

Introduction

This document contains guidelines and recommended minimum fees for architectural and professional engineering and geoscience services. It was prepared for, and adopted by, the Councils of the Newfoundland Association of Architects (NAA) and the Association of Professional Engineers and Geoscientists of Newfoundland (APEGN). The task force appointed by APEGN, to prepare this document consisted of suppliers and purchasers of consulting services. Members included representatives of architects, consulting engineers, geoscientists, municipalities, and owners/clients.

The purpose of this document, is in the first instance, to present in the interest of the public a set of parameters to meet the needs of society as it relates to the acquisition of architectural and professional engineering and geoscience services. The document is also a guide for both the clients of architects, engineers, and geoscientists, and for these professionals themselves.

The fee schedules provide a framework within which appropriate fees for the work of these consultants can be determined. This guideline presents recommended minimum fees, which reflect equitable compensation to a consultant providing competent and responsible services to a client. The fees are computed based on a standard of care that a consultant is expected to provide both to a client and to the public.

It is recommended that the scope of services required be determined by the client and the consultant, and formalized by an appropriate agreement. This document is intended in part to assist in the development of a fair contractual arrangement between parties that reflects the realistic cost of supplying consulting services.

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01.00 GENERAL

Selecting a consultant is a very significant step that a client takes when undertaking a project. It is often the client's first step. The client may choose to select a consultant based on direct appointment or, in the alternative, by a formal selection procedure. A formal selection procedure is frequently a process used by clients responsible for the expenditure of public funds.

01.01 Consultant Defined

A consultant as referred to in this document is a permit holder of the Association of Professional Engineers and Geoscientists of Newfoundland (APEGN) or one that is licensed by the Newfoundland Association of Architects (NAA), in the case of building projects.

01.02 Selecting a Consultant

When selecting consultants, clients should refer to APEGN's publication "Selection by Ability" and NAA's publication "Selecting an Architect", as they apply for project type.

Selection of a consultant based on fee considerations as a primary parameter incurs the risk of providing the consultant with insufficient funds to research adequately all potential and practical solutions during project planning and during project execution.

With respect to professional engineering and geoscience services, clients should note that professional engineers and geoscientists are accountable under the Professional Engineers and Geoscientists Act of Newfoundland for providing competent consulting services and for compliance with a code of ethics. Similarly, architects are accountable under the Newfoundland Architects Act.

01.03 Scope of Intended Work

It is recommended, and considered imperative, that clients define their objectives and thus the scope of the work intended before initiating the process of selecting a consultant. This process is of particular importance if the client intends selection by evaluation of proposals under a formal selection procedure.

In circumstances where clients are unable to provide a general description of the work's nature it is recommended that they initially engage an experienced consultant familiar with the applicable field of expertise to assist in defining the scope of the work.

Upon definition of the scope of the work, consultants are better able to provide realistically accurate estimates of the cost of consulting services.

01.04 Contracts and Agreements

Clients and consultants should enter into a written contract that incorporates, as a minimum, the scope of the assignment, the schedule of the assignment's work execution, and the fee basis inclusive of payment conditions. Typical agreements are available from the offices of NAA or APEGN. The consultant should disclose to the client whether coverage for professional liability insurance is included in the fee.

02.00 TRADITIONAL FEE BASIS

Traditional fees can be calculated using (a) Fee Basis “A” - Time Based; (b) Fee Basis “B” - Percentage of Construction Cost; or (c) Fee Basis “C” - Fixed. A description of these three methods follows:

02.01 Fee Basis “A” - Time Based

02.01.01 General

The time-based method of determining fees can be applicable to all stages of Basic Services outlined in Section 02.02.03. The time-based method is best suited to cases where the amount of time required on any service cannot be realistically determined and is thus unknown. Time based fees are billed based on the number of hours spent on the work multiplied by the hourly billing rates that apply to staff persons employed on the work by the consultant.

Traditionally there have been two methods of determining hourly rates for professional services. These methods are the Flat Rate Method and the Multiplier Method, both of which are described below.

02.01.02 Flat Rate Method

Billing rates for professional staff under the flat rate method are calculated and issued annually by NAA and APEGN. In the case of APEGN, these flat rates are recommended minimum hourly rates and are calculated based on salary surveys carried out by APEGN.

02.01.03 Multiplier Method

Billing rates for staff persons under the Multiplier Method are determined by multiplying the person’s payroll cost by a payroll cost factor. These terms are defined consecutively as follows:

Payroll Cost (Hourly)

The hourly payroll cost is the sum of an individual’s annual salary and an individual’s annual employee benefits divided by the total of the individual’s annual normal working hours.

The employee benefits portion of the payroll cost is the employer’s portion of these costs, such as, group life and disability insurance, health, dental and medical benefits, professional liability insurance, legislated payroll costs, workers compensation, payroll taxes, employment insurance and other such costs that prevail from time to time. Payroll cost excludes bonuses or profit sharing amounts paid to the employee.

For purposes of this document the annual normal working hours is defined as 1650 hours, which is calculated on the basis of a 37.5 hour working week for 52 weeks a year (1950 hrs.), less 300 hours for vacation, professional development time, and sick leave.

Payroll Cost Factor

The purpose of the Payroll Cost Factor is to cover all overhead costs and profit. Overhead costs are costs incurred by an employer that arise from the employer’s operation and typically include office accommodation, furnishings, business taxes, heat, light, equipment and maintenance along with various other sundry expenses.

The recommended Payroll Cost Factors are listed below.

