

Appendix D r01 – Class D Order of Magnitude Cost Estimate

EC + DFO – Co-Location at FWI

For:

Environment Canada & Department of Oceans and Fisheries

Fresh Water Institute (FWI)

Winnipeg, Manitoba

Project No. R.075255

Prepared by:

Coupland Kraemer Architecture + Interior Design Inc.

February 28, 2017





**FRESH WATER INSTITUTE
CO-LOCATION OF ENVIRONMENT
CANADA AND THE DEPARTMENT
OF FISERIES AND OCEANS**

Winnipeg, MB

February 21, 2017

**Order Magnitude Estimate # 2
(Class D)**

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1.0 INTRODUCTION

The estimate presented in this report provides an assessment of the direct and indirect construction costs for the proposed Fresh Water Institute Co-Location of Environment Canada and the Department of Fisheries and Oceans, located on the University of Manitoba Campus, Winnipeg, MB.

The estimated costs contained in this report are based on schematic design drawings, outline briefs and reports prepared by Coupland Kraemer Architecture & Interior Design (CK A +ID) and their consulting engineers. The documents provided are not sufficiently detailed to allow the project to proceed for a fixed-price tender call. The estimate provides a reasonable cost envelope within which the project design can be developed. Further estimates based on more detailed design information may, however, vary from this baseline.

Detailed specifications are not completed at the schematic design stage and therefore, cost assumptions for the anticipated final design products had to be made. As well, final design decisions will be made during the preparation of tender documents. The order magnitude estimate (Class D) estimate reflects those drawings and information made available at the time the estimate was prepared and may not totally reflect the final tender package.

A complete description of the work, including the associated cost, is summarized under the “Cost Plan” appendix in this report. The purpose of the cost plan is to identify to CK A + ID and their consulting engineers; the types, quality, quantity of materials and methods of construction utilized to produce the order magnitude estimate (class D). In simplicity, the cost plan is a large shopping list of construction items, materials, and methods. If items in the schematic design estimate are not required or desired, the items may be removed from the estimate/design and the cost will be reduced. If additional items are required or desired, which are currently not included in the estimate, then either additional funds will be required, or savings must be incorporated elsewhere in the design to offset the cost increase.

The estimate is not representative of the low bid that will be received at the time of tendering. An indication of the range of bids expected can only be estimated at the time of the tender based on the final contract documents, specific market conditions at the time of tender, including number of other projects out to tender at the same time, interest in project and availability of specified materials in local market. The current estimate represents a fair and reasonable value for what is currently shown on the schematic design estimate, design briefs and those requirements as discussed with CK A + ID and their consulting engineers: assuming adequate coverage from both the General Contractors and associated sub trades.

In order to maintain the budget parameters established in this report, BTY strongly recommends that a final cost estimates be prepared just prior to going to tender to review the final contract documents and current market conditions.

2.0 PROJECT DESCRIPTION

The facility was comprised of, 2 storey Administration block with full basement, 4 storey Lab block with full basement, 3 storey service block with full basement. The scope of work can be summarized as follows:

Base Building

- Removal of interior doors, CMU and GWB wall partition affected by the renovation.
- New exit door and window openings Level 2 and 3 of Administration block.
- Replace and install new window coverings to all existing and new windows.
- Renovation of base building; Sheet vinyl floor, ceramic floor tile for floor finishes; Make good existing metal linear ceiling and acoustic T-bar ceiling to ceiling finishes; Ceramic wall tile to wash rooms to wall finishes.
- Allowance for new millwork to washrooms all floor levels.
- Remove and replace existing metal stair guardrails and handrails.
- Replace exterior free standing building signage and allowance for interior signage's.
- Renovation of existing washrooms on all levels, conversion of locker rooms to wash rooms extensions and conversion of available rooms to barrier free washrooms.
- Update elevator cars of Lab block building
- Allowance for hazardous material removal.

Environment Canada

- Removal of interior doors and GWB wall partition affected by the renovation.
- New interior hollow metal doors and painted gypsum board, sound insulated, metal stud wall interior partitions to new office layout.
- Finishes includes; Sheet vinyl floor, carpet, raised flooring to Level 3 EC offices for floor finishes; Acoustic T-bar ceiling to ceiling finishes; Painted gypsum walls to wall finishes.
- Allowance for new millwork to offices and kitchenettes to all floor levels.
- Allowance for new work stations for EC staffs.
- Addition of security fencing to NW overflow parking area for EC staff use.
- Conversion of open site space to asphalt parking area (37%).

Department of Fisheries and Oceans

- Removal of interior doors and GWB wall partition affected by the renovation.
- Finishes includes; Sheet vinyl floor, carpet, raised flooring to Level 3 EC offices for floor finishes; Acoustic T-bar ceiling to ceiling finishes; Painted gypsum walls to wall finishes.
- Conversion of laboratory spaces to WP2.0 compliant office works spaces for Department of Fisheries and Oceans and Environment Canada staffs.
- Allowance for new work stations for DFO staffs.
- Allowance for new millwork to offices and kitchenettes to all floor levels.
- Allowance for new food service equipment.
- Allowance for temporary office area swing space for DFO staffs to Annex building during the renovation period.
- Conversion of open site space to asphalt parking area (63%).



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2.0 PROJECT DESCRIPTION (cont...)

Mechanical Scope:

- Mechanical Scope of work include modification, renovation and conversion of existing plumbing & drainage system, fire protection system, HVAC and controls to suit new building functionality and layout.
- Mechanical Site services include the rerouting of storm system, sanitary system, fire and water main affected by the new exterior construction and the connection of building addition to the existing building utilities.

Electrical scope includes:

- Electrical works include power distribution, lighting and auxiliary systems. Normal and emergency power distribution system will be upgraded to support the new power requirements. Lighting will be LED fixtures controlled by switches and occupancy sensors. Auxiliary systems include voice/data, fire alarm, clock, CATV, intercom, CCTV, card access, public address, sound masking and audio video system.
- Electrical site services include new parking lot lighting.



