

## 3. GENERAL

### 3.1 BUILDINGS CAPITAL PROJECT DELIVERY

The project delivery process for building capital projects has four (4) distinct phases as follows:

1. Phase 1 – Programming / Pre-Design
2. Phase 2 – Design
3. Phase 3 – Construction
4. Phase 4 – Post Completion

Within each phase there are several steps in a logical sequence to achieve a quality end product.

#### 3.1.1 PHASE 1 - PROGRAMMING/PRE-DESIGN PHASE

Step 1	Needs Assessment Role Study
Step 2	Owner's Project Requirements
Step 3	Master Program
Step 4	Site Evaluations and Selection
Step 5	Existing Facility Condition Assessment
Step 6	Master Plan
Step 7	Functional Program
Step 8	Furniture and Equipment Selection
Step 9	Pre-Design
Step 10	LEED®

#### 3.1.2 PHASE 2 - DESIGN PHASE

Step 1	Concept Design
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- Step 2      Design Development
- Step 3      Detailed Design
- Step 4      Contract Documents
- Step 5      Tendering and Contract Award
- Step 6      Design Manager to Construction Manager Handover

### **3.1.3 PHASE 3 - CONSTRUCTION PHASE**

- Step 1      Contract Administration
- Step 2      Commissioning
- Step 3      Training and Education
- Step 4      Warranties
- Step 5      Operation and Maintenance Manual
- Step 6      Substantial Completion
- Step 7      Final Completion

### **3.1.4 PHASE 4 - POST COMPLETION PHASE**

- Step 1      Contract Close-out Documentation
- Step 2      Contractor Performance Evaluation
- Step 3      Handover
- Step 4      Completion of Work under Warranty
- Step 5      Post Occupancy Evaluation

The programming phase is often led by the Owner in consultation with the facility end user. Input from TW is limited to certain topics including site selection and development of project budget forecasts. Since this phase is generally managed by a client partner, this manual only highlights some aspects of the programming process, and does not provide specific requirements and responsibilities by the Project Team.

TW is the lead partner during the design, construction and post completion phases of the project. This manual describes specific requirements and responsibilities by the Project Team during these phases of the project.

## **3.2 PROJECT PARTNERS**

In most projects there are three partners; (1) the funding authority (e.g. Health, Education and Justice), (2) the operating agency (e.g. School Districts, Health Corporations) and (3) TW as the design and construction management authority. Each of these partners has a separate mandate on the project and therefore a different focus when taking on new building construction or redevelopment of an existing building.

### **3.2.1 FUNDING AUTHORITY**

The funding authority provides financial support for the project and has a vested interest in the overall financial planning and schedule for the project. They may, in some cases be the Operating Agency/Department, and may have an interest in program development.

### **3.2.2 OPERATING AGENCY / DEPARTMENT**

The operating agency/department is heavily involved in the programming and planning stages, it is at that time they provide the Owner Project Requirements. Through the process of design, construction and commissioning, they also play a role, which is described further in this document.

### **3.2.3 TRANSPORTATION & WORKS**

TW is the managing partner during the design, construction and post completion phases of the project.

### 3.2.4 CLIENT PARTNERS

Clients provide their design requirements through a program or project scope document referred to as the “Owner’s Project Requirements” to the Design Manager who communicates them to the Consultant. Client partners are represented at meetings, to facilitate discussion on their requirements with the Consultant.

## 3.3 PROJECT TEAM

The project delivery model adopted by TW includes both TW and Consultant team members. TW provides project management and directs as necessary, the Consultant's work during all stages of the project.

The project team consists of the (1) Design Manager, (2) Construction Manager, (3) Consultant, (4) TW Design Professionals, (5) other TW personnel and (6) Contractors. The project team leader is either the Design Manager or the Construction Manager depending on the stage of the project.

### 3.3.1 DESIGN MANAGER (DM)

1. The Design Manager (DM) is the project team leader during the design stages of the project, provides backup support to the Construction Manager on design related issues during the construction stage, and may participate in certain commissioning and post completion activities.
2. The DM is TW’s representative directly responsible for the design management of the project and reporting on project status to clients. The DM will be the liaison between the Consultant, TW staff and the client partners during the design phase.
3. The DM assembles the project design brief for the benefit of the Consultant which is to describe the scope of the project in relation to client program requirements, establishes initial cost plan and identify project deliver milestones.
4. The DM should not permit design to commence on the project until a client approved facility program is in place and sufficient project finding has been established.
5. The DM is responsible for obtaining all design submission and associated cost estimate approvals. The Design Manager is further responsible to ensure that the design and/or costs are modified by the Consultant if submissions do not conform to the project requirements.