Type and Extent of Service	Payroll Cost Factor
Intermittent time demands, regardless of project size	2.50
Less than 1000 hours	2.50
More than 1000 hours	2.25
Staff full-time resident at client facility	1.80

A sample calculation of an hourly-billing rate calculated based on the Multiplier Method and an assumed annual salary is shown below.

Sample Calculation of Hourly Billing Rate			
Basic annual salary of staff person	=	\$60,000.00	
Basic hourly salary \$60,000 ÷ 1650 hours	=	\$36.36	[A]
Hourly payroll costs @ 25% (workers compensation, liability, insurance, etc., expressed as a percentage of basic hourly salary)	=	\$9.09	[B]
Total hourly payroll cost [A] + [B]	=	\$45.45	[C]
Payroll cost factor	=	2.5	[D]
Hourly billable rate [C] x [D]	=	\$113.63	

In the case of this example calculation, the applicable billing rate for the staff person should be \$113.63 per hour.

It is important to note that the above calculation is a sample calculation only, using an assumed salary, an assumed hourly payroll cost of 25% of hourly salary, and a payroll cost factor of 2.5. Basic salaries as well as payroll costs will vary from company to company. When using the Multiplier Method of determining billing rates, the client and the consultant are encouraged to agree upon payroll costs and payroll cost factors prior to commencement of the consultant's work.

02.02 Fee Basis "B" - Percentage of Construction Cost

02.02.01 General

Experience has shown that it is difficult for a consultant to predict its costs accurately as a percentage of construction costs. However, this method of determining fees for professional services may be used on projects where the professional service requirements have been established over many and frequently repeated similar projects, and when the scope of the work has been well defined.

02.02.02 Percentage Fees

Percentage fees have been established within the Province of Newfoundland and Labrador for various types of projects. Recommended minimum percentage fees for building projects are presented in Table 1 on page 12. Table 2 on page 15 provides a separate fee schedule for General Engineering Projects.

02.02.03 Basic Services

Consultants acting as prime consultants, whether they be architects or engineers, provide the typical services of architectural, and civil, structural, mechanical and electrical engineering, as well as the co-ordination of these sub-consultant disciplines.

There are five stages in the delivery of Basic Services. Below, these five stages are described, including the percentage of work effort estimated to be applicable to each stage.

Stage 1: Concept Design **20%**

The concept design process outlines and reports on the proposed project (or alternative(s) under evaluation), taking into consideration the client's program needs, economy, durability, capital cost and requirements of relevant codes and authorities. Concept design should address the following issues:

- Establish a clear understanding of the client's requirements and provide commentary on how it is to be achieved;
- Identify and resolve fire and life safety and code issues;
- Identify specific design criteria for the various systems; and
- Identify anticipated capital costs on a preliminary basis.

Stage 2: Design Development **20%**

In the design development stage, final design solutions become thoroughly defined and documented for acceptance by the client as meeting the client's program requirements, the client's budget, long term maintenance objectives and the client's unique design criteria, where provided. The consultant should not be expected to explore an unreasonable number of potential design solutions.

The consultant is responsible for co-ordinating and preparing the contents of a final design report to ensure co-ordination of design solutions, to integrate systems into a viable and effective project, and to provide an understandable presentation to non-technical individuals.

The final design report should incorporate:

- The systems description and operating principles, including design criteria;
- Design development drawings for each design discipline;
- A full listing of expected working drawings;
- A full listing of technical specification sections to be used;
- A listing of furnishings, and client dedicated equipment to be procured;
- Product and equipment literature respecting major components to be used in the project for client acceptance;
- A project cost plan in a format agreeable to the client; and
- A project implementation plan/schedule in a format agreeable to the client.

Stage 3: Construction Contract Documents **30%**

Upon approval of the client of the previous stage, the contract document stage involves preparation of detailed drawings, finalization of equipment selection, specifications, and assembly of construction documents required for tendering. The consultant is responsible for design quality assurance to ensure that accurate, co-ordinated, and complete contract documents are prepared.

The preparation of a pre-tender estimate of the value of construction is also carried out by the consultant during this stage.

Stage 4: Tendering and Construction Contract Award **5%**

During the tendering and contract award stage, the consultant normally provides the following Basic Services:

- Preparation of tender call, arranging for advertising the tender and the distribution of tender documents to contractors;
- Preparation and distribution of contract addenda, if any, during the tender period;
- Review and evaluation of tenders submitted and recommendations to the client on contractor selection; and
- Preparation of the final contract documents for distribution and execution by the client and selected contractor.

Stage 5: Construction Contract Administration **25%**

Basic Services provided in administering the construction contract and providing general review services may include, but are not necessarily limited to the following:

- Advising the contractor or client on interpreting contract documents, and issuing supplementary details and instructions as required;
- Reviewing shop drawings for general compliance with design requirements and contract documents;
- Reviewing contractor's progress claims, including the validity of additions or deletions, and issuing progress certificates and change orders for the client's acceptance;
- Periodically (monthly) visiting the site to assess generally the progress of the work, the work's conformity with the contract documents, and attending regular site meetings;
- Monthly reports to the client on the work's progress;
- Periodically reviewing the record drawings kept by the contractor and advising the client on their adequacy;
- Carrying out a final review at the conclusion of the construction contract and issuing the substantial completion certificate; and
- Handing over to the client project record drawings in a format required by the client.

The foregoing services are distinct and separate from the services provided by a consultant's resident field personnel and should not be considered as an alternative or substitute for resident services on either conventional or design/build projects.