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3.0 EXECUTIVE SUMMARY: PROJECT

The current estimated cost of the project may be summarized as follows:

Item		Estimated Cost	Percentage
A.	Land Cost (Excluded)	\$0	0%
B.	Construction	\$9,960,000	59%
C.	Allowances	\$4,534,000	27%
D.	Professional Fees & Disbursements	\$0	0%
E.	Municipal Fees, Testing & Field Analysis	\$0	0%
F.	Management & Overhead	\$0	0%
G.	Project Contingency	\$0	0%
H.	Furnishing, Fittings & Equipment	\$1,971,500	12%
I.	Harmonized Sales Tax 0.00%	\$0	0%
Total Project Cost January 2017 Dollars		\$16,465,500	97%
J.	Escalation 2.60%	\$428,100	3%
Escalated Project Cost February 2018 Dollars		\$16,893,600	100%

Please note that, where zero dollar values are stated, BTY has excluded these costs and the values should be carried in a separate budget (if applicable).

4.0 AREAS

The gross floor area of the project measured in accordance with the guidelines established by the Canadian Institute of Quantity Surveyors is:

Location	Base Building Area m ²	Environment Canada Area m ²	Department of Fisheries and Ocean Area m ²	Total
Level 1	180 m ²	445 m ²	740 m ²	1,365 m ²
Level 2	165 m ²	445 m ²	520 m ²	1,130 m ²
Level 3	165 m ²	525 m ²	610 m ²	1,300 m ²
Level 4	165 m ²	700 m ²	470 m ²	1,335 m ²
Level 5	165 m ²	700 m ²	675 m ²	1,540 m ²
EC Additional office area		400 m ²		400 m ²
Total Gross Floor Area	840 m²	3,215 m²	3,015 m²	7,070 m²

5.0 PROJECT COST ESTIMATE

The current estimated cost of the project is as follows:

Description	Total Cost	Percentage
A. LAND COST	\$0	0%
1 Land (Excluded)	\$0	
2 Legal Fees (Excluded)	\$0	
B. CONSTRUCTION	\$9,960,000	59%
1 Base Building	\$2,317,700	
2 Environment Canada	\$3,927,200	
3 Department of Fisheries and Oceans	\$3,715,100	
C. ALLOWANCES	\$4,534,000	27%
1 Design Allowance (Design & Program Changes)	\$2,386,300	
2 Construction Allowance (Changes During Construction)	\$2,147,700	
D. PROFESSIONAL FEES	\$0	0%
1 Programming	\$0	
2 Architectural	\$0	
3 Structural	\$0	
4 Mechanical	\$0	
5 Electrical	\$0	
6 Cost Consultant	\$0	
7 Other Consultants and Disbursements	\$0	
E. MUNICIPAL FEES, TESTING & FIELD ANALYSIS	\$0	0%
1 Development Cost Levies	\$0	
2 Permits, Testing, Field Analysis, Connection Fees	\$0	
F. MANAGEMENT & OVERHEAD	\$0	0%
1 Project Management Fee	\$0	
2 Owner's Planning and Administration Cost	\$0	
3 Project Insurance	\$0	
4 Project Commissioning	\$0	
G. PROJECT CONTINGENCY: 0% of items D to F	\$0	0%
TOTAL CONSTRUCTION COST	\$14,494,000	86%
H. FURNISHING, FITTINGS & EQUIPMENT	\$1,971,500	12%
1 Furnishings, Fittings & Equipment	\$1,971,500	
PROJECT COST	\$16,465,500	97%
I. HARMONIZED SALES TAX 0.00%	\$0	0%
TOTAL PROJECT COST January 2017 Dollars	\$16,465,500	97%
J. ESCALATION	\$428,100	3%
1 Escalation Reserve 2.60% of item A to G	\$376,800	
2 FF&E Escalation 2.60% of item H	\$51,300	
TOTAL ESCALATED PROJECT COST February 2018 Dollars	\$16,893,600	100%



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6.0 DEFINITIONS

The estimate for the project has been prepared and summarized in the following categories. The scope of work covered within each category is as follows

A. Land Cost:

These costs include the acquisition of the site and associated fees, service obligations and property purchase tax.

B. Construction:

This category encompasses all direct and indirect construction costs including building(s), associated site development work and general contractor's general requirements and fee.

C. Allowances

Allowances for cost increases as the design is developed and/or the work is performed on site.

D. Professional Fees:

Within this section professional fees have been estimated for the primary design team consultants including: the architect, structural, mechanical & electrical engineers, and the cost consultant. Other specialist consultants and an allowance for disbursements are also included. Where available, all consultant fees have been calculated based on the current schedule of recommended charges published by professional associations.

E. Municipal & Connection Fees:

This section includes an estimate for all project related fees and charges required as part of the development by the city and other authorities having jurisdiction. These costs include Development Cost Charges (DCC's), Building Permits, levies and associated legal and survey fees. These costs are based on current city formulas and schedules.

F. Management & Overhead:

The project management fee is charged by a company or individual providing project management services. The Owner's Planning and Administrative cost covers the owner's project-related management costs. Provisions are also included for project insurance, commissioning the facility prior to handover and move-in costs.

G. Project Contingency:

This allowance is provided as an owner's contingency to cover changes to non-construction items.

H. Furnishings, Fittings & Equipment:

The Furnishings, Fittings & Equipment estimate for the project has been compiled using a combination of BTY Group's own historical cost data and information specific to this project.

I. Taxes

The amount is adjusted to reflect rebates available to certain types of project.

J. Escalation

This is an allowance for increases in prices of inputs to the project, occurring after the date of the estimate, on the final cost of the project. This allowance is calculated based on BTY's projected annual escalation rates as stated in this report.



