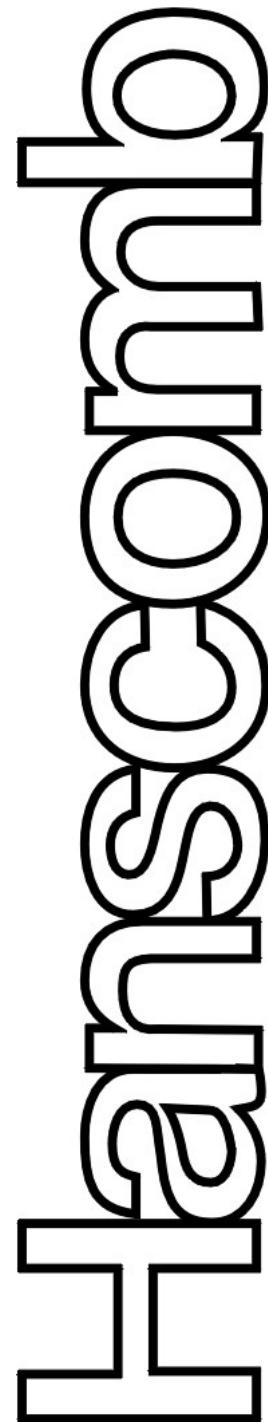


**CANADA MORTGAGE AND HOUSING CORPORATION  
HOUSING CONSTRUCTION COST COMPARISON  
IN EXPORT MARKETS  
(RESIDENTIAL HOUSING STUDY)**

**VOLUME 1 - EXECUTIVE SUMMARY  
FINAL REPORT**

**FEBRUARY 2003**



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**VOLUME 1 - EXECUTIVE SUMMARY  
FINAL REPORT**

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1. Study Background
2. Introduction
3. Elemental Estimates (Tabs 1 to 12 inclusive)

## **1. STUDY BACKGROUND**

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In the Spring of 2000 Hanscomb Limited was commissioned by the Research Division of Canada Mortgage and Housing Corporation (CMHC) to develop a construction cost database/spreadsheet for twelve countries to enable CMHC to compare the cost of house construction in these priority export markets.

The countries, which were to be compared against Canada as the base country, were Chile, China, France, Germany, Japan, Poland, Russia, South Korea, Spain, United Kingdom and United States of America with all material and labour costs were priced locally.

A second objective was to prepare a presentation package designed to communicate the findings of the project in a clear and concise manner.

### **NOTICE TO READER**

*The information contained under 'Volume 3' and 'Volume 4' is as received from the local contacts. Hanscomb has purposely not altered the responses received - including information the remarks column - unless a correction was needed to a rate. The remarks listed are mainly those entered by the local consultants. In no case has the information listed under the 'Description' column been altered (see sections '5.1 Standardization' and '5.7 Data Collection', under 'Volume 1 - Executive Summary'. Also of interest in Volume 1 would be 'Appendix A - Base Case Bill of Quantities, Plans & Specifications').*

*The reader should refer to the tables titled 'Exhibit E', contained under each country section of Volume 1 - Executive Summary', for a summary of the main difference between the base case 'wood frame' house and the locally priced 'wood frame' house as highlighted by the local consultant.*

## **2. STUDY OBJECTIVES**

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In terms of the primary objective, CMHC defines the components of this study under two specific cases:

### Case A – 12 Wood Frame Database/Spreadsheets

Case A shall be 12 parallel database/spreadsheets, representing Canadian wood frame technology constructed in each country. During the course of the development of this database design, the contractor shall generate ideas to enhance Canadian export opportunities that could promote the use of Canadian wood frame in these export countries. The “Canadian Wood Frame Construction” will be regarded as the base case for the study. The parallel database/spreadsheets for each country shall capture material specifications, quantities and the cost of construction on an “equivalent” 100m<sup>2</sup> wood frame house as constructed in that particular export country. Notations will fully document equivalent substitutions.

*Base Case Wood Frame House:* In 1986 Alberta Municipal Affairs, Housing Programs Division conducted comparative studies of the cost of a single detached house. CMHC defines this 100m<sup>2</sup> single-family bungalow as used in this study as the Base Case, which represent middle class standards and which will be used to demonstrate the use of the database/spreadsheets.

### Case B – 12 Traditional Database/Spreadsheets

Case B shall be 12 parallel database/spreadsheets, representing the 12 traditional or common construction technologies used in each of the countries. Cost implications related to other building components such as finishes, tiles, painting, roof finishes, door/window installations and electrical and mechanical systems will be expressed in each of the traditional construction systems. During the course of this database design, the contractor shall generate ideas to enhance Canadian export opportunities that could be applied to these traditional building practices. The Canadian traditional system being “Canadian Wood Frame Construction” will be regarded as the base case of the study. The parallel database/spreadsheets for each country shall capture material specifications, quantities and the cost of construction on the “equivalent” 100m<sup>2</sup> house constructed using traditional methods in that particular export country.

CMHC identified the following traditional systems as a basis for the “Traditional Houses”:

- Canada (Canadian wood frame) (base case)
- Chile (concrete frame with block infill)
- China (brick)
- France (masonry)
- Germany (masonry)
- Japan (post & beam with earthquake technology)
- Poland (concrete frame with infill block)
- Russia (masonry)
- South Korea (reinforced concrete)
- Spain (masonry)
- UK (masonry)
- USA (wood frame hurricane or earthquake technology)

### **3. STUDY SCOPE**

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As part of the study the following will apply:

- Within each country this study will focus on similar population centres identifying city indexing comparative costing factors.
- The study requires the selection of appropriate sizes of cities and shall identify where price indexing is available or can be extrapolated from existing information.
- Note shall be taken of anomalies in the construction process such as in the UK and German markets where the purchaser arranges carpet purchases and installation.
- Material/product and construction differences or variations within each country will be identified and a list of substitutions shall be noted.

#### **4. BASE DOCUMENTATION**

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The following documents were provided by CMHC:

- For the 100m<sup>2</sup> single-family bungalow noted above, CMHC provided copies of the basement, main floor and roof plans, sections and elevations.
- In addition, a Bill of Quantities was provided broken into trade based items with units of measure and quantities attached.