The stage descriptions of Basic Services provided above reflect the logic of the planning process. The client's review and approval is recommended at each stage. Additional relevant information can be found in either NAA's "Canadian Handbook of Practise" or APEGN's, "Guidelines for Engineering Practice" applicable to each professional engineering discipline (e.g. structural, mechanical, electrical, municipal, etc.).

02.02.04 Architectural and Engineering Building Projects

For recommended minimum percentage fees for Basic Services for building projects refer to Table 1, page 12. Fees should be calculated based on the building's construction cost and the applicable building category. Percentage fees shown are for all five stages of Basic Services.

Category 1 Buildings

- Low complexity industrial buildings such as warehouses, storage buildings, and agriculture buildings; and
- Demolition.

Category 2 Buildings

- Open grandstands;
- Parking garages; and
- Multi-unit residential buildings such as residences with minor support facilities; apartment houses and apartment hotels; multiple housing such as duplexes and row housing; group homes and boarding houses; and hostels with non-supportive care.

Category 3 Buildings

- Office and administrative buildings, without tenant improvements;
- Educational facilities such as elementary schools;
- Assembly buildings such as convention and exhibition halls; band shells; cinemas; community centres; and drill halls;
- Arenas and covered rinks;
- Multi-residential buildings such as residences with independent support facilities; and hostels with supportive facilities;
- Volunteer fire halls;
- Medium complexity industrial buildings such as cold storage; printing; bakery; laundry; primary manufacturing; service and maintenance facilities; freight terminals; and aircraft storage hangers;
- Summer camps;
- Day care centres;
- Motels; and
- Retail stores, shops, strip malls, not including tenant layouts.

Category 4 Buildings

- Educational buildings such as senior high schools; junior high schools; vocational and trade schools; colleges of applied arts and technology; drama, music and art schools; and non-technical university buildings consisting of classrooms;
- Assembly buildings such as stadiums; cemetery chapels; athletic and recreational facilities; town, country and sport clubs; ground passenger terminals; and churches of all denominations;
- High complexity industrial buildings such as breweries and bottling plants; packing plants; heating plants; secondary manufacturing; mail processing facilities; aircraft maintenance hangers; and armouries;
- Business and personal services buildings such as administrative office buildings including tenant improvements; banks and similar financial institutions; stock exchanges; town halls; and customs and immigration buildings;
- Fire stations with sleeping accommodations;
- Police stations;
- Hotels; and
- Shopping centres but not including tenant layouts.

Category 5 Buildings

- Assembly buildings such as mausoleums and crematoria; funeral homes and undertaking establishments; parliament and legislative buildings; court houses; air and marine passenger buildings; swimming pools; and restaurant, cocktail lounges and bars;
- Communication buildings such as telephone and telegraph uses; radio uses; television buildings and studios; computer centres; satellite control centres; military centres; and control towers;
- Technical educational buildings at universities and colleges such as buildings to house science, material research, dental schools, zoology research, laboratories, and psychology research; research and data centres; and observatories;
- Exhibition and entertainment buildings such as aquariums; zoological and botanical gardens; planetariums; theatres and opera houses; environmentally controlled museums, art galleries, and amusement parks;
- Health care facilities such as convalescent homes; geriatric chronic care facilities; and clinics and health centres;
- City halls;
- Mints and treasuries;
- Jails, penitentiaries, and correctional institutions; and
- Monasteries and convents.

Category 6 Buildings

- Hospital and acute care facilities such as general, teaching, and psychiatric facilities.

Category 7 Buildings

- Consulates, legations, and embassies located in Canada;
- Custom residential buildings such as rectories separate from church buildings; private residences; and fraternity houses; and
- Tenant layouts when not part of the main contract.