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7.0 CONSTRUCTION COST SUMMARY: LOCATION

The estimated construction cost of the project may be summarized as follows:

Description	Base Building	Environment Canada	Department of Fisheries and Oceans	Total Cost
Base Cost	\$1,980,900	\$2,838,900	\$2,314,400	\$7,134,200
Site Works	\$0	\$417,400	\$674,700	\$1,092,100
General Requirements	\$336,800	\$670,900	\$726,000	\$1,733,700
Design Contingency (20.0%)	\$463,600	\$923,400	\$999,300	\$2,386,300
Change Order Allowance (15.0%)	\$417,200	\$831,100	\$899,400	\$2,147,700
Total Construction Cost	\$3,198,500	\$5,681,700	\$5,613,800	\$14,494,000
Furnishings, Fittings and Equipment	\$0	\$690,000	\$1,281,500	\$1,971,500
Total Project Cost	\$3,198,500	\$6,371,700	\$6,895,300	\$16,465,500
Escalation Allowance (2.6%)	\$83,200	\$165,700	\$179,200	\$428,100
Total Escalated Project Cost	\$3,281,700	\$6,537,400	\$7,074,500	\$16,893,600
Gross Floor Area (m ²)	840 m ²	3,215 m ²	3,015 m ²	7,070 m²
Cost/m ² January 2017 Dollars	\$3,808/m ²	\$1,982/m ²	\$2,287/m ²	\$2,329/m²
Cost/sf January 2017 Dollars	\$354/sf	\$184/sf	\$212/sf	\$216/sf
Cost/m ² Feb 2018 Dollars	\$3,907/m ²	\$2,033/m ²	\$2,346/m ²	\$2,389/m²
Cost/sf Feb 2018 Dollars	\$363/sf	\$189/sf	\$218/sf	\$222/sf

8.0 CONSTRUCTION COST SUMMARY: DISCIPLINE

Discipline	Cost \$	Cost/m ²	Cost/sf	Percentage
Architectural	\$4,527,700	\$640.41	\$59.50	27%
Structural	\$0	\$0.00	\$0.00	0%
Mechanical	\$1,665,700	\$235.60	\$21.89	10%
Electrical	\$1,290,900	\$182.59	\$16.96	8%
Site Development	\$1,092,100	\$154.47	\$14.35	6%
Demolition & Hazardous Material	\$1,621,400	\$229.34	\$21.31	10%
General Requirements	\$1,733,700	\$245.22	\$22.78	10%
Net Construction Cost	\$11,931,500	\$1,687.62	\$156.78	71%
Design Contingency (20.0%)	\$2,386,300	\$337.52	\$31.36	14%
Change Order Allowance (15.0%)	\$2,147,700	\$303.78	\$28.22	13%
Escalation Allowance (2.6%)	\$428,100	\$60.55	\$5.63	3%
Total Construction Cost	\$16,893,600	\$2,389.48	\$221.99	100%



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9.0 EXCLUSIONS

The construction estimate includes all direct and indirect construction costs identified in the drawings and other information provided by the Prime Consultant. The estimate specifically excludes the following:

- Land costs
- Professional fees/disbursements, planning, administrative, financing costs and project commissioning
- Legal fees and expenses
- Removal of contaminated soil and/or rock excavation (if applicable)
- Unforeseen ground conditions/associated extras
- Phasing of the works and accelerated schedule
- Erratic market conditions, such as lack of bidders, proprietary specifications

10.0 TAXES

The estimate excludes payable Goods & Service Tax (G.S.T.)

11.0 PROJECT SCHEDULE & ESCALATION

For the purpose of identifying and quantifying the escalation allowance for this project, BTY has considered the following schedule:

Activity	Start	Finish	Duration
Design	March 2017	March 2018	12 months
Tender & Award	April 2018	May 2018	2 months
Construction	June 2018	June 2019	12 months

Based on the above schedule, the mid-point of construction is: February 2018

The number of months from the date of this estimate is: 14 months

On this basis, BTY has calculated the escalation for this project to be 2.60%

Our current projected escalation rates are shown below. In the event that there is slippage in the schedule, further escalation based on the projected escalation rate per annum should be included in the estimate.

Current BTY Group Forecast	2016	2017	2018
	1%	1%	2%



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12.0 PRICING

The estimate has been priced at current rates taking into account the size, location and nature of the project. The unit rates utilized are considered competitive for a project of this type, bid under a stipulated lump-sum form of tender in an open market, with a minimum of five (5) bids, supported by the requisite number of sub-contractors.

The estimate allows for labour, material, equipment and other input costs at current rates and levels of productivity. It does not take into account extraordinary market conditions, where bidders may be few and may include in their tenders disproportionate contingencies and profit

13.0 RISK MITIGATION

BTY Group recommends that the Owner, Project Manager and Design Team carefully review this document, including exclusions, inclusions and assumptions, contingencies, escalation and mark-ups.

Requests for modifications of any apparent errors or omissions to this document must be made to BTY Group within ten (10) days of receipt of this estimate. Otherwise, it will be understood that the contents have been concurred with and accepted.

It is recommended that BTY Group design and propose a cost management framework for implementation. This framework would require that a series of further estimates be undertaken at key design stage milestones and a final update estimate produced which is representative of the completed tender documents, project delivery model and schedule. The final updated estimate will address changes and additions to the documents, as well as addenda issued during the bidding process. BTY Group is unable to reconcile bid results to any estimate not produced from bid documents including all addenda.

In order to maintain the budget parameters established in this report, BTY strongly recommends that further cost estimates are prepared at major design stage milestones to track and monitor the cost of the proposed design as it evolves. The major milestone estimates are typically carried out at the Program, Schematic Design, Design Development, 50% Working Drawings, 75% Working Drawings and 95% Working Drawings stages.

14.0 CONTINGENCIES

Design Allowance

A design contingency of \$2,386,300 or Twenty Percent (20.0%) required PWGSC, has been included in the estimate to cover modifications to the program, drawings and specifications during the design. This allowance should be re-considered as the design proceeds, being ultimately reduced to zero at the tender stage.

Construction Allowance

An allowance of Fifteen Percent (15.0%) or \$2,147,700 required by PWGSC, has been included in the estimate for changes occurring during the construction period of the project. This amount may be expended due to site conditions or if there are modifications to the drawings and specifications.