These documents formed our frame of reference for this study and will be used to compare materials and component parts of all countries under the study.

A copy of the documents as well as the plans is included in Appendix A in this volume.

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## 5. METHOD OF APPROACH

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### 5.1 Standardization

It is understood that this study will involve the research efforts of local consultants in each of the eleven countries as well as Canada. Accordingly, a consistent mandate and a clear set of instructions were provided to each consultant as to how the costing material had to be collected, assembled and presented. It should be noted that the consultants priced all material and labour costs locally.

In order to ensure standardized results, the following survey methodology was adopted for the *Base Case Wood Frame House*:

1. Prior to sending out the surveys to the respondents:
  - a. The descriptions listed in the surveys were verified against the base case information.
  - b. The quantities listed in the surveys were verified against the base case information.
  - c. The trade-based bill of quantities was computerized into a standard and consistent MS Excel document with item descriptions and quantities locked down and access permitted to the Unit Rate and Remarks columns only.
  - d. The elemental companion document that displayed cost data at the building's systems and component level the trade-based document was computerized and automatically linked to the trade-based survey form.
  - e. The trade-based and elemental summary sheets were computerized and automatically linked to the underlying survey forms.
  - f. The remaining base formulas locked down to avoid potential data corruption
2. The survey forms were sent out with:
  - a. The country specific cover letter that outlined past issues and gave consistent instruction for survey completion
  - b. The sketch plans illustrating the house to be priced
3. The survey forms contained Canadian base case pricing and built-in cost ratio calculations that allowed:
  - a. The survey respondent to easily review results of the survey prior to forwarding to Hanscomb's attention
  - b. Hanscomb to more easily identify possible anomalies that required follow-up
4. Hanscomb reviewed the information upon receipt and contacted the survey respondent where necessary
5. In summary, the survey results are more directly comparable because:
  - a. The substitution of materials was greatly reignited
  - b. The substitution of quantities was not permitted
  - c. The review of results was been greatly facilitated through the use of built in cost ratios
  - d. The information was reviewed for anomalies at both the 'trade' level as well as at the 'elemental' level

The Trade and Elemental Summaries were also linked to several spreadsheet arrangements and all data being part of the required database, designed for future updating. These summaries, along with the actual survey forms themselves, represent the detail costing information included under Volumes 3 and 4 of the current report.

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5. METHOD OF APPROACH (cont'd)

---

5.2 Selection of Cities and Indexing

In collaboration with CMHC, the following cities were selected for study in each country. The first city noted is the primary location and the latter, the secondary city. The indexing factor denotes the overall approximate relative cost differences between each city at the selected study date of August 31, 2000. This location factor is used to adjust the estimates from the primary city to the secondary city.

Country/City	Index Factor	Index Dates	Base City
<b>Canada</b>			
Toronto	1.000	31-Aug-00	X
Ottawa	0.967	31-Aug-00	
<b>Chile</b>			
Santiago	1.000	31-Aug-00	X
Valparaiso	1.000	31-Aug-00	
<b>China</b>			
Beijing	1.000	31-Aug-00	X
Shanghai	0.936	31-Aug-00	
<b>France</b>			
Paris	1.000	31-Aug-00	X
Lyons	0.950	31-Aug-00	
<b>Germany</b>			
Berlin	1.000	31-Aug-00	X
Hamburg	1.050	31-Aug-00	
<b>Japan</b>			
Tokyo	1.000	31-Aug-00	X
Nagoya	0.950	31-Aug-00	
<b>Poland</b>			
Warsaw	1.000	31-Aug-00	X
Gdansk	0.950	31-Aug-00	
<b>Russia</b>			
Moscow	1.000	31-Aug-00	X
St. Petersburg	0.940	31-Aug-00	
<b>South Korea</b>			
Seoul	1.000	31-Aug-00	X
Pusan	1.080	31-Aug-00	
<b>Spain</b>			
Madrid	1.000	31-Aug-00	X
Barcelona	1.000	31-Aug-00	
<b>United Kingdom</b>			
London	1.000	31-Aug-00	X
Birmingham	0.800	31-Aug-00	
<b>United States of America</b>			
Atlanta	1.000	31-Aug-00	X
Chicago	1.200	31-Aug-00	

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## **5. METHOD OF APPROACH (cont'd)**

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### **5.3 Selection of Country Consultants**

As part of this mandate, Hanscomb contracted with local cost consultants in each of the countries under this study. Each consultant was given specific instructions as to pricing requirements in accordance with CMHC's terms of reference, particularly in regards to material substitutions. Base documentation was provided to each comprising the unpriced Bill of Quantities, Plans & Specifications.

With respect to the "traditional" house requirements, each local consultant was required to identify typical accommodation unit for a middle class family and to provide a cost breakdown sufficient to enable cost comparison with the Canadian Wood Frame House (Base House) at the trade level.

The consultants were directed to price all material and labour costs locally.

### **5.4 Currency Exchanges**

The following table provides the relevant currency exchange factors for each country at the study date. These factors are used to compare cost estimates for respective countries by converting all costs to Canadian dollars.

<b>Country</b>	<b>Currency Name</b>	<b>Currency Symbol</b>	<b>Currency Used in Pricing Estimate</b>	<b>Exchange Estimate Currency Pricing to CDN</b>	<b>CDN Exchange to Local Currency</b>	<b>Currency Exchange Rate Date</b>
Canada	Canadian Dollar	CAD	CAD	1.000000	1.000000	N/A
Chile	Peso	CLP	CAD	1.000000	0.002618	31Aug00
China	Renminbi	CNY	CNY	0.177747	0.177747	31Aug00
France	Franc	FRF	FRF	0.199147	0.199147	31Aug00
Germany	Mark	DEM	DEM	0.667907	0.667907	31Aug00
Japan	Yen	JPY	JPY	0.013796	0.013796	31Aug00
Poland	Zloty	PLZ	USD	1.471500	0.336420	31Aug00
Russia	Rouble	SUR	USD	1.471500	0.052983	31Aug00
South Korea	Won	KRW	KRW	0.001327	0.001327	31Aug00
Spain	Peseta	ESP	ESP	0.007851	0.007851	31Aug00
United Kingdom	Pound	GBP	GBP	2.131909	2.131909	31Aug00
United States of America	US Dollar	USD	USD	1.471500	1.471500	31Aug00

## **5. METHOD OF APPROACH (cont'd)**

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### **5.5 Development of "Case A" Base Documentation (Base Case Wood Frame House)**

The Bill of Quantities provided by CMHC for the 100m<sup>2</sup> wood framed house was developed in Excel format and broken down into trade headings and items. These items were priced as unit rates appropriate for this type of residential construction in Toronto at the time period of the study. This forms the Standard Base Case (or Baseline) document against which all country data is collected, evaluated and compared against Canadian Costs.