Category 8 Projects

- Renovations to category 1 to 7 buildings

Table 1 Schedule of Minimum Percentage Fees on Building Projects (Cost of construction does not include the HST when calculating the fee.)									
Cost of Construction Division	Discipline	Building Categories							
		1	2	3	4	5	6	7	8
Less than \$0.4 M	All disciplines	Charged at Per Diem Rates							
\$0.4 M and greater but less than \$0.7M	Architectural	7.63	9.29	10.28	10.70	12.54	13.48	14.01	
	Structural	7.48	7.47	8.07	8.56	8.70	9.18	9.54	
	M & E	8.58	9.23	9.88	10.61	12.04	13.19	13.69	
	Civil	7.63	7.73	9.05	9.05	10.51	11.09	11.52	
	Total Design Fee	8.62	9.63	10.57	11.09	12.59	13.54	14.06	
\$0.7 M and greater but less than \$1.0M	Architectural	7.51	8.72	9.61	10.06	11.63	12.54	13.31	
	Structural	7.25	7.37	7.75	8.14	8.54	8.83	9.36	
	M & E	8.17	8.64	9.27	9.74	11.42	12.19	12.92	
	Civil	7.25	7.65	8.53	8.67	8.99	10.87	11.54	
	Total Design Fee	8.35	9.16	9.95	10.40	11.76	12.70	13.47	
\$1.0M and greater but less than \$1.5M	Architectural	7.27	8.29	9.12	9.32	11.25	12.07	12.88	
	Structural	6.89	7.44	7.77	8.09	8.10	8.70	9.24	
	M & E	7.82	8.18	9.34	10.28	11.09	11.82	12.54	
	Civil	6.89	7.82	8.30	8.21	8.42	9.44	10.01	
	Total Design Fee	8.03	8.85	9.71	10.12	11.32	12.18	12.96	
\$1.5M or greater but less than \$2.0M	Architectural	7.19	7.63	8.56	9.19	10.71	11.44	12.32	
	Structural	6.66	7.38	7.71	7.87	7.87	8.70	9.33	
	M & E	7.21	8.23	8.84	9.24	10.77	11.45	11.89	
	Civil	6.66	7.47	8.25	8.35	8.25	9.33	9.99	
	Total Design Fee	7.74	8.48	9.27	9.74	10.90	11.76	12.52	
\$2.0M and greater but less than \$3.0M	Architectural	6.91	7.54	8.23	8.68	10.44	10.93	12.20	
	Structural	6.43	6.88	7.48	7.59	7.48	8.35	8.81	
	M & E	6.93	7.59	8.35	9.03	10.42	10.86	10.95	
	Civil	6.23	7.11	7.64	7.88	7.96	8.96	9.49	
	Total Design Fee	7.42	8.12	8.85	9.32	10.55	11.22	12.03	
\$3.0M and greater but less than \$5.0M	Architectural	6.61	6.94	7.96	8.28	9.49	10.37	11.31	
	Structural	6.21	6.89	7.29	7.46	7.57	8.10	8.64	
	M & E	6.65	7.49	7.73	8.30	9.94	10.27	10.76	
	Civil	5.83	6.98	7.46	7.90	8.04	8.73	9.44	
	Total Design Fee	7.11	7.79	8.48	8.89	9.98	10.70	11.49	
\$5.0M and greater but less than \$8.0M	Architectural	6.17	6.48	7.63	7.82	8.99	10.02	10.84	
	Structural	5.93	6.85	7.02	7.26	7.35	7.95	8.59	
	M & E	6.44	6.99	7.16	8.04	9.57	9.88	10.31	
	Civil	5.93	6.91	7.02	7.59	8.12	8.68	9.25	
	Total Design Fee	6.78	7.40	8.06	8.52	9.58	10.38	11.11	
\$8.0M and greater but less than \$12.0M	Architectural	5.83	6.30	7.30	7.64	8.48	9.68	10.35	
	Structural	5.64	6.42	6.75	6.96	7.64	7.87	8.34	
	M & E	6.11	6.67	6.78	7.75	9.34	9.30	9.91	
	Civil	6.43	6.38	6.75	7.29	7.96	8.47	8.86	
	Total Design Fee	6.52	7.07	7.70	8.24	9.33	10.01	10.66	
\$12.0M and greater but less than \$17.0M	Architectural	5.65	6.12	7.46	7.66	8.30	9.47	10.15	
	Structural	5.33	6.05	6.23	6.91	7.14	7.43	7.63	
	M & E	5.93	6.39	6.56	7.46	8.85	8.85	9.24	
	Civil	5.33	6.05	6.69	7.22	7.64	7.91	8.30	
	Total Design Fee	6.19	6.78	7.60	8.15	8.95	9.63	10.16	
\$17.0M and greater but less than \$25.0M	Architectural	5.65	6.20	7.13	7.46	8.12	9.30	9.78	
	Structural	5.05	5.87	5.89	6.34	6.87	6.94	7.44	
	M & E	5.02	5.38	5.81	6.72	7.82	8.26	8.86	
	Civil	5.05	5.87	6.22	6.72	7.82	7.54	8.02	
	Total Design Fee	5.84	6.48	7.10	7.68	8.54	9.23	9.80	
\$25.0M & greater	All disciplines	To be negotiated							

Increase each discipline by 30% of the Fee shown for that applicable category of building.

Notes Pertaining to the Use of Table 1

- Where the cost of construction is near the lower limit of one of the cost divisions, the fee shall not be less than that which would have been received at the upper limit of the previous cost division.
- The calculation of the prime consultant fee is the difference between the total design fee and the fees for the disciplines listed.
- The Prime Consultant's fee like that of subconsultant's applies to the cost of the work designed by the Prime Consultant including coordination of all subconsultant disciplines.
- The percentage fees identified apply to the construction cost of that work designed by each consulting discipline.
- The construction cost applicable to each discipline's fee should be agreed between the prime consultant and each discipline prior to issuance of an initial contract progress claim to a contractor(s).

02.02.05 *Engineering & Geoscience Projects Other Than Building Projects*

The practice of professional engineering and geosciences is broad and varied in its extent.

In all cases of general engineering and geoscience projects, the Fee Basis A method of determining billing rates may apply. In the case of geoscience projects only fee basis A, C or Innovative fees apply.

Fee Basis "B" - Percentage of Construction Cost is also applicable to other than building projects for stages 3 and 4. Table 2 outlines the minimum percentage fees for stages 3 and 4 and for the levels of complexity described below and identified in Table 2. The percentage fee for services rendered can be determined from Table 2 by selecting an appropriate cost of construction range and the appropriate level of complexity.

For stages of service other than 3 and 4 and for more complex engineering projects Fee Basis A – Time Based, Fee Basis C – Fixed or Innovative fees should apply.

The levels of complexity that are to be applied for purposes of use of Table 2 are described as follows:

Basic Engineering Projects

Basic Projects are those requiring only basic engineering disciplines. Examples of these are as follows:

- Subdivision services;
- Trunk and supply water mains;
- Storm and sanitary sewers;
- Water, gas and oil distribution systems;
- Power distribution lines and substations up to 25 KV;
- Pipelines and railroads;

- Irrigation and drainage systems;
- Roads, highways, parking lots and landing fields;
- Open pit mines, quarries and tailings disposal;
- Simple incinerators and incineration systems such as packaged and natural draft types; and
- Simple wharves and breakwaters.