6. The DM is to coordinate and screen input from various sources to ensure clear, non-conflicting direction is provided to the Consultant.
7. During tendering the DM is responsible for ensuring clarity of the contract documents, and conformity to tendering and contracting regulations. The DM is further responsible to Government for bid compliance on the low bid in accordance with the Public Tender Act.
8. The DM is responsible for ensuring the signed construction contract documents have been prepared and distributed by Tendering and Contracts Division.
9. The DM is responsible to advise the Consultant upon external relationships and incorporate client and TW professionals into the project organization chart.

### **3.3.2 CONSTRUCTION MANAGER (CM)**

1. The Construction Manager (CM) is the main contact for the Client and the Contractor during construction.
2. The CM is responsible for the delivery of construction on time, within budget, and to the quality standard set out in the construction contract. The CM is given the authority of the Engineer/Architect under the construction contract.
3. The CM is the liaison between the Consultant, Contractor, project staff, and TW's Technical Service Inspectors during the construction phase.
4. The CM assumes the project team leadership and responsibility for the project documentation once a signed construction contract is in place.

### **3.3.3 PROJECT CONSULTANT / PRIME CONSULTANT**

1. The Project Consultant acts as an agent or as an extension of the staff of TW's project team in servicing its clients. The Project Consultant delivers the design solution, provides contract administration services during construction, and assists in the commissioning process, as required by the terms of the "Agreement between Owner and Prime Consultant" and as directed by the TW Design or Construction Manager. A sample of the agreement can be found at [www.tw.gov.nl.ca/works](http://www.tw.gov.nl.ca/works).
2. The Consultant shall provide a project organization chart including the following information at the start of the project:
  - a. Sub-Consultants and their responsible disciplines

- b. Senior key professionals being assigned to the project having acquired at least ten (10) years relevant professional experience
- c. Coordination and reporting relationships
- d. Who is responsible for the quality assurance in addition to the design discipline leader
- e. Contact information for all responsible persons

3. Tabular listing of all project personnel to be engaged on the project and required to meet the design delivery schedule. The listing should identify the individual's name, design specialty and years of experience.
4. Separate listing providing hourly rates for personnel engaged on the project. The DM is to treat personnel financial data with confidentiality.

### **3.3.3.1 Consultant Selection Process**

1. Consultants are to be selected from a Consultant registry maintained by the Works Branch or by a REOI process.
2. Consultants are selected by the Minister or by Cabinet Committee of Ministers in accordance with Treasury Board Guidelines.
3. A standard letter of appointment is sent to the Consultant by the ADM (Works) advising them to contact the Design Manager and prepare a proposal that would detail the scope of work, provide a design schedule, and produce a cost breakdown for a consulting services contract. Where possible, the Design Manager will assemble and provide the Consultant with a project brief.

### **3.3.3.2 Prime Consultant Agreement (PCA)**

1. On agreement of scope and fees with the Consultant, the Design Manager will prepare the "Standard Form of Agreement between Owner and Prime Consultant" for signature by the Consultant, using the accepted proposal of fees, expenses and scope as the basis of the agreement.
2. After the signed agreement is returned from the Consultant it will be sent to TW Executive for signature.
3. Copies of the agreement are distributed or saved as follows:

- a. An original copy of the agreement is to be kept within TW Registry
  - b. An original copy is sent to the Consultant
  - c. Scanned/electronic copy is sent to the Design & Construction Division (TRIM)
  - d. A copy may also be retained for Regional files
4. The Design Manager will ensure that the necessary encumbrance for the current fiscal year for the consulting contract is prepared. This is updated annually.
5. The Design Manager will ensure that the necessary steps to set up the contract in PARTS are completed.

### **3.3.3.3 Determination of Consultant Fees**

1. Consultant fees and rates may be based upon those published by Newfoundland Association of Architects and the Consulting Engineers of Newfoundland and Labrador (CENL), "Guidelines and Recommended Minimum Fees for Architectural and Engineering Projects", previously published by Association of Professional Engineers and Geoscientists of Newfoundland (APEGN) in 2003. This document can currently be found online at [http://www.consultingengineersofnl.ca/images/PEGNL\\_Fee\\_Guidelines.pdf](http://www.consultingengineersofnl.ca/images/PEGNL_Fee_Guidelines.pdf).
2. Estimates of travel expenses are to be based upon the Government of Newfoundland & Labrador Treasury Board Travel Rules which can be found on line, at the following link [http://www.exec.gov.nl.ca/exec/hrs/working\\_with\\_us/transportation.html](http://www.exec.gov.nl.ca/exec/hrs/working_with_us/transportation.html)
3. Reimbursement of expenses will be at the rates stipulated in the Government of Newfoundland & Labrador Treasury Board Travel Rules at the time incurred expense. Information backing up expenses must be submitted for audit by TW with the submission of invoices including such costs. Expenses not identified in the Treasury Board Travel Rules shall be at cost. Visa receipts are not acceptable; an itemized receipt must be submitted.
4. Items not reimbursable are:
  - a. Alcohol
  - b. Personal entertainment
  - c. Gratuities
5. Travel outside the schedule agreed to in the "Standard Form of Agreement between Owner and Prime Consultant" must be pre-approved by the TW Design Manager or Construction Manager. Without approval, reimbursement may not be possible.