It is recognised that when analysing cost data for export opportunities that material cost comparison is of primary importance, however a broader analysis of the components (eg: wall systems, roof systems, wood structure etc.) will serve to highlight a greater export potential.

Accordingly, in addition, using the trade based cost data noted above, we have developed a companion document in elemental format which identifies the cost of components and systems of the building.

These documents will be used to compare material and system costs against those developed for each country under this study. Example Summary Pages of both the Trade Format and Elemental Format using United Kingdom costs are included in item 5.7 to this Summary. Full details of items and pricing, in both trades and elements, are included in Volumes 3 and 4 respectively.

### **5.6 Development of "Case B" Documentation (Traditional House)**

Volume 2 of this study contains the details of 'Case B' real case studies of traditional houses pertaining to a traditional house in each of the eleven countries under analysis. As well we noted in the introduction to Volume 2, cost comparison cannot reasonably nor meaningfully be made against the Canadian Baseline house for the following reasons:

- The Canadian base case house is a 100m<sup>2</sup> single storey, wood frame construction with a basement.
- The area of the basement is not included in the above area (which is customary in Canada) but the cost of the basement is included in the overall cost.
- For the comparison with country traditional houses, only one (Germany) had a basement.
- The remainder of the study countries houses were one storey, two storeys or three storeys.
- Layout configuration, and material specification and gross floor area differed for each against the Canadian house

In consequence a methodology had to be adopted to ensure a like for like comparison could meaningfully be made against the total cost of each house.

## 5. METHOD OF APPROACH (cont'd)

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### 5.6 Development of "Case B" Documentation (cont'd) *(Traditional House)*

The preamble to Volume 2 describes this methodology and description for its use. Essentially, the detailed cost of the Canadian House was recalculated to arrive at a theoretical configuration, namely:

Base case, single storey, with basement	100%
Single storey, no basement	89% of Base Case
Two storey, no basement	83% of Base Case
Three storey, no basement	78% of Base Case

In overview, the resulting 'ratio to baseline' adjustment factors were generated from adjustments made to the Canadian 'traditional' house (the 'wood frame' house outlined under section 5.5 on page 11 of 'Volume 1').

These adjustment factors allow a better comparison between a country's 'traditional' house (which for example typically did not include a basement) and the locally priced 'wood frame' house (which for example included a basement as per CMHC specification document). The resulting comparison is included in an attempt to capture the 'flavour' for comparable construction within a given country.

No adjustments were made to the detailed information received from the consultants.

Depending upon the configuration of the country traditional house, its cost expressed in Canadian equivalent dollars was factored to a 100m<sup>2</sup> housing unit and the above factors were applied to compare against its Canadian equivalent. A detailed description is included in Volume 2 together with full details of the cost comparison, on an elemental basis, and commentary relative to export opportunities.

## **5. METHOD OF APPROACH (cont'd)**

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### **5.7 Data Collection**

As previously noted, the unpriced Bills of Quantities for the Base Case house was sent to each local consultant electronically in trade format together with the linked elemental document. The document permitted only the insertion of unit rates as well as the 'Remarks' column for local material substitutions, all other fields being locked down. Plans and sections of the Base Case House were also sent together with specific instructions as to the method of pricing.

The consultants were directed to price all material and labour costs locally.

For better understanding of the data collection methodology, and interpretation the following two pages Exhibits A & B provide examples at summary level for the UK wood frame house both in trade breakdown and elemental breakdown respectively. It should be noted that using this system, cost comparisons can be carried out at the trade or elemental level. The following describes the Exhibits:

#### Summary Trade Breakdown (Exhibit A)

This document is a by-product of the detailed trade survey to which it is linked. The description of the main column headings are as follows:

"Description":	Lists the trade item under review.
"Amount as priced":	Estimate amount as costed in the currency noted.
"Converted to Canadian \$":	Estimate amount as costed at the exchange rate noted in item 5.4 herein.
"CAD Amount in Canada":	Estimate amount for same item as costed in Canada in Canadian Dollars
"Ratios to Canada GBD/CAD":	The amount costed in GBD (or applicable local currency) divided by the amount costed in CAD in Canada. This provides a parity index, essentially the multiple of local currency to Canadian Currency.
"Ratios to Canada CAD/CAD":	The amount costed in GBD converted first to CAD then divided by the amount costed in CAD in Canada. This provides the multiple of how the item compares with its Canadian equivalent and is an indicator of a possible potential market initiative.
"Remarks":	Records any special comment related to the item. For example, a local substitution. The remarks are mainly found in the survey detail sheets.

#### Summary Elemental Breakdown (Exhibit B)

This document is a by-product of the trade breakdown to which it is linked. The field headings are essentially the same however the breakdown of cost relates to components, elements or systems of the building.