Project Contingency

As the soft cost have been excluded in this costing exercise, an allowance of Zero Percent (0%) of the soft costs has been included in the project cost plan to cover changes to non-construction items.



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16.0 DOCUMENTATION

The following documentation was used as the basis for preparing this estimate:

Drawings	Description	Rev.	Date
Architectural: Department of Fisheries and Oceans			
1	Existing Floor Plan - Level 1		Nov. 22, 2016
2	Existing Floor Plan - Level 2		Nov. 22, 2016
3	Existing Floor Plan - Level 3		Nov. 22, 2016
4	Existing Floor Plan - Level 4		Nov. 22, 2016
5	Existing Floor Plan - Level 5		Nov. 22, 2016
Environment Canada Renovation			
J1	Option J - Level 1		Nov. 18, 2016
J2	Option J - Level 2		Nov. 18, 2016
J3	Option J - Level 3		Nov. 18, 2016
J4	Option J - Level 4		Nov. 18, 2016
J5	Option J - Level 5		Nov. 18, 2016
Department of Fisheries and Oceans			
J1	Option J - Level 1		Nov. 22, 2016
J2	Option J - Level 2		Nov. 22, 2016
J3	Option J - Level 3		Nov. 22, 2016
J4	Option J - Level 4		Nov. 22, 2016
J5	Option J - Level 5		Nov. 22, 2016
	Existing Parking Plan		Oct. 12, 2016
	Proposed Parking Plan		Nov. 22, 2016

Briefs/Description	Pgs	Date
Building Capability Report:		
EC + DFO - Functional Programs	91	October, 2016
Architectural, Mechanical and Electrical Area Summary		
Cost Item Summary	2	no date
Asbestos Reassessment: PINCHIN		
Report Asbestos Reassessment 501 University Cres Winnipeg MB BGIS	108	October 7, 2016
Fisheries AMEC Detailed Room by Room Report: Amec		
Detailed Room by Room Asbestos Survey	19	March, 2003



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17.0 APPENDICIES



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APPENDIX I : Elemental Analysis



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ELEMENTAL COST ANALYSIS

Gross Floor Area 7,070 m²

Element	Ratio G.F.A.	Element Quantity	Unit	Unit Rate	Amount \$	Total Cost \$	Cost/Floor Area \$/ m ²	%
A1 SUBSTRUCTURE						0	0.00	0.0%
A11.1 Standard Foundations	0.00	0	m ²	0.00	0		0.00	
A11.2 Special Conditions	0.00	0	lm	0.00	0		0.00	
A12 Building Excavation	0.00	0	m ³	0.00	0		0.00	
A2 STRUCTURE						0	0.00	0.0%
A21 Lowest Floor Construction	0.00	0	m ²	0.00	0		0.00	
A22.1 Upper Floor Construction	0.00	0	m ²	0.00	0		0.00	
A22.2 Stair Construction	0.00	0	m ²	0.00	0		0.00	
A23 Roof Construction	0.00	0	m ²	0.00	0		0.00	
A3 EXTERIOR ENCLOSURE						33,600	4.75	0.4%
A31 Walls Below Grade	0.00	0	m ²	0.00	0		0.00	
A32.1 Walls Above Grade	0.00	0	m ²	0.00	0		0.00	
A32.2 Struct. Walls Above Grade	0.00	0	m ²	0.00	0		0.00	
A32.3 Curtain Walls	0.00	0	m ²	0.00	0		0.00	
A33.1 Windows & Louvres	0.01	45	m ²	702.22	31,600		4.47	
A33.2 Glazed Screens	0.00	0	m ²	0.00	0		0.00	
A33.3 Doors	0.00	1	lv's	2,000.00	2,000		0.28	
A34.1 Roof Covering	0.00	0	m ²	0.00	0		0.00	
A34.2 Skylights	0.00	0	m ²	0.00	0		0.00	
A35 Soffits & Projections	0.00	0	m ²	0.00	0		0.00	
B1 PARTITIONS & DOORS						536,700	75.91	6.1%
B11.1 Fixed Partitions	0.37	2,585	m ²	131.72	340,500		48.16	
B11.2 Moveable Partitions	0.00	0	m ²	0.00	0		0.00	
B11.3 Structural Partitions	0.00	0	m ²	0.00	0		0.00	
B12 Doors	0.01	102	lv's	1,923.53	196,200		27.75	
B2 FINISHES						1,489,100	210.62	17.0%
B21 Floor Finishes	1.00	7,070	m ²	103.73	733,400		103.73	
B22 Ceiling Finishes	1.00	7,070	m ²	56.72	401,000		56.72	
B23 Wall Finishes	2.52	17,788	m ²	19.94	354,700		50.17	
B3 FITTINGS & EQUIPMENT						2,468,300	349.12	28.2%
B31.1 Metals	0.05	324	lm	375.00	121,500		17.19	
B31.2 Millwork	0.02	135	lm	713.33	96,300		13.62	
B31.3 Specialties	1.00	7,070	m ²	16.62	117,500		16.62	
B31.4 Furniture	1.00	7,070	m ²	275.67	1,949,000		275.67	
B32.0 Equipment	0.00	13	lm	1,730.77	22,500		3.18	
B33.0 Elevator	0.00	5	stop	32,300	161,500		22.84	
C1 MECHANICAL ALLOWANCE						1,665,700	235.60	19.0%
C11 Mechanical Work	1.00	7,070	m ²	63.22	447,000		63.2	
C12 Fire Protection	1.00	7,070	m ²	31.53	222,900		31.53	
C14 HVAC & Controls	1.00	7,070	m ²	140.85	995,800		140.85	
C2 ELECTRICAL ALLOWANCE						1,290,900	182.59	14.7%
C21 Service and Distribution	1.00	7,070	m ²	9.72	68,700		9.72	
C23 Lighting and Power	1.00	7,070	m ²	100.25	708,800		100.25	
C25 Special Systems	1.00	7,070	m ²	72.62	513,400		72.62	
Z1 GENERAL REQUIREMENTS & FEES						1,272,400	179.97	14.5%
Z11 General Requirements	13.00%				973,000		137.62	
Z12 Profit	4.00%				299,400		42.35	
NET BUILDING COST						8,756,700	1,238.57	100.0%

