systems;
10. Telephone distribution and intercommunication systems;
11. Lightning protection systems;
12. Electrical no break lighting systems;
13. Stage mechanism;
14. Heating and thermal installations;
15. Electrical substations;
16. Street lighting;
17. Public address systems, personal location and call systems, and radio and T.V. systems;
18. Security systems;
19. Food preparation, cooking, conveying and serving systems;
20. Transmission lines; and
21. Vacuum systems.

Class III

1. Lifts, hoists, dumbwaiters and escalators;
2. Laundry equipment and services;
3. Sterilising and bed pan washing or disposal equipment;
4. Standby generators;
5. Clock installations;
6. X-ray equipment;
7. Pneumatic tube conveyor systems;
8. Conveyors;
9. Solid waste collection and disposal systems;
10. Quarry and mining installations;
11. Surgical lighting; and
12. Lighting fittings.

Made the 20th day of April, 1992

Approved the 13th day of May, 1982



DATO' M. YUSUFF BIN HJ. M. YUNUS,
President,
Board of Engineers



DATUK S. SAMY VELLU,
Minister of Works and Public Utilities