**5. METHOD OF APPROACH (cont'd)**

**5.7 Data Collection (cont'd)**

Example of Exhibit A:

### Hanscomb

CMHC HOUSING STUDY  
100M2 HOUSE TIMBER FRAMED  
UNITED KINGDOM

#### TRADE SUMMARY

Costing Date: August 2000  
Currency Rate: (CAD/GBP) 2.1319090  
Report Date: January 20, 2003 R

Description	Amount as Priced GBP	Converted to Canadian \$	CAD Amount IN CANADA	Ratios to Canada GBP/CAD	Ratios to Canada CAD/CAD	Remarks
1. Excavate, Backfill, Gravel	4,939 GBP	10,529 CAD	2,138 CAD	2.31	4.92	
2. Concrete Steel & Formwork	10,994 GBP	23,437 CAD	9,505 CAD	1.16	2.47	
3. Dampproofing	1,269 GBP	2,704 CAD	902 CAD	1.41	3.00	
4a. Rough Carpentry (Materials Only)						
- Lumber	2,556 GBP	5,448 CAD	3,335 CAD	0.77	1.63	
- Plywood	3,944 GBP	8,409 CAD	2,526 CAD	1.56	3.33	
- Trusses	985 GBP	2,100 CAD	2,190 CAD	0.45	0.96	
- Stairs	371 GBP	791 CAD	768 CAD	0.48	1.03	
- Deck	1,052 GBP	2,242 CAD	1,717 CAD	0.61	1.31	
Subtotal Rough Carpentry (Materials)	8,908 GBP	18,990 CAD	10,535 CAD	0.85	1.80	
4b. Rough Carpentry (Framing Labour)	7,000 GBP	14,923 CAD	7,650 CAD	0.92	1.95	
5. Roofing	2,520 GBP	5,372 CAD	2,660 CAD	0.95	2.02	
6a. Windows (Materials Only)	1,892 GBP	4,034 CAD	3,085 CAD	0.61	1.31	
6b. Doors	1,607 GBP	3,426 CAD	1,260 CAD	1.28	2.72	
7. Exterior Cladding/Roof Elements	7,126 GBP	15,191 CAD	6,685 CAD	1.07	2.27	
8. Plumbing	3,750 GBP	7,995 CAD	3,000 CAD	1.25	2.66	
9. Electrical	6,250 GBP	13,324 CAD	3,350 CAD	1.87	3.98	
10. Heating	5,500 GBP	11,725 CAD	3,500 CAD	1.57	3.35	
11. Speciality Items	1,779 GBP	3,792 CAD	3,615 CAD	0.49	1.05	
12. Drywall, Insulation, Caulking	5,175 GBP	11,033 CAD	6,270 CAD	0.83	1.76	
13. Cabinets & Vanities						
- Material	2,465 GBP	5,255 CAD	3,450 CAD	0.71	1.52	
- Labour	240 GBP	512 CAD	700 CAD	0.34	0.73	
Subtotal Cabinet & Vanities	2,705 GBP	5,767 CAD	4,150 CAD	0.65	1.39	
14. Painting, Stain, Lacquer	2,398 GBP	5,113 CAD	2,040 CAD	1.18	2.51	
15. Interior Finishing		-				
- Doors	1,963 GBP	4,185 CAD	820 CAD	2.39	5.10	
- Casings, Trims, Handrails	1,474 GBP	3,142 CAD	1,724 CAD	0.85	1.82	
- Door Hardware	377 GBP	804 CAD	346 CAD	1.09	2.32	
- Washroom Accessories	589 GBP	1,256 CAD	802 CAD	0.73	1.57	
Subtotal Interior Finishing	4,403 GBP	9,387 CAD	3,692 CAD	1.19	2.54	
16. Floor Coverings	2,730 GBP	5,820 CAD	4,190 CAD	0.65	1.39	
17. Miscellaneous & Fees	12,141 GBP	25,884 CAD	7,040 CAD	1.72	3.68	
Total Wood Frame House Cost:	93,084 GBP	198,447 CAD	85,267 CAD	1.09	2.33	
Cost per m <sup>2</sup> :	930.84 GBP	1,984.47 CAD	852.67 CAD	1.09	2.33	
	(1)	(2)	(3)			

**EXHIBIT A**

## 5. METHOD OF APPROACH (cont'd)

### 5.7 Data Collection (cont'd)

Example of Exhibit B:

Project : CMHC HOUSING STUDY		ELEMENTAL COST SUMMARY					Costing Date: August 2000		
Location : 100M2 HOUSE TIMBER FRAMED		Currency Rate: 2.1319090 CAD/GBP					Report Date: January 20, 2003 R		
Location : UNITED KINGDOM							GFA: 100 m2		
Element		Elemental Cost		Elemental		Rate per m2		%	
		Quantity		GBP		GBP			
<b>A SHELL</b>		100 m2		45,585		455.85		49.0	
<b>A1 SUBSTRUCTURE</b>				5,928		59.28		6.4	
A11 Foundations	1.000	100 m2	16.74	1,674	16.74	16.74			
A12 Basement Excavations	3.000	300 m3	14.18	4,254	42.54	42.54			
<b>A2 STRUCTURE</b>				7,424		74.24		8.0	
A21 Lowest Floor Construction	1.000	100 m2	12.52	1,252	12.52	12.52			
A22 Upper Floor Construction	1.000	100 m2	35.34	3,534	35.34	35.34			
A23 Roof Construction	1.000	100 m2	26.39	2,639	26.39	26.39			
<b>A3 EXTERIOR CLADDING</b>				25,732		257.32		27.6	
A31 Walls Below Grade	0.980	98 m2	89.90	8,810	88.10	88.10			
A32 Walls Above Grade	0.980	98 m2	71.79	7,035	70.35	70.35			
A33 Windows and Entrances	0.130	13 no.	289.28	3,761	37.61	37.61			
A34 Roof Coverings	1.400	140 m2	30.64	4,290	42.90	42.90			
A35 Projections	0.250	25 m2	73.45	1,836	18.36	18.36			
<b>A4 HOUSE FRAMING (LABOUR)</b>				6,500		65.00		7.0	
A41 House Framing Labour	1.000	100 m2	65.00	6,500	65.00	65.00			
<b>B INTERIORS</b>		100 m2		17,392		173.92		18.7	
<b>B1 PARTITIONS &amp; DOORS</b>				5,344		53.44		5.7	
B11 Partitions	2.050	205 m2	15.24	3,124	31.24	31.24			
B12 Doors	0.110	11 no.	201.82	2,220	22.20	22.20			
<b>B2 FINISHES</b>				5,259		52.59		5.6	
B21 Floor Finishes	1.000	100 m2	28.62	2,862	28.62	28.62			
B22 Ceiling Finishes	1.000	100 m2	3.22	322	3.22	3.22			
B23 Wall finishes	4.160	416 m2	4.99	2,075	20.75	20.75			
<b>B3 FITTINGS &amp; EQUIPMENT</b>				6,790		67.90		7.3	
B31 Fittings & Fixtures	1.000	100 m2	50.40	5,040	50.40	50.40			
B32 Equipment	1.000	100 m2	17.50	1,750	17.50	17.50			
<b>C SERVICES</b>		100 m2		15,500		155.00		16.7	
<b>C1 MECHANICAL</b>				9,250		92.50		9.9	
C11 Mechanical	1.000	100 m2	92.50	9,250	92.50	92.50			
<b>C2 ELECTRICAL</b>				6,250		62.50		6.7	
C21 Electrical	1.000	100 m2	62.50	6,250	62.50	62.50			
<b>NET BUILDING COST - EXCLUDING SITE</b>					78,477	784.77	84.3		
<b>D1 SITE WORK</b>				2,466		24.66		2.6	
D11 Site Development	0.010	1 sum	2,466	2,466	24.66	24.66			
<b>NET BUILDING COST - INCLUDING SITE</b>					80,943	809.43	87.0		
<b>Z1 GENERAL REQUIREMENTS &amp; FEE</b>			15.0%		12,141	121.41			
Z11 General Requirements			0.0%		12,141	121.41			
Z12 Fee			0		0	0.00			
<b>TOTAL EXCLUDING CONTINGENCIES</b>					93,084	930.84	100.0		