6. Consultants shall ensure that vehicle insurance for both personal vehicle use and rental vehicle use is provided to their employees while conducting work on government funded projects. Consultant claims of rental company insurances will not be reimbursed.
7. For projects less than \$400,000, a fixed contract price may be negotiated with the Consultant to cover all fees and expenses associated with the investigation, design and contract administration of the project. This amount can only be changed with the prior written authorization of the Design Manager. In general, such authorization shall be granted if it becomes necessary to substantially modify the scope of work from that outlined in the Consultant's proposal.
8. Payments based upon per diem rates or unit prices shall be only entertained when the preparation of a fixed price is not practical or deemed desirable.
9. For projects greater than \$400,000, the percentage rate in the Fees Guideline normally would apply. Expenses and fees not covered by the percentage rate will be negotiated wherever possible as a fixed contract amount. In the absence of a fixed contract amount, an allowance for the additional services is to be provided.
10. Additional services, excluded from the percentage fee schedule should be identified as lump sum line item fees. These services include:
  - a. predesign site investigations, including facility condition assessments
  - b. programming & advisory services, including preparation of room data sheets when required by the client
  - c. segregated construction contract packages
  - d. preparation of designs for future implementation not incorporated in the construction contract
  - e. resident engineering services during construction
  - f. preparation of as-found drawings documents for remodelling and renovating
  - g. LEED®
  - h. field services other than construction review and meeting
  - i. provision of full time or part time inspection
  - j. extended construction administration costs arising from circumstances outside the control of the Consultant
  - k. provision of contract administration and advisory services to the Construction Manager in the case of contractual default by the Contractor

I. commissioning activities as identified in the TW Commissioning Guideline

11. The Prime Consultant Agreement Schedule II – Basis and Other Additional Service Fees provides a breakdown of how the Total Consultant Fee is to be divided over the project. The following table depicts the breakdown TW will accept, note this is different than that listed in the “Guidelines and Recommended Minimum Fees for Architect and Engineering Projects”, published by Newfoundland Association of Architects and the Consulting Engineers of Newfoundland and Labrador,

BASIC AND OTHER ADDITIONAL SERVICES FEES	
Programming Advisory Services	
Basic Services	
Concept Design	15%
Design Development	20%
Detailed Design / Contract Documents / Tender	35%
Contract Administration	20%
Project Completion Phase and Project Record Drawing	10%
Other Additional Services:	
Commissioning	Fixed Fee
LEED	Fixed Fee
Resident Services during Construction	
Design Services - Segregated Construction Contracts	
Construction Management - Multiple Contracts	
Prime Consultant Project Expenses for Above Services	Allowance
<b>TOTAL BASIC AND OTHER SERVICES FEES</b>	
<b>TOTAL ADDITIONAL REIMBURSABLE ALLOWANCE</b>	

### 3.3.3.4 Payment of Consultant's Invoices

1. It is the Design Manager's responsibility to ensure that the invoice charges are fair and reasonable for the work performed and are in accordance with the consulting services contract. Backup documentation for the invoice is to be provided if no fixed amount has been negotiated for the service to be provided.
2. Consultants are to be advised that their invoices must be presented in a format consistent with the breakdown of the consulting contract, identifying task and percentage complete to date. Invoices should also indicate previously billed amounts for each task.

3. If deemed necessary to modify a Consultant's invoice, a copy of the modified invoice shall be sent back to the Consultant for re-submittal. The modified invoice may continue to be processed without delay. Best practice is to process revised invoices when received.
4. After handover of the project to the Construction Manager for the construction phase, the Construction Manager will normally assume responsibility for certification of further progress payments to the Consultant.

### **3.3.3.5 Consultant Change in Scope**

1. Revisions to the consulting services contract scope of work resulting in an increase or decrease in the contract amount will be documented by a Consulting Services Contract Change Order prior to payment. Change orders increasing the contract amount can only be approved on the basis of sufficient project funding being in place.
2. Change order descriptions must clearly identify the scope change, reason for the change, and the time period if applicable.