Complex I Engineering Projects

Complex I Projects are those requiring a high degree of detailed engineering or the co-ordination of several technical disciplines. Examples of these are as follows:

- Those listed under Basic Projects where the nature of the project is such that the design assignment requires more than normal consideration;
- Bridges and interchanges;
- Dams and hydraulic structures;
- Tunnels and mines;
- Water storage and facilities;
- Waterfront improvement and terminal facilities;
- Water intakes and sanitary sewer outfalls of above average complexity;
- Large interceptor and relief sewers;
- Urban and suburban arterial streets;
- High voltage electrical transmission lines;
- Wharves and breakwaters of above average complexity; and
- Simple packaged water and sewage treatment plants.

Complex II Engineering Projects

Complex II Projects are those of above average complexity involving technology that is more specialized, a higher degree of detailed engineering and the coordination of several technical disciplines. Examples of those are as follows:

- Treatment plants for water, sewage and industrial waste when not part of a building project;
- Incinerators and incineration systems other than the simple type covered under the Basic Fee, which is not part of a building project;
- Marine pipelines; and
- Offshore structures.

Table 2
Schedule of Minimum Fees for General Engineering Projects
 (Cost of construction does not include the HST when calculating the fee.)

Cost of Construction Division	Basic % Fee	Complex 1 % Fee	Complex 2 % Fee
Less than \$0.4 M	Charged at Per Diem Rates		
\$0.4M and greater but less than \$0.5M	7.08%	8.01%	9.00%
\$0.5M and greater but less than \$0.75M	6.79%	7.67%	8.55%
\$0.75M and greater but less than \$1.0M	6.46%	7.37%	8.23%
\$1.0M and greater but less than \$2.0M	5.90%	7.04%	7.81%
\$2.0M or greater but less than \$3.0M	5.60%	6.78%	7.51%
\$3.0M and greater but less than \$4.0M	5.46%	6.61%	7.34%
\$4.0M and greater but less than \$5.0M	5.37%	6.46%	7.20%
\$5.0M and greater but less than \$7.5M	5.19%	6.23%	6.96%
\$7.5M and greater but less than \$10.0M	5.05%	5.94%	6.70%
\$10.0M and greater	To be negotiated		

Notes Pertaining to the Use of Table 2

- The percentage fee is applied to the cost of construction, where the cost of construction does not include the HST. With respect to the HST that applies to the design fee, this has not been included in the fee table.
- Where the cost of construction is near the lower limit of one of the cost divisions, the fee shall not be less than which would have been received at the upper limit of the previous cost division.

02.02.06 Fees for Additional Services

There are significant fees in addition to Basic Services fees on most projects, which the client needs to consider in establishing the total project budget. These services are paid for by either Fee Basis A - Time Basis or Fee Basis C - Fixed. Many variables will influence the final cost and many will result in additional fees. Therefore, the following guidelines are provided under this Section in order to assist both the consultant and the client to establish reasonable remuneration for additional consulting services beyond Basic Services. **(Percentages shown are for estimating purposes only).**

Pre-Design Services

On most projects, there are varieties of pre-design activities that need to be performed. Based on historical experience **for buildings** the percentage fee for these pre-design services have ranged between 0.60% and 0.65% of the construction cost.

The following activity costs are included under this estimated percentage fee:

- Review of the client's functional program;
- Establishment of the capital project budget in consultation with the client ;
- Performance of non-physical site investigations respecting existing site infrastructure locations and conditions (e.g. water, sewage, storm drainage, power);
- Define, co-ordinate and manage site investigations performed by other speciality sub-consultants (e.g. geotechnical, topographical and legal surveys) on behalf of the client;
- Performance of and report on site visits to comparable facilities being evaluated for the project under consideration; and
- Preparation of an estimated project delivery schedule.

The following physical activities are excluded from percentage fees or fixed fees for pre-design services:

- Site surveys to depict existing conditions for design and construction purposes; and
- Geotechnical investigation to indicate subsurface conditions.

Commissioning

A comprehensive commissioning program is recommended for all major projects to ensure realization of quality control during construction, and to verify that systems will perform in accordance with the design intent. A commissioning program is estimated to add approximately 0.70% to the fee on construction cost, assuming the consulting team performs the following activities:

- Provision of a commissioning co-ordinator;
- Compilation of commissioning manuals for all systems (e.g. site, architectural, structural, mechanical and electrical) at commencement of construction;
- Client and contractor co-ordination;

- System start up and documentation;
- Field commissioning and training in accordance with the commissioning plan;
- Certification of system release for use and operation; and
- Travel time except for remote locations, e.g. coastal Labrador.

Resident Services During Project Implementation

Services during project implementation are considered to be “resident” when all office facilities required by staff at the site are provided by the client at no cost to the consultant and when staff assigned are on site full time for a significant and continuous work period as agreed between the parties.

These resident activities may include but are not necessarily limited to:

- Providing reference surveys to the contractor, and where necessary, checking the contractor’s surveys;
- Determining that the contractor’s work satisfies the intent of the design and generally conforms to the plans and specifications;
- Investigating, reporting and advising on unusual circumstances that may arise during project implementation;
- Carrying out final inspection at the conclusion of the work including any elements of commissioning agreed to as part of the commissioning plan;
- Maintaining sufficient data to outline the current progress of work; and
- Assisting in certification of contractor’s requests for payment, change orders, etc.

The cost of resident services will vary considerably based on the nature and the duration of the work. For estimating purposes, the client may assume a cost range of between \$10,000 and \$13,000 per month for a senior non-professional, which would include a reasonable allowance for living expenses.

Construction Phase Management Services

Where the project implementation phase requires the application of multiple phased construction and procurement contracts, additional construction management services may be advisable.