(1)

(2)

(3)

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EXHIBIT B

## 5. METHOD OF APPROACH (cont'd)

### 5.8 Comparison of Wood Frame (Base Case) House with Country Traditional House

Volume 2 of this study contains the details of each of the country traditional houses received from the country consultants. The information was submitted in a form of various levels of detail but include:

- Description of House and Net or Gross Floor Area
- Drawings and Plans (where available)
- Outline Specifications
- Construction Cost Trade Breakdown

As discussed in the methodology preceding, comparison of costs between each country traditional house to the Canadian 'Baseline' housing can only be realistically carried out when like configurations or layouts are similar. For example a traditional two storey house without a basement should only be compared against a similar Canadian equivalent. The methodology describes the adjusting factors applied to the baseline house. The following are summary results shown on a cost per m<sup>2</sup> basis before and after this adjustment. All CAD/m<sup>2</sup> figures have been rounded.

Comparison \$/m<sup>2</sup> of Canadian 'Adjusted' Baseline to Traditional

Country	Canadian Baseline		Canadian Baseline Adjusted		Country Traditional	
	CAD/m <sup>2</sup>	Ratio (1)	CAD/m <sup>2</sup>	CAD/m <sup>2</sup>	Ratio	House Layout
Canada	853	1.00	853	853	1.00	1 storey w/ basement
Chile	945	0.89	831	709	1.17	1 storey w/o basement
China	1,008	0.89	897	763	1.18	1 storey w/o basement
France	1,102	0.89	981	742	1.32	1 storey w/o basement
Germany	1,746	1.00	1,746	1,410	1.23	1 storey w/ basement
Japan	3,001	0.83	2,499	2,507	0.99	2 storey w/o basement
Poland	992	0.83	824	936	0.88	2 storey w/o basement
Russia	873	0.78	681	663	1.03	3 storey w/o basement
South Korea	1,075	0.83	882	1,092	0.81	2 storey w/o basement
Spain	1,166	0.83	968	504	1.92	2 storey w/o basement
United Kingdom	1,984	0.83	1,647	1,582	1.04	2 storey w/o basement
USA	1,160	0.89	1,033	933	1.11	1 storey w/o basement

(1) The selection of the ratio used in obtaining the 'Canadian Baseline Adjusted' cost per m<sup>2</sup> is based on the 'House Layout' for the country's traditional house. The details on how these ratios were calculated can be found under section '5.6 Development of "Case B" Documentation' of the current report Volume.

The charts that follow outline the elemental estimate for the Canadian baseline house layouts.

The reader can also refer to the table titled 'Comparison \$/m<sup>2</sup> of Canadian Traditional (Baseline) to Traditional' found on page 21 of the current volume.