### **3.3.3.6 Other Consultants**

1. Other Consultants utilized on building projects are commonly land surveyors and geotechnical Consultants. The Design Manager, or the Consultant on behalf of the Design Manager, obtains proposals for these services.
2. Where legal property or topographical site surveys are required, the request for the surveying Consultants will consider level of expertise, technical resources, and proximity to the work site. Further guidelines for procurement of surveying services and required deliverables are given in this manual.
3. Subsurface soils investigations are imperative for new buildings and extensions to existing buildings including the project site.
4. Further guidelines on geotechnical services are given in this manual.
5. The manner in which agreements are put in place will establish the liabilities between the parties.
6. If TW engages a Consultant directly a contractual relationship is established between TW and the Consultant.

7. If the Prime Consultant engages the Consultant, TW has no contractual relationship other than the agreement with the Prime Consultant.
8. The process of engaging and directing land survey and geotechnical Consultants are considered to be a pre-design site investigation phase activity. If the Prime Consultant is directed by the Design Manager to perform engagement and direction, the Prime Consultant is entitled to be paid at cost for professional fees and expenses incurred. Along with such payment, the Prime Consultant assumes legal liability to TW for quality control of the work performed by other Consultants under its direction.
9. Project technical requirements may require the services of specialists, beyond the scope of experience and expertise of the Project Consultant team. Specialists have been used for:
  - a. acoustical considerations
  - b. food service design
  - c. high speed, high rise elevators
  - d. wind and snow modeling of the building and site configuration
  - e. hazardous material assessments (hazmat)
  - f. fire protection engineering
  - g. way finding
  - h. environmental impact assessment
  - i. historic construction and restoration
  - j. ergonomics
  - k. laboratory design
  - l. LEED®
  - m. durability

### **3.3.3.7 Consultant Performance Evaluation System**

#### **3.3.3.7.1 General**

1. The Consultants Performance Evaluation System is a process designed to maintain an acceptable level of performance from Consultants carrying out work for TW.
2. Evaluations are to be completed for all design contracts. The evaluation will be started by the Design Manager after the construction contract is awarded and then it will be turned over to the Construction Manager for completion.

3. Once the evaluation is completed after construction, the evaluation shall be returned to the Design and Construction Division.
4. A copy of the completed evaluation will be forwarded to the Design & Construction Division to be incorporated into the Consultant Registry Database.
5. Information compiled through the Consultant Performance Evaluation System is intended solely for internal use by TW. Evaluation information related to a particular Consultant will not be released to outside parties.

#### *3.3.3.7.2 Performance Rating Methodology*

1. Consultant's performance will be evaluated on a points rating system based on a weighted score from following categories:
  - a. Design Phase (75% of weighted average)
  - b. Knowledge of the clients need
  - c. Quality of documents
  - d. Providing oversight and coordination of the sub-Consultants work
  - e. Ensuring code requirements are met and well documented
  - f. Maintaining budget during various design stages
  - g. Providing innovation in design
  - h. Schedules met for all deliverables
2. Contract Administration (20% of weighted average)
  - a. Shop drawing review was thorough and timely
  - b. Change orders were issued with appropriate documentation
  - c. Regular attendance of job meeting
  - d. Responded in timely manner to requests for information
  - e. Provided solutions that were appropriate, creative and cost effective during conflict resolution
3. Contract Close-out (5% of weighted average)
  - a. Regularly checked construction progress and monitored the status of defective work
  - b. Provided all required documentation at turn-over (shop drawings, LEED® documentation etc.)

### 3.3.4 TW DESIGN PROFESSIONALS

The TW design professionals (e.g. Design & Construction Division) are the authority on design standards, design quality and life cycle asset management principles and commissioning. They exercise their judgment in accepting the development of the final design solution.

### 3.3.5 OTHER TW PERSONNEL

There are other TW personnel who typically provide support to the Construction Manager during the construction stage but may provide support during the design phase as well. These individuals include Technical Services Inspectors, Project Coordinators, Building Managers, Area Managers and the Commissioning Coordinator.

### 3.3.6 CONTRACTOR

The Contractor is responsible for meeting the contractual requirements set forth in the Tender Document package in accordance with the General Terms and Conditions agreed to in the contract.