These services may include, but are not limited to the following:

- Contract strategy, administration and expediting;
- Development and co-ordinating of a phasing plan, which may include phased occupancy of the new facility;
- Site safety and labour relations;
- Management of the field office and temporary facilities;
- Monthly progress, and trend monitoring and reporting; and
- Cost planning, control and reporting including cash flow forecasts on a contract basis and overall project basis. These activities require detailed assessment of costs and schedules.

The cost of construction phase management services need to be evaluated on a project specific basis taking into account the level and frequency of reporting, the number of construction/procurement contracts to be managed, the extent of overlap between contracts, and the duration and intensity of the work.

As a guideline and for estimating purposes only the client should anticipate a minimum of 1.5% - 2.5% of the construction budget for construction phase management services excluding resident services.

Services After Construction Completion

Consultant services provided after substantial completion is achieved and certified is considered an additional service. These services typically include, but are not limited to the following:

- Carrying out total performance inspection(s) and issuing a certificate of total performance;
- Assisting the client in trouble shooting and correcting system malfunctions, except those arising from lack of routine maintenance, and servicing; and
- Conducting and reporting on a warranty inspection, generally within 10 months after the issuance of the substantial completion certificate

As a guideline and for estimating purposes only the client should anticipate in the range of 0.5% to 0.7% of the construction cost for this service. The client should be aware that this allocation could be considered reasonable compensation only in the event that the Contractor performs responsibilities under the construction contract in a timely and proficient manner. Should the contractor fail to perform, the additional level of effort of the consultant to attain the necessary performance should be compensated under Fee Basis A - Time Based.

Allowance for Other Specialists Consultants

Geotechnical and surveying services are not covered by the Basic Service fees. In addition other specialists may be required on complex projects such as wind and snow specialists, fire protection engineering specialists, acoustic consultants, environmental consultants, interior designers, kitchen consultants, building envelope consultants, etc.

The client should set aside an allowance for other specialist consultants in developing an overall budget for these consulting services.

Changes During Progress of a Project

Fees for making changes during the progress of a project should be based on hourly rates or as otherwise negotiated between the consultant and client. Examples of changes include a client wishing to change work that has already been approved; required revisions due to changes to or interpretations of codes, laws or regulations after contract documents have been prepared; and revisions due to other causes not solely within a consultant's control.

02.02.07 Construction Cost for the Purposes of Calculating Fees

Construction cost of the work means the contract price(s) of all elements of the project designed or specified by the consultant including the general contractor's overheads and profits, but does not include HST.

Construction cost does not include the consultant's fees and expenses, the cost of land, or other costs that are solely the client's responsibility.

Construction cost does not include the cost of machinery or equipment related to the specific use of a building, such as machinery or equipment required for production, manufacturing, treatment or processing, where the consultant is not required to design it, specify it, or co-ordinate its installation.

In the event that labour and/or materials are furnished by the client below market cost, or when used materials are reused, construction cost for the purpose of establishing the fee should be calculated as if the necessary materials and labour to complete the work are new or paid for at existing market rates.

Where a finite construction budget has been determined at the onset of the design stage, the fee shall be based on that budget plus a contingency reserve for changes occurring during both the design and construction stages of the project. Where there is no finite construction budget, the fee shall be based on the budget determined at each of the five stages of design/construction.

02.02.08 Typical Fee Examples

Some examples are provided to assist the client in developing an appropriate budget allocation for consultant services. It is understood that actual costs will be unique to each building project due to a variety of factors and consulting services to be provided.

Example 1 - Public Elementary/Junior High School

- Construction cost - \$4,000,000, HST extra.
- Construction contract administration.
- Resident services for 12 months.
- Facility commissioning and training required.

Basic Services Fee (Table 1, Category 3)	8.48%
Pre-design Services	0.65%
Commissioning Services	0.70%
Resident Services (\$10,000/mo. For 12 mos.)	3.00%
Services after construction completion	0.50%
Allowance for other consultants	0.50%

Example 2 - Health Care Facility (Acute Care)

- Construction cost - \$8,500,000, HST extra.
- Construction management services.
- Multiple construction contracts.
- Resident services for 16 months.
- Facility commissioning and training required.

Basic Services Fee (Table 1, Category 6)	10.01%
Pre-design Services	0.60%
Commissioning Services	0.70%
Resident Services (\$13,000/mo. For 16 mos.)	2.60%
Construction Management Services	2.00%
Services after Construction Completion	0.70%
Allowance for other / specialist consultants	1.00%

Example 3 - Office Building (tenant improvements not included)

- Construction cost - \$3,500,000, HST extra.
- General construction contract.
- Resident supervision 10 months.
- Facility commissioning services.

Basic Services Fee (Table 1, Category 3)	8.48%
Pre-design services	0.60%
Commissioning Services	0.70%
Resident Services (\$12,000/mo. For 10 mos.)	3.40%
Services after construction completion	0.60%
Allowance for other Consultants	0.50%

Example 4 – Building Site Development and Services Project

- Construction cost - \$700,000, HST extra.
- General construction contract.
- General contract administration – Fee Basis “A” - Time Based.
- Resident services for 3 months.
- No facility commissioning and training required.