## 5. METHOD OF APPROACH (cont'd)

### 5.8 Comparison of Wood Frame (Base Case) House with Country Traditional House (cont'd)

Canadian Equivalent - 1 Storey Wood Frame Construction With Basement

Project : CMHC HOUSING STUDY : 100M2 HOUSE TIMBER FRAMED		ELEMENTAL COST SUMMARY					Costing Date: August 2000 Report Date: December 10, 2002 GFA: 100 m2		
Location : CANADA		Initial Estimate to Local: (CAD/CAD)			1.0000000				
		Local to CAD: (CAD/CAD)			1.0000000				
Element	Ratio to GFA	Elemental Cost	Elemental CAD	Rate per m2 CAD	%	Converted to Canadian \$ IN CANADA	Rate per m2 CAD/CAD	Ratios to Canada CAD/CAD	
		Quantity	Unit rate						
A SHELL		100 m2		41,618	416.18	48.8	416.18	416.18	1.00 1.00
A1 SUBSTRUCTURE				3,379	33.79	4.0	33.79	33.79	1.00 1.00
A11 Foundations	1.000	100 m2	16.81	1,681	16.81		16.81	16.81	1.00 1.00
A12 Basement Excavations	3.000	300 m3	5.66	1,698	16.98		16.98	16.98	1.00 1.00
A2 STRUCTURE				7,678	76.78	9.0	76.78	76.78	1.00 1.00
A21 Lowest Floor Construction	1.000	100 m2	11.40	1,140	11.40		11.40	11.40	1.00 1.00
A22 Upper Floor Construction	1.000	100 m2	32.08	3,208	32.08		32.08	32.08	1.00 1.00
A23 Roof Construction	1.000	100 m2	33.30	3,330	33.30		33.30	33.30	1.00 1.00
A3 EXTERIOR CLADDING				24,561	245.61	28.8	245.61	245.61	1.00 1.00
A31 Walls Below Grade	0.980	98 m2	67.30	6,596	65.96		65.96	65.96	1.00 1.00
A32 Walls Above Grade	0.980	98 m2	71.53	7,010	70.10		70.10	70.10	1.00 1.00
A33 Windows and Entrances	0.130	13 no.	354.62	4,610	46.10		46.10	46.10	1.00 1.00
A34 Roof Coverings	1.400	140 m2	33.43	4,680	46.80		46.80	46.80	1.00 1.00
A35 Projections	0.250	25 m2	66.60	1,665	16.65		16.65	16.65	1.00 1.00
A4 HOUSE FRAMING (LABOUR)				6,000	60.00	7.0	60.00	60.00	1.00 1.00
A41 House Framing Labour	1.000	100 m2	60.00	6,000	60.00		60.00	60.00	1.00 1.00
B INTERIORS		100 m2		21,715	217.15	25.5	217.15	217.15	1.00 1.00
B1 PARTITIONS & DOORS				4,486	44.86	5.3	44.86	44.86	1.00 1.00
B11 Partitions	2.050	205 m2	16.80	3,445	34.45		34.45	34.45	1.00 1.00
B12 Doors	0.110	11 no.	94.64	1,041	10.41		10.41	10.41	1.00 1.00
B2 FINISHES				6,818	68.18	8.0	68.18	68.18	1.00 1.00
B21 Floor Finishes	1.000	100 m2	43.56	4,356	43.56		43.56	43.56	1.00 1.00
B22 Ceiling Finishes	1.000	100 m2	10.00	1,000	10.00		10.00	10.00	1.00 1.00
B23 Wall Finishes	4.160	416 m2	3.52	1,463	14.63		14.63	14.63	1.00 1.00
B3 FITTINGS & EQUIPMENT				10,411	104.11	12.2	104.11	104.11	1.00 1.00
B31 Fittings & Fixtures	1.000	100 m2	68.36	6,836	68.36		68.36	68.36	1.00 1.00
B32 Equipment	1.000	100 m2	35.75	3,575	35.75		35.75	35.75	1.00 1.00
C SERVICES		100 m2		9,850	98.50	11.6	98.50	98.50	1.00 1.00
C1 MECHANICAL				6,500	65.00	7.6	65.00	65.00	1.00 1.00
C11 Mechanical	1.000	100 m2	65.00	6,500	65.00		65.00	65.00	1.00 1.00
C2 ELECTRICAL				3,350	33.50	3.9	33.50	33.50	1.00 1.00
C21 Electrical	1.000	100 m2	33.50	3,350	33.50		33.50	33.50	1.00 1.00
<b>NET BUILDING COST - EXCLUDING SITE</b>				<b>73,183</b>	<b>731.83</b>	<b>85.8</b>	<b>731.83</b>	<b>731.83</b>	<b>1.00 1.00</b>
D1 SITE WORK				5,044	50.44	5.9	50.44	50.44	1.00 1.00
D11 Site Development	0.010	1 sum	5,044	5,044	50.44		50.44	50.44	1.00 1.00
<b>NET BUILDING COST - INCLUDING SITE</b>				<b>78,227</b>	<b>782.27</b>	<b>91.7</b>	<b>782.27</b>	<b>782.27</b>	<b>1.00 1.00</b>
Z1 GENERAL REQUIREMENTS & FEE				<b>7,040</b>	<b>70.40</b>		<b>70.40</b>	<b>70.40</b>	<b>1.00 1.00</b>
Z11 General Requirements		9.0%		7,040	70.40		70.40	70.40	1.00 1.00
Z12 Fee		0.0%		0	0.00		0.00	-	N/A N/A
<b>TOTAL EXCLUDING CONTINGENCIES</b>				<b>85,267</b>	<b>852.67</b>	<b>100.0</b>	<b>852.67</b>	<b>852.67</b>	<b>1.00 1.00</b>

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## 5. METHOD OF APPROACH (cont'd)