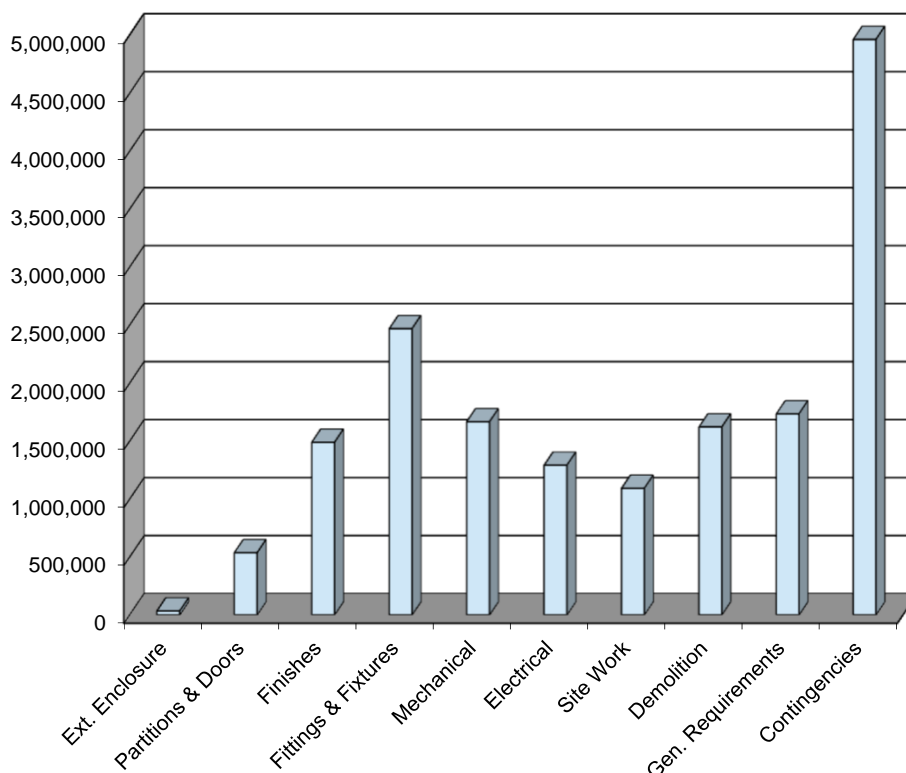


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ELEMENTAL COST ANALYSIS

Gross Floor Area 7,070 m²

Element	Ratio G.F.A.	Element Quantity	Unit	Unit Rate	Amount \$	Total Cost \$	Cost/Floor Area \$/ m ²	%
NET BUILDING COST						8,756,700	1,238.57	
D1 SITE WORK ALLOWANCE						1,092,100	154.47	
D11.1 Site Preparation	1.00	7,070	m ²	11.29	79,800		11.29	
D11.2 Hard Surfaces	1.00	7,070	m ²	121.85	861,500		121.85	
D11.3 Site Improvements	1.00	7,070	m ²	4.53	32,000		4.53	
D11.4 Landscaping	0.00	0	m ²	0.00	0		0.00	
D12 Mechanical Site Services	1.00	7,070	m ²	6.72	47,500		6.72	
D13 Electrical Site Services	1.00	7,070	m ²	10.08	71,300		10.08	
D2 DEMOLITION/HAZARDOUS MAT'L						1,621,400	229.34	
D21.1 Selective Building Demolition	1.00	7,070	m ²	87.89	621,400		87.89	
D21.2 Site Demolition	0.00	0	m ²	0.00	0		0.00	
D22 Hazardous Material	1.00	7,070	m ²	141.44	1,000,000		141.44	
Z1 GENERAL REQUIREMENTS & FEES						461,300	65.25	
Z11 General Requirements	13.00%				352,800		49.90	
Z12 Profit	4.00%				108,500		15.35	
NET CONSTRUCTION COST						11,931,500	1,687.62	
Z2 CONTINGENCIES						4,962,100	701.85	
Z21 Design Contingency	20.00%				2,386,300		337.52	
Z22 Construction Contingency	15.00%				2,147,700		303.78	
Z23 Escalation Contingency	2.60%				428,100		60.55	
TOTAL CONSTRUCTION COST						16,893,600	2,389.48	





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APPENDIX II : Cost Plan

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Description	Quantity	Unit	Rate	Amount
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A3 EXTERIOR ENCLOSURE

A33.1 Windows & Louvres

Base Building:

Aluminum windows	20	no	1,580.00	31,600
Aluminum : (1,500x1,500mm) triple glazed windows				
Caulking				

Total Windows & Louvres				\$31,600
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Description	Quantity	Unit	Rate	Amount
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A3 EXTERIOR ENCLOSURE

A33.3 Exterior Doors

Base Building:

Hollow metal doors and frames; to Level 2	1	lvs	2,000.00	2,000
Hollow metal door: 914 x 2133				
Welded frame : 914 x 2133				
Paint interior metal doors & frames				
Door poly. rigid insulation				
Door caulking				
Exterior hardware: single doors				

Total Exterior Doors				\$2,000
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Description	Quantity	Unit	Rate	Amount
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B1 PARTITIONS & DOORS

B11.1 Fixed Partitions

Environment Canada:

Metal stud walls	2,310	m ²	131.73	304,300
92 mm metal stud : 25 gauge				
Sound insulation (75%)				
12 mm drywall type X				

Department of Fisheries and Oceans:

Metal stud walls	275	m ²	131.64	36,200
92 mm metal stud : 25 gauge				
Sound insulation (75%)				
12 mm drywall type X				

Total Fixed Partitions				\$340,500
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Description	Quantity	Unit	Rate	Amount
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B1 PARTITIONS & DOORS

B12 Interior Doors

Environment Canada:

Hollow metal doors and frames; to Level 2	67	lvs	1,923.88	128,900
Hollow metal door: 914 x 2133				
Welded frame : 914 x 2133				
Paint interior metal doors & frames				
Fire rated door/frame label				
Interior hardware: single doors				

Department of Fisheries and Oceans:

Hollow metal doors and frames; to Level 2	35	lvs	1,922.86	67,300
Hollow metal door: 914 x 2133				
Welded frame : 914 x 2133				
Paint interior metal doors & frames				
Fire rated door/frame label				
Interior hardware: single doors				

<u>Total Interior Doors</u>				<u>\$196,200</u>
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Description	Quantity	Unit	Rate	Amount
B2 FINISHES				
B21 Floor Finishes				
<u>Base Building:</u>				
Sheet vinyl flooring Vinyl sheet floor;	550	m2	65.09	35,800
Base Allowance for rubber base 100mm high	355	m	7.89	2,800
Ceramic floor tile Ceramic floor tiles; to washrooms	160	m2	124.92	20,000
Repair/make good existing floor tiles; to washrooms	130	m2	25.38	3,300
<u>Environment Canada:</u>				
Sheet vinyl flooring Chemical resist. sheet floor; to wet/dry lab	560	m2	90.00	50,400
Vinyl sheet floor;	1,115	m2	65.02	72,500
Carpet Carpet floor finish	1,140	m2	85.00	96,900
Allowance for carpet floor finish; to EC additional office area	400	m2	85.00	34,000
Raised flooring Allowance for raised floor; to 3 level Admin EC	525	m2	250.10	131,300
Base Allowance for rubber base 100mm high	2,997	m	8.01	24,000
<u>Department of Fisheries and Oceans:</u>				
Sheet vinyl flooring Vinyl sheet floor;	1,110	m2	65.05	72,200
Carpet Carpet floor finish	1,905	m2	84.99	161,900
Base Allowance for rubber base 100mm high	3,533	m	8.01	28,300
Total Floor Finishes				\$733,400

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Description	Quantity	Unit	Rate	Amount
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B2 FINISHES

B22 Ceiling Finishes

Base Building:

Metal linear ceiling

Allowance to make good existing metal linear ceiling; to Lab block corridors	550	m2	15.09	8,300
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Ceiling Finishes

Acoustic T-bar ceiling water resistant; to washrooms	290	m2	65.15	18,900
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Environment Canada:

Ceiling Finishes

Acoustic T-bar ceiling	2,815	m2	60.00	168,900
Allowance for acoustic T-bar ceiling; to EC additional office area	400	m2	60.00	24,000

Department of Fisheries and Oceans:

Ceiling Finishes

Acoustic T-bar ceiling	3,015	m2	60.00	180,900
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Total Ceiling Finishes

\$401,000

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Description	Quantity	Unit	Rate	Amount
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B2 FINISHES

B23 Wall Finishes

Base Building:

Wall Finishes

Allowance to make good and paint wall; to Lab block corridors	1,080	m2	18.98	20,500
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Ceramic wall tile

Ceramic wall tiles; to washrooms	441	m2	124.94	55,100
Repair/make good existing wall tiles; to washrooms	315	m2	25.08	7,900

Environment Canada:

Wall Finishes

Latex wall finish	7,193	m2	17.00	122,300
Allowance for latex wall finish; to EC additional office area	280	m2	17.14	4,800

Department of Fisheries and Oceans:

Wall Finishes

Latex wall finish	8,479	m2	16.99	144,100
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<u>Total Wall Finishes</u>				<u>\$354,700</u>
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Description	Quantity	Unit	Rate	Amount
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B3 FITTINGS & EQUIPMENT

B31.1 Metals

Base Building:

Metal stair guardrails & handrails

New Exit stair rails and guard rails	324	m	375.00	121,500
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<u>Total Metals</u>				<u>\$121,500</u>
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Description	Quantity	Unit	Rate	Amount
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B3 FITTINGS & EQUIPMENT

B31.2 Millwork

Base Building:

Millwork

Allowance for millwork; to washrooms	45	m	500.00	22,500
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Environment Canada:

Millwork

Allowance for millwork; Kitchenette	24	m	1,000.00	24,000
Allowance for millwork; Shelves, filing cabinets	16	m	550.00	8,800

Department of Fisheries and Oceans:

Millwork

Allowance for millwork; Kitchenette	30	m	1,000.00	30,000
Allowance for millwork; Shelves, filing cabinets	20	m	550.00	11,000

Total Millwork				\$96,300
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Description	Quantity	Unit	Rate	Amount
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B3 FITTINGS & EQUIPMENT

B31.3 Specialties

Base Building:

Window Coverings

Allowance for new window coverings; to existing windows	480	m2	100.00	48,000
Window coverings; to new windows	45	m2	100.00	4,500

Washroom accessories

Allowance for Washroom accessories	20	sets	2,500.00	50,000
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Replace free standing building signage

1	no	10,000.00	10,000
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Environment Canada:

Interior Signage

Allowance for Interior signage	1	sum	2,500.00	2,500
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Department of Fisheries and Oceans:

Interior Signage

Allowance for Interior signage	1	sum	2,500.00	2,500
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Total Specialties

\$117,500

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Description	Quantity	Unit	Rate	Amount
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B3 FITTINGS & EQUIPMENT

B31.4 Furniture

Environment Canada:

Work stations

Allowance for New works stations (1830 x 2440)	170	no.	4,000.00	680,000
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Department of Fisheries and Oceans:

Work stations

Allowance for New works stations (1830 x 2440)	286	no.	4,000.00	1,144,000
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Temporary office area swing space in Annex

Allowance for 100 Workstations, 1 meeting room, 1 quiet room, 1 kitchenette (1 year total); to empty annex building	1	sum	125,000.00	125,000
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<u>Total Furniture</u>				<u>\$1,949,000</u>
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Description	Quantity	Unit	Rate	Amount
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B3 FITTINGS & EQUIPMENT

B32 Equipment

Environment Canada:

Kitchen equipment

Allowance for food service equipment	4	no.	2,500.00	10,000
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Department of Fisheries and Oceans:

Kitchen equipment

Allowance for food service equipment	5	no.	2,500.00	12,500
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<u>Total Equipment</u>				<u>\$22,500</u>
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Description	Quantity	Unit	Rate	Amount
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B3 FITTINGS & EQUIPMENT

B33.1 Elevators

Base Building:

Elevators

Elevator : passenger; 2 cars, 5 stops	2	cars	80,750.00	161,500
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Total Elevators	\$161,500
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Description	Quantity	Unit	Rate	Amount
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C1 MECHANICAL

C11 Plumbing and Drainage

Base Building:

Plumbing fixtures, water and drains	840	m2	50.00	42,000
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Environment Canada:

Plumbing fixtures, water and drains	3,215	m2	65.00	209,000
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Department of Fisheries and Oceans:

Plumbing fixtures, water and drains	3,015	m2	65.00	196,000
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<u>Total Plumbing and Drainage</u>				<u>\$447,000</u>
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Description	Quantity	Unit	Rate	Amount
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C1 MECHANICAL

C12 Fire Protection

Base Building:

Relocate and add sprinkler heads to suit	840	m2	28.00	23,500
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Environment Canada:

Relocate and add sprinkler heads to suit	3,215	m2	32.00	102,900
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Department of Fisheries and Oceans:

Relocate and add sprinkler heads to suit	3,015	m2	32.00	96,500
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Total Fire Protection				\$222,900
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Description	Quantity	Unit	Rate	Amount
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C1 MECHANICAL

C13 HVAC

Base Building:

Ductwork modifications, reheat changes to suit layout	840	m2	100.00	84,000
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Environment Canada:

Ductwork modifications, reheat changes to suit layout	3,215	m2	100.00	321,500
Exhaust upgrades to suit space plan	3,215	m2	25.00	80,400

Department of Fisheries and Oceans:

Ductwork modifications, reheat changes to suit layout	3,015	m2	100.00	301,500
Exhaust upgrades to suit space plan	3,015	m2	25.00	75,400

Total HVAC				\$862,800
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Description	Quantity	Unit	Rate	Amount
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C1 MECHANICAL

C14 Controls

Base Building:

Relocate thermostats add devices as required	840	m2	10.00	8,400
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Environment Canada:

Relocate thermostats add devices as required	3,215	m2	20.00	64,300
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Department of Fisheries and Oceans:

Relocate thermostats add devices as required	3,015	m2	20.00	60,300
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Total Controls				\$133,000
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Description	Quantity	Unit	Rate	Amount
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C2 ELECTRICAL

C21 Service & Distribution

Base Building:

Use existing distribution, relocate panels, add breakers	840	m2	7.50	6,300
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Environment Canada:

Use existing distribution, relocate panels, add breakers	3,215	m2	10.00	32,200
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Department of Fisheries and Oceans:

Use existing distribution, relocate panels, add breakers	3,015	m2	10.00	30,200
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<u>Total Service & Distribution</u>	<u>\$68,700</u>
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Description	Quantity	Unit	Rate	Amount
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C2 ELECTRICAL

C22 Lighting, Devices & Heating

Base Building:

Replace lighting, receptales to suit partitons	840	m2	65.00	54,600
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Environment Canada:

Replace lighting, receptales to suit partitons	3,215	m2	90.00	289,400
Direct connections for lab equipment	3,215	m2	15.00	48,200

Department of Fisheries and Oceans:

Replace lighting, receptales to suit partitons	3,015	m2	90.00	271,400
Direct connections for lab equipment	3,015	m2	15.00	45,200

<u>Total Lighting, Devices & Heating</u>				<u>\$708,800</u>
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Description	Quantity	Unit	Rate	Amount
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C2 ELECTRICAL

C23 Systems & Ancillaries

Base Building:

Fire alarm upgrades and relocation, Data and Comms upgrades and relocations, security	840	m2	55.00	46,200
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Environment Canada:

Fire alarm upgrades and relocation, Data and Comms upgrades and relocations, security	3,215	m2	75.00	241,100
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Department of Fisheries and Oceans:

Fire alarm upgrades and relocation, Data and Comms upgrades and relocations, security	3,015	m2	75.00	226,100
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<u>Total Systems & Ancillaries</u>	<u>\$513,400</u>			
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Description	Quantity	Unit	Rate	Amount
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D1 SITE WORK

D11.1 Site Preparation

Environment Canada:

Site preparation; 37% of cost to EC

Site clearing including vegetation

3,515 m² 1.99 7,000

Strip top soil 300mm dp and dispose off-site

390 m³ 39.98 15,600

Department of Fisheries and Oceans:

Site preparation; 63% of cost to DFO

Site clearing including vegetation

5,985 m² 2.01 12,000

Strip top soil 300mm dp and dispose off-site

1,131 m³ 39.96 45,200

Total Site Preparation

\$79,800

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Description	Quantity	Unit	Rate	Amount
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D1 SITE WORK

D11.2 Hard Surfaces

Environment Canada:

Hard surfaces; 37% of cost to EC				
New asphalt paving to parking lot	3,515	m ²	85.01	298,800
Rough grading - pavement				
Finish grading - pavement				
Granular "A" base				
Asphalt paving to parking lots				
Pavement markings : 4" wide				
Allowance for tying up to existing pavement				
Concrete curbs; 37% of cost to EC				
Concrete curbs	296	lm	67.57	20,000

Department of Fisheries and Oceans:

Hard surfaces; 63% of cost to DFO				
New asphalt paving to parking lot	5,985	m ²	85.00	508,700
Rough grading - pavement				
Finish grading - pavement				
Granular "A" base				
Asphalt paving to parking lots				
Pavement markings : 4" wide				
Allowance for tying up to existing pavement				
Concrete curbs; 63% of cost to DFO				
Concrete curbs	504	lm	67.46	34,000