Design Services Fee (Table 2, Basic)	6.79%
Pre-Design	0.60%
Contract Administration	2.20%
Resident Services (\$11,000/mo. For 3 mos.)	4.70%
Services after Construction Completion	0.50%
Allowance for other Consultants	1.00%

02.03 Fee Basis “C” - Fixed

This method of fee determination applies only to projects and stages of service where the scope of work is clearly defined and where consulting services will be provided under known conditions and schedules. Fixed fees for assignments should be negotiated following the consultant’s preparation of a comprehensive estimate of the consulting hours and expenses. If the scope of work and construction schedule can be defined only in terms of targets and objectives, the fee developed should be considered only as a consulting budget, until information that is more specific is developed. Fee Basis “C” may be applicable to all stages of design and contract administration, but will most likely apply mainly to Stages 3, 4, and 5.

A detailed agreement, defining the services to be provided, together with all categories of expenses included in the fixed fee, is essential. The agreement should cover the work schedule, time limits, inflation factors, and other identifiable items such as reimbursable expenses (refer to Section 5, page 26 - Reimbursable Expenses). The agreement should also state how changes in any of these areas would be compensated for after the fixed fee has been established.

3.00 INNOVATIVE OR ALTERNATIVE FEE BASIS

03.01 Introduction

In response to a changing marketplace and client(s) needs for varied project delivery approaches, several innovative alternatives and variations to the historical time-based, fixed fee, or percentage of construction cost fee basis, have developed. However, it is imperative that all contracts entered into by consultants be fair and equitable to the consultant, while providing competent and responsible professional services to the client. Total compensation should reflect the complexity of the work, the expertise of the consultant and the level of effort required in the work performance. It should be noted that contracts based on innovative or alternative fee basis may be more suited for repeat or long-standing clients, and such contracts are usually negotiated with the client after the consultant selection.

Examples of innovative or alternative fee basis include:

- Value-added: usually determined as a percentage of the projected or perceived project savings due to consultant innovation
- Profit sharing: an agreed percentage of profits, either estimated or long term actual
- Equity participation: where the consultant participates financially in the project through contribution of services or direct investment
- Performance-based: a two-tiered payment schedule to the consultant in the form of basic payment for design services, plus a bonus for predetermined tangible results

Comments on the applicability, advantages and disadvantages of each of these innovative fee basis are presented in the following applicable sections. In the final analysis, however, the scope of work and compensation for professional services are a matter of negotiation and contract between the consultant and client.

03.02 Value-Added

This fee structure is best suited to pre-design services but could be applied at any design stage, if there is a clear basis for normal expectations of the client against which innovative approaches can be judged. It requires a good and effective consultant/client relationship and is best suited to long-term repeat client projects. It has the potential to exceed the basic fee for detailed design services; for example, a consultant's innovative thinking before commencing basic design can introduce major value to the client in the form of significant project cost reductions. This valued-added fee is usually determined as a percentage of the projected, or perceived, project cost savings as referred to above.

- Advantages – Good potential for significant improvements on specialized assignments; encourages innovative thinking by consultants.
- Disadvantages – Needs a method of agreeing on intangible gains over a base cost; high financial risk for a consultant if unsuccessful.

03.03 Profit Sharing

This fee structure is appropriate for consultants who are in a position to adequately assess the risks associated with the project. It can be applied to first-time clients or repeat clients, and is simply calculated as an agreed percentage of profits, either estimated or long-term actual. It requires careful definition of what constitutes “profit” and the nature of the accounting process, to avoid later disputes.

- Advantages – Encourages an increased consulting emphasis on total project benefit; good potential for consultants with sufficient financial backing to engage in such business arrangements; develops good client/consultant relationships, since success depends on team/project results.
- Disadvantages – Consultants require solid financial resources to finance operations during project design and construction; high financial risk for consultants, relating not only to personal performance but also to the calibre of project partners, remuneration depends on the performance of others on the team.

03.04 Equity Participation

This fee structure is very similar to profit sharing, except that consultants participate financially in the project, either through contribution of services or direct investment.

- Advantages – Encourages an increased consulting emphasis on total project benefit; introduces and encourages entrepreneurship; good long-term potential if project is successful; develops good client/consultant relationship
- Disadvantages – Consulting firms generally do not have significant equity capital to participate in projects in this manner; consultants require venture capital resources for investment, as well as for ongoing operations; high financial risk for consultants, because payment depends not only on personal performance, but also on the calibre of partners; payback period is long-term with increased chance of changing financial conditions.

03.05 Performance-Based

This fee structure involves a two-tiered payment schedule to the consultant, comprising basic payment for design services, plus a bonus for predetermined tangible results, e.g. completion ahead of schedule, shorter approval times, lower construction costs, lower operation and maintenance costs, etc. In the same sense that bonuses are developed, penalties may also be applied. It differs from profit sharing/equity participation in that the entire remuneration does not necessarily depend on overall project success, but on meeting or exceeding defined goals and performance.

- Advantages – encourages clients to define performance priorities; significant profit potential for consultants in return for optimum performance; high incentive for consultants to achieve defined performance objectives; promotes innovative thinking by consultants.
- Disadvantages – tends to downgrade the basic fee in favour of increased bonus/penalty arrangements; requires predetermined goals to be accurately identified, to reduce future client/consultant disputes.

04.00 FEES FOR SPECIAL SERVICES AND CONDITIONS

For the special services and conditions outlined below, consultants and clients should mutually determine the appropriate fee basis to be used.

04.01 Extra Work

Services required beyond the agreed scope of assignment (regardless of the original basis of fee) should be negotiated on Fee Basis “A”- Timed Based. If the extra work can be defined adequately, Fee Basis “C” - Fixed may be used.

04.02 Reuse of Drawings and Specifications

The design represented by drawings and specifications prepared and stamped under the supervision and control of a consultant is the consultant’s responsibility.