## 3.4 CORRESPONDENCE

1. Unless otherwise arranged with the Design Manager, the Consultant shall communicate with the Design or Construction Manager only, depending on the phase of the project. The Consultant's contact during the design and commissioning phases of the work is the Design Manager. During construction it is with the Construction Manager.
2. There shall be no direct official communication between the Client/Operating Agency/Department/Funding Authority and the Consultant. If either of these project partners requires copies of project documents or other action directly from the Consultant, the matter must be referred to the Design Manager for decision. This will ensure a consistent manner in dealing with matters, and also consistency in the message sent to the Consultant on design decisions.
3. During the tender call, Tendering and Contracts Division conducts all correspondence with bidders and makes the contract award.
4. If a bidder contacts the Design Manager, Client, Construction Manager, or Consultant, they shall be referred to Tendering and Contracts Division to place a formal query. If the answer

is not generally known, an addendum to all plan takers shall be issued. All queries shall be routed through Tendering and Contracts.

5. Following award, the Consultant may be responsible for administration of the construction contract in whole or in part. Where the Consultant is responsible, they shall undertake all technical correspondence with the Contractor and forward all such correspondence to the TW Construction Manager, including:
  - a. copies of letters
  - b. minutes of meetings
  - c. design intent directions
  - d. responses to Request for Information
  - e. change Order descriptions/scope and estimates
6. Correspondence affecting the terms and conditions of the construction contract, and in particular having financial or schedule implications remains the Construction Manager's responsibility.

## 3.5 MEETINGS

1. The Design Manager shall arrange meetings as frequently as necessary, throughout the entire project development of all members of the project team, including:
  - a. client partners
  - b. consultants
  - c. TW Design Professionals
  - d. construction management staff
  - e. specialists engaged by TW
2. During the construction phase, project review meetings with the client partners will occur at least monthly, and are normally in addition to construction review meetings held with the Contractors.
3. All meetings are to be recorded and minutes circulated to the attendees, and others as deemed necessary.

## 3.6 MEDIA AND PUBLIC COMMUNICATIONS

1. Any inquiries from the media should be forwarded to the Director of Communications.

2. General inquiries from the public should be referred to the appropriate operating agency.
3. In no case, shall the Consultant or Contractors speak to media concerning the development of any project.

### 3.7 INFRASTRUCTURE APPROVAL PROCESS

1. All projects require approvals according to TW's Infrastructure Approval Process. The approvals include:
  - a. Stage 1 – Approval in Principle
  - b. Stage 2 – Approval to Design
  - c. Stage 2A – Approval of Concept Design and move to Design Development
  - d. Stage 2B – Approval of Design Development and move to Detailed Design
  - e. Stage 3 – Approval to Tender
  - f. Stage 4 – Approval to Award

### 3.8 CAPITAL BUDGET FORECASTS

1. The Consultant shall carry out cost planning and control services to monitor the project during the facility design process. Cost planning and control services are included under the scope of basic design services in the Consultant Agreement.
2. Effective cost planning and control is of prime importance and requires the use of a costing specialist in this discipline (e.g. Quantity Surveyor), either on the Consultant's staff or engaged as a sub-Consultant.
3. TW Design Manager will be responsible for the finalized budget which includes but is not limited to:
  - a. costing supplied by the Consultant for the construction of the facility
  - b. consultant fees
  - c. land purchase
  - d. furniture and Equipment
  - e. TW project costs
  - f. contingencies
  - g. location factors

### 3.8.1 PROJECT ESTIMATES

1. The Consultant shall make the following submissions:
  - a. Project Estimate – with concept design report
  - b. Project Estimate – with design development report
  - c. Final Project Estimate – updated at time of tender package submission
  - d. Elemental Cost Breakdown – with all phases of submissions
  - e. Post Project Estimate evaluation at the completion of construction
2. The Construction Manager is responsible for Project Estimate submissions after award of the primary construction contract.
3. The Project Estimate must be within the authorized budget. Intermediate and final estimates shall remain within the Project Estimate, unless changes due to revised client requirements, etc., are authorized by TW. The Consultant is to advise TW immediately if such changes occur.
4. Submit project estimate information during the design process following recognized formats such as “Hanscomb Yardsticks for Costing” or “RS Means”.
5. The Final Project Estimate brings together all project costs, including construction, contingencies, separate contracts, land costs TW project services costs, and Consultants’ fees, to arrive at the ultimate cost of the entire project.
6. The Elemental Building Cost Breakdown provides a breakdown of cost by construction element for analysis purposes. Initially, elemental costs shall be based on assumption, historical data and calculation. Subsequent submissions must be based on quantity take-off as information becomes available during the development of design.

### 3.8.2 CONSTRUCTION PROGRESS BREAKDOWN

1. Construction progress breakdown, used for progress billings, will be supplied by the Contractor at the onset of the construction contract and approved by the Construction Manager.