Total Hard Surfaces				\$861,500
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Description	Quantity	Unit	Rate	Amount
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D1 SITE WORK

D11.3 Site Improvements

Environment Canada:

Chain-link fence; 100% of cost to EC

Install new chain-link fence (2.4m ht)

Install new manual slide gate

180	m	150.00	27,000
2	no.	2,500.00	5,000

Total Site Improvements

\$32,000

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Description	Quantity	Unit	Rate	Amount
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D1 SITE WORK

D12 Mechanical Site Services

Environment Canada:

Parking surface drains; 37% of cost to EC	3,515	m ²	5.00	17,600
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Department of Fisheries and Oceans:

Parking surface drains; 63% of cost to DFO	5,985	m ²	5.00	29,900
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<i>Total Mechanical Site Services</i>				<i>\$47,500</i>
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Description	Quantity	Unit	Rate	Amount
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D1 SITE WORK

D13 Electrical Site Services

Environment Canada:

Parking lot lighting	3,515	m ²	7.50	26,400
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Department of Fisheries and Oceans:

Parking lot lighting	5,985	m ²	7.50	44,900
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<u>Total Electrical Site Services</u>				<u>\$71,300</u>
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Description	Quantity	Unit	Rate	Amount
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D2 ANCILLARY WORK

D21.1 Demolition

Selective Demolition

Base Building:

Allowance to remove exterior wall to create door opening; to level 2	1	no	1,000.00	1,000
Remove GWB steel stud partition; to existing washrooms	174	m ²	20.16	3,500
Remove CMU partition; to existing washrooms	95	m ²	34.66	3,300
Allowance to remove exterior wall to create window opening (1,500x1,500mm);	20	no	1,000.00	20,000
Remove existing exit stair rails and guard rails	324	m	54.94	17,800
Remove existing lockers	162	no	50.00	8,100
Remove washroom cubicles	21	no	61.90	1,300
Remove washroom Accessories	10	sets	140.00	1,400
Allowance to remove existing free standing building signage	1	no	500.00	500
Remove existing interior doors	15	no	80.00	1,200
Mechanical disconnects and removal	840	m2	20.00	16,800
Electrical disconnects and removal	840	m2	20.00	16,800

Environment Canada:

Remove GWB steel stud partition;	1,700	m ²	20.00	34,000
Remove CMU partition;	1,118	m ²	34.98	39,100
Remove glazed steel stud partition;	55	m ²	52.54	2,900
Remove wall paint finish;	1,621	m ²	1.97	3,200
Remove floor finish;	163	m ²	6.13	1,000

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Description	Quantity	Unit	Rate	Amount
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D2 ANCILLARY WORK

D21.1 Demolition

Environment Canada: (con't)

Allowance to remove existing laboratory millwork;	163	m	49.78	8,100
Remove floor finish; to renovation areas	2,765	m ²	6.00	16,600
Remove acoustic ceiling tile finishes; to renovation areas	2,765	m ²	7.99	22,100
Remove existing interior doors	114	no	79.82	9,100
Mechanical disconnects and removal	2,905	m2	20.00	58,100
Electrical disconnects and removal	2,905	m2	20.00	58,100

Department of Fisheries and Oceans:

Remove GWB steel stud partition;	1,703	m ²	20.02	34,100
Remove CMU partition;	1,335	m ²	34.99	46,700
Remove wall paint finish;	2,645	m ²	2.00	5,300
Allowance to remove existing laboratory millwork;	189	m	49.87	9,400
Remove floor finish; to renovation areas	3,015	m ²	6.00	18,100
Remove ceiling gypsum finishes; to renovation areas	740	m ²	20.00	14,800
Remove acoustic ceiling tile finishes; to renovation areas	2,275	m ²	8.00	18,200
Remove existing interior doors	127	no	80.31	10,200
Mechanical disconnects and removal	3,015	m2	20.00	60,300
Electrical disconnects and removal	3,015	m2	20.00	60,300

<u>Total Demolition</u>				<u>\$621,400</u>
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Description	Quantity	Unit	Rate	Amount
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D2 ANCILLARY WORK

D21.2 Hazardous Materials

Base Building:

Allowance for removal of hazardous material	1	sum	1,000,000.00	1,000,000
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<u>Total Hazardous Materials</u>				<u>\$1,000,000</u>
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BTY Group

BTY is one of Canada's most successful and experienced Quantity Surveying and Cost Management consultancies.

Since 1977, BTY has earned a reputation for providing clients with professional and practical advice of the highest calibre. The diversity of our client base attests to our ability to apply critical analysis and thinking to the task at hand. We have provided support to clients for capital investment in the health, education, research, leisure, retail, residential and commercial sectors

We have provided consulting services for over \$15 billion of construction projects in the last thirty eight years.

For all the services we offer, BTY listens to your current and upcoming needs. We provide innovative alternatives and consistently deliver the required solutions with cost-conscious creativity. Since we serve clients whose needs span the entire life of an asset, from needs assessment through asset delivery and beyond, we believe that BTY integrated approach represents a better way to deliver KNOWLEDGE TO BUILD WITH.

Resources

The current complement of the BTY offices is 80 technical staff and includes Quantity Surveyors, Construction Estimators and Professional Engineers, all of whom have detailed knowledge and understanding of the many factors affecting construction costs. As a full service Quantity Surveying practice, we have the background required to provide a full range of services including capital cost planning, estimating, life cycle costing, risk and sustainable design analysis.

We make extensive use of a variety of automated systems during the performance of our duties. These systems include cost estimating software, word processing, spreadsheet and project scheduling programs that are used for the preparation of cost reports and other documentation. Our quantity take-offs are prepared with the assistance of computer driven digitizers that run in conjunction with our proprietary estimating program.

In addition to the resources based in our Calgary and Toronto offices, we can also draw on the project experience and knowledge of our associate offices that are located in Vancouver, Edmonton, Calgary, Saskatoon, St. Catharines, Toronto, Ottawa, Montreal, Los Angeles, Phoenix, Atlanta and recently opened office in Ankara, Turkey.



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