Fees for the use of the design by the original client, as described in this guideline, covers only one project. All plans, sketches, drawings, graphic representations and specifications prepared by the consultant are instruments of service for carrying out the project. The consultant retains copyright for such instruments of service, which may not be used for any other project without the consultant’s written consent.

Fee Basis “A” should be used for review of and any modifications to a design, to accommodate different conditions encountered on a second project.

Fees to cover professional responsibility resulting from second and subsequent reuse of a design should be the subject of negotiation for each reuse. Fee Basis “C” should be used to reflect the complexity of the design and the exposure to risk that arises from its reuse. Fifty per cent of the fee is normally appropriate for the first reuse, 25 to 50 per cent for second and subsequent reuses.

04.03 Delays

There are circumstances where a delay, causing an increase in the cost of services provided, is beyond the consultant’s control. Projects that are temporarily stopped and then recommenced should be subject to shutdown and start-up fees. These fees compensate the consultant for the reduction in staff utilization and for the time required to reorient staff. Fee Basis “A”- Timed Based or “C”- Fixed should be used.

04.04 Abandonment of Projects

If a project is abandoned or suspended through no fault of the consultant, the value of the consultant’s service should be determined based on the proportion of services completed (Stages 1 thru Stage 5), making appropriate allowances for the cost resulting from the suspension.

04.05 Alternative Designs

Where client’s request that consultants prepare alternative designs beyond the scope of the original assignment, the fee for all extra work required to prepare alternative designs should be based on Fee Basis “A”- Time Based.

04.06 Negotiation of the Construction Contract

Where a client elects to negotiate a construction contract rather than call for tenders, the extent of the service required on a consultant's part might be increased beyond the work required under Basic Services. In such cases, it is advisable for the client and the consultant to review the circumstances and objectives of the negotiations, and agree on the extent and basis of fee adjustment to be paid.

04.07 Separate Construction Costs

Where clients, project managers or construction managers require separate construction contracts for a single project, consultants should be informed during the fee negotiations or at the request for proposal phase. Separate contracts, or "fast-tracking", require additional work from consultants. If this requirement is not defined until after fees are agreed upon, the consultant should outline the additional work, and Fee Basis "A" - Time Based or "C" - Fixed applied to such additional work.

05.00 REIMBURSABLE EXPENSES

Expenses incurred by a consultant in connection with the project are chargeable at cost plus an administrative charge. The administrative charge is to cover overhead directly attributable to the expense.

The recommended charges on consultant expenses are as follows:

- 6% on expenses incurred and paid for directly by the consultant.
- 10% on expenses incurred and paid for directly by the sub-consultant, with the sub-consultant receiving a 6% mark-up on expenses paid directly.
- No mark ups shall be applied on HST.

Expense items should be discussed and agreed upon when the agreement is being negotiated. Compensation for reimbursable expenses may be based on billings for individual items of expense, an agreed fixed lump sum fee, or a percentage of the Basic Services fee.

As a guideline for clients establishing a consultant services budget, consultant reimbursable expenses based on percentage of the normal Basic Services fee could be in the order of 5%.

The following items are included in establishing these percentage guidelines:

- Communications (e.g. telephone, fax, mail, courier, voice/data transmissions);
- Reproduction and document scanning expenses, except for large scale production of contract documents for tendering purposes;
- Construction photographs;
- Head office administration and corporate expenses, (e.g. professional liability insurance, accounting/payroll services, computer hardware and software usage); and
- Administrative mark-up on consultant disbursements.

The following items are excluded in the guidelines for reimbursable expenses:

- Travel expenses where travel is at least 50 km from the office of the project consultant team within the Province, excluding remote locations;
- Living expenses for full time or part time resident staff;
- Project related advertising expenses;
- Payments to other specialist consultants as approved by the client;
- Specialized, project specific computer equipment and computer services;
- Use of highly specialized equipment detailed in the agreement ;
- Chemical and physical tests;
- Site office supplies and equipment;
- Additional professional liability insurance, if required by the client;
- Colour renderings, and professional models and mock-ups;

- Professional photography or specialized in-house photography;
- Fees, levies, duties or taxes for permits, licenses, or approvals from authorities having jurisdiction;
- Room rentals and supplies, and multi-media equipment rentals for meetings with large numbers of people;
- Materials and supplies used for formal presentations;
- Any other expenses paid by the consultant on the client's behalf and not covered by the agreed fee; and
- Professional liability insurance premiums incurred by the prime consultant on its sub-consultants when their fees are charged at per diem rates.

06.00 REFERENCES

The following engineering and geoscience documents were referenced in the preparation of this document.

- Engineers and Geoscientists Act & Regulations (1988)
- By Laws (2000)
- Selection by Ability (1991)
- Guidelines for Geotechnical Engineering Services (1995)
- Guidelines for Structural Engineering Services (1995)
- Guidelines for Mechanical Engineering Services (1995)
- Guidelines for Electrical Engineering Services (1995)
- Guidelines for Municipal Engineering Services (1995)
- Guidelines for Professional Engineers providing Prime Consultants Services (1998)
- Guidelines for Use of the Seal (1993)
- Guidelines for Use of Computer Software Tools (1995)
- Guidelines for Design and Construction of Steel Building Systems (2000)
- Requirements and Guidelines for Administering the Practice of Engineering and Geoscience in Organizations (1997)
- Procedures for the Preparation of Stamped Shop Drawings for Design of Wood Truss Systems (1996)
- Position Paper on the Practice of Naval Architecture and Marine Engineering (1997)
- Memorandum of Agreement between APEGN and Consulting Engineers of Newfoundland and Labrador (1992)