### 5.8 Comparison of Wood Frame (Base Case) House with Country Traditional House (cont'd)

Canadian Equivalent - 1 Storey Wood Frame Construction Without Basement

Project : CMHC HOUSING STUDY		ELEMENTAL COST SUMMARY					Costing Date: August 2000			
Location : CANADA		Initial Estimate to Local: (CAD/CAD)			1.0000000	Report Date: February 25, 2003				
		Local to CAD: (CAD/CAD)			1.0000000	GFA: 100 m <sup>2</sup>				
Element	Ratio to GFA	Elemental Cost	Elemental CAD	Rate per m <sup>2</sup> CAD	%	Converted to Canadian \$	Rate per m <sup>2</sup> BASELINE	Ratios to BASELINE CAD/CAD	Ratios to BASELINE CAD/CAD	
		Quantity	Unit rate							
<b>A SHELL</b>		100 m <sup>2</sup>		32,854	328.54	43.4	328.54	416.18	0.79	0.79
<b>A1 SUBSTRUCTURE</b>				2,021	20.21	2.7	20.21	33.79	0.60	0.60
A11 Foundations	1.000	100 m <sup>2</sup>	16.81	1,681	16.81		16.81	16.81	1.00	1.00
A12 Basement Excavations	0.600	60 m <sup>3</sup>	5.66	340	3.40		3.40	16.98	0.20	0.20
<b>A2 STRUCTURE</b>				4,470	44.70	5.9	44.70	76.78	0.58	0.58
A21 Lowest Floor Construction	1.000	100 m <sup>2</sup>	11.40	1,140	11.40		11.40	11.40	1.00	1.00
A22 Upper Floor Construction	0.000	0 m <sup>2</sup>	0.00	0	0.00		0.00	32.08	-	-
A23 Roof Construction	1.000	100 m <sup>2</sup>	33.30	3,330	33.30		33.30	33.30	1.00	1.00
<b>A3 EXTERIOR CLADDING</b>				21,263	212.63	28.1	212.63	245.61	0.87	0.87
A31 Walls Below Grade	0.490	49 m <sup>2</sup>	67.30	3,298	32.98		32.98	65.96	0.50	0.50
A32 Walls Above Grade	0.980	98 m <sup>2</sup>	71.53	7,010	70.10		70.10	70.10	1.00	1.00
A33 Windows and Entrances	0.130	13 no.	354.62	4,610	46.10		46.10	46.10	1.00	1.00
A34 Roof Coverings	1.400	140 m <sup>2</sup>	33.43	4,680	46.80		46.80	46.80	1.00	1.00
A35 Projections	0.250	25 m <sup>2</sup>	66.60	1,665	16.65		16.65	16.65	1.00	1.00
<b>A4 HOUSE FRAMING (LABOUR)</b>				5,100	51.00	6.7	51.00	60.00	0.85	0.85
A41 House Framing Labour	1.000	100 m <sup>2</sup>	51.00	5,100	51.00		51.00	60.00	0.85	0.85
<b>B INTERIORS</b>		100 m <sup>2</sup>		21,715	217.15	28.7	217.15	217.15	1.00	1.00
<b>B1 PARTITIONS &amp; DOORS</b>				4,486	44.86	5.9	44.86	44.86	1.00	1.00
B11 Partitions	2.050	205 m <sup>2</sup>	16.80	3,445	34.45		34.45	34.45	1.00	1.00
B12 Doors	0.110	11 no.	94.64	1,041	10.41		10.41	10.41	1.00	1.00
<b>B2 FINISHES</b>				6,818	68.18	9.0	68.18	68.18	1.00	1.00
B21 Floor Finishes	1.000	100 m <sup>2</sup>	43.56	4,356	43.56		43.56	43.56	1.00	1.00
B22 Ceiling Finishes	1.000	100 m <sup>2</sup>	10.00	1,000	10.00		10.00	10.00	1.00	1.00
B23 Wall finishes	4.160	416 m <sup>2</sup>	3.52	1,463	14.63		14.63	14.63	1.00	1.00
<b>B3 FITTINGS &amp; EQUIPMENT</b>				10,411	104.11	13.8	104.11	104.11	1.00	1.00
B31 Fittings & Fixtures	1.000	100 m <sup>2</sup>	68.36	6,836	68.36		68.36	68.36	1.00	1.00
B32 Equipment	1.000	100 m <sup>2</sup>	35.75	3,575	35.75		35.75	35.75	1.00	1.00
<b>C SERVICES</b>		100 m <sup>2</sup>		9,850	98.50	13.0	98.50	98.50	1.00	1.00
<b>C1 MECHANICAL</b>				6,500	65.00	8.6	65.00	65.00	1.00	1.00
C11 Mechanical	1.000	100 m <sup>2</sup>	65.00	6,500	65.00		65.00	65.00	1.00	1.00
<b>C2 ELECTRICAL</b>				3,350	33.50	4.4	33.50	33.50	1.00	1.00
C21 Electrical	1.000	100 m <sup>2</sup>	33.50	3,350	33.50		33.50	33.50	1.00	1.00
<b>NET BUILDING COST - EXCLUDING SITE</b>				64,418	644.18	85.1	644.18	731.83	0.88	0.88
<b>D1 SITE WORK</b>				5,044	50.44	6.7	50.44	50.44	1.00	1.00
D11 Site Development	0.010	1 sum	5,044	5,044	50.44		50.44	50.44	1.00	1.00
<b>NET BUILDING COST - INCLUDING SITE</b>				69,462	694.62	91.7	694.62	782.27	0.89	0.89
<b>Z1 GENERAL REQUIREMENTS &amp; FEE</b>				6,252	62.52		62.52	70.40	0.89	0.89
Z11 General Requirements		9.0%		6,252	62.52		62.52	70.40	0.89	0.89
Z12 Fee		0.0%		0	0.00		0.00	-	N/A	N/A
<b>TOTAL EXCLUDING CONTINGENCIES</b>				75,714	757.14	100.0	757.14	852.67	0.89	0.89

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## 5. METHOD OF APPROACH (cont'd)

### 5.8 Comparison of Wood Frame (Base Case) House with Country Traditional House (cont'd)

Canadian Equivalent - 2 Storey Wood Frame Construction Without Basement

Project : CMHC HOUSING STUDY		ELEMENTAL COST SUMMARY					Costing Date: August 2000		
Location : CANADA		Initial Estimate to Local: (CAD/CAD)			1.000000	Report Date: February 25, 2003			
		Local to CAD: (CAD/CAD)			1.000000	GFA: 100 m2			
Element	Ratio to GFA	Elemental Cost	Elemental CAD	Rate per m2 CAD	%	Converted to Canadian \$	Rate per m2 BASELINE	Ratios to BASELINE	
		Quantity	Unit rate			BASELINE	CAD/CAD	CAD/CAD	
<b>A SHELL</b>		100 m2		28,156	281.56	39.9	281.56	416.18	0.68 0.68
<b>A1 SUBSTRUCTURE</b>				1,010	10.10	1.4	10.10	33.79	0.30 0.30
A11 Foundations	0.500	50 m2	16.81	841	8.41		8.41	16.81	0.50 0.50
A12 Basement Excavations	0.300	30 m3	5.66	170	1.70		1.70	16.98	0.10 0.10
<b>A2 STRUCTURE</b>				3,839	38.39	5.4	38.39	76.78	0.50 0.50
A21 Lowest Floor Construction	0.500	50 m2	11.40	570	5.70		5.70	11.40	0.50 0.50
A22 Upper Floor Construction	0.500	50 m2	32.08	1,604	16.04		16.04	32.08	0.50 0.50
A23 Roof Construction	0.500	50 m2	33.30	1,665	16.65		16.65	33.30	0.50 0.50
<b>A3 EXTERIOR CLADDING</b>				17,307	173.07	24.5	173.07	245.61	0.70 0.70
A31 Walls Below Grade	0.686	69 m2	67.30	4,617	46.17		46.17	65.96	0.70 0.70
A32 Walls Above Grade	0.686	69 m2	71.53	4,907	49.07		49.07	70.10	0.70 0.70
A33 Windows and Entrances	0.130	13 no.	354.62	4,610	46.10		46.10	46.10	1.00 1.00
A34 Roof Coverings	0.700	70 m2	33.43	2,340	23.40		23.40	46.80	0.50 0.50
A35 Projections	0.125	13 m2	66.60	833	8.33		8.33	16.65	0.50 0.50
<b>A4 HOUSE FRAMING (LABOUR)</b>				6,000	60.00	8.5	60.00	60.00	1.00 1.00
A41 House Framing Labour	1.000	100 m2	60.00	6,000	60.00		60.00	60.00	1.00 1.00
<b>B INTERIORS</b>		100 m2		21,715	217.15	30.8	217.15	217.15	1.00 1.00
<b>B1 PARTITIONS &amp; DOORS</b>				4,486	44.86	6.4	44.86	44.86	1.00 1.00
B11 Partitions	2.050	205 m2	16.80	3,445	34.45		34.45	34.45	1.00 1.00
B12 Doors	0.110	11 no.	94.64	1,041	10.41		10.41	10.41	1.00 1.00
<b>B2 FINISHES</b>				6,818	68.18	9.7	68.18	68.18	1.00 1.00
B21 Floor Finishes	1.000	100 m2	43.56	4,356	43.56		43.56	43.56	1.00 1.00
B22 Ceiling Finishes	1.000	100 m2	10.00	1,000	10.00		10.00	10.00	1.00 1.00
B23 Wall Finishes	4.160	416 m2	3.52	1,463	14.63		14.63	14.63	1.00 1.00
<b>B3 FITTINGS &amp; EQUIPMENT</b>				10,411	104.11	14.7	104.11	104.11	1.00 1.00
B31 Fittings & Fixtures	1.000	100 m2	68.36	6,836	68.36		68.36	68.36	1.00 1.00
B32 Equipment	1.000	100 m2	35.75	3,575	35.75		35.75	35.75	1.00 1.00
<b>C SERVICES</b>		100 m2		9,850	98.50	14.0	98.50	98.50	1.00 1.00
<b>C1 MECHANICAL</b>				6,500	65.00	9.2	65.00	65.00	1.00 1.00
C11 Mechanical	1.000	100 m2	65.00	6,500	65.00		65.00	65.00	1.00 1.00
<b>C2 ELECTRICAL</b>				3,350	33.50	4.7	33.50	33.50	1.00 1.00
C21 Electrical	1.000	100 m2	33.50	3,350	33.50		33.50	33.50	1.00 1.00
<b>NET BUILDING COST - EXCLUDING SITE</b>				59,721	597.21	84.6	597.21	731.83	0.82 0.82
<b>D1 SITE WORK</b>				5,044	50.44	7.1	50.44	50.44	1.00 1.00
D11 Site Development	0.010	1 sum	5,044	5,044	50.44		50.44	50.44	1.00 1.00
<b>NET BUILDING COST - INCLUDING SITE</b>				64,765	647.65	91.7	647.65	782.27	0.83 0.83
<b>Z1 GENERAL REQUIREMENTS &amp; FEE</b>				5,829	58.29		58.29	70.40	0.83 0.83
Z11 General Requirements		9.0%		5,829	58.29		58.29	70.40	0.83 0.83
Z12 Fee		0.0%		0	0.00		0.00	-	N/A N/A
<b>TOTAL EXCLUDING CONTINGENCIES</b>				70,594	705.94	100.0	705.94	852.67	0.83 0.83

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5. METHOD OF APPROACH (cont'd)

5.8 Comparison of Wood Frame (Base Case) House with Country Traditional House (cont'd)

The following table compares the specifications for the traditional houses to the Canadian wood frame base case construction:

Specification Similarity by Element

Country	A1 Substructure	A21 Lowest Floor Construction	A22 Upper Floor Construction	A23 Roof Construction	A31 Walls Below Grade	A32 Walls Above Grade	A33 Windows And Entrances	A34 Roof Coverings	A35 Projections	B11 Partitions	B12 Doors	B21 Floor Finishes	B22 Ceiling Finishes	B23 Wall Finishes	B31 Fittings & Fixtures	B32 Equipment	C11 Mechanical	C21 Electrical	D11 Site Development
Canada	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Chile	N	Y	N	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	N	N	
China	N	Y	N	N	Y	N	Y	N	Y	N	Y	Y	Y	Y	Y	N	N	N	
France	N	Y	N	Y	N	N	Y	N	N	N	N	Y	Y	Y	N	N	N	N	
Germany	Y	Y	N	Y	N	N	Y	N	N	N	Y	Y	Y	N	N	N	N	N	
Japan	N	Y	Y	Y	N	N	N	N	N	Y	Y	N	N	Y	N	N	N	N	
Poland	N	Y	N	Y	Y	N	N	N	N	N	Y	Y	N	N	N	N	N	N	
Russia	N	Y	N	Y	Y	N	Y	N	N	N	Y	Y	N	Y	Y	N	N	N	
South Korea	N	Y	N	Y	N	N	N	Y	N	Y	Y	N	N	Y	N	N	N	N	
Spain	N	Y	N	Y	N	N	Y	N	N	N	N	Y	Y	N	N	N	N	N	
U. K.	N	Y	Y	Y	N	N	N	N	N	N	N	Y	N	N	Y	N	N	N	
U. S. A.	Y	Y	N	Y	N	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	

<Y>es - specifications are similar

<N>o - specifications are dissimilar

X - comparison is not applicable

## 5. METHOD OF APPROACH (cont'd)

### 5.8 Comparison of Wood Frame (Base Case) House with Country Traditional House (cont'd)

Exhibits C and D overleaf provide an example of the Summary sheets showing both in trade elemental and format the cost comparison of the Canadian Wood Frame (Base Case) against:

- The traditional house, factored and adjusted to the 100m<sup>2</sup> comparable house (UK example shown)
- Trade Breakdown of Wood Frame (from Exhibit A) for both the primary and secondary cities (see item 5.9 herein for details related to city indexing)
- Elemental Breakdown of Wood Frame (from Exhibit B) for both the primary and secondary cities (see item 5.9 herein for details related to city indexing)

The following table summarizes information contained under 'Volume 2 - Traditional Houses Information' and compares the cost per square metre of the traditional house (base case) in Canada to the traditional house in the survey country.

**Comparison \$/m<sup>2</sup> of Canadian Traditional (Baseline) to Traditional**

Country	CAD/m <sup>2</sup>		Area		House Layout
	CAD	Ratio	Area	Ratio	
Canada	853	1.00	100 m <sup>2</sup>	1.00	1 storey w/ basement
Chile	709	0.83	100 m <sup>2</sup>	1.00	1 storey w/o basement
China	763	0.89	100 m <sup>2</sup>	1.00	1 storey w/o basement
France	742	0.87	123 m <sup>2</sup>	1.23	1 storey w/o basement
Germany	1,410	1.65	125 m <sup>2</sup>	1.25	1 storey w/ basement
Japan	2,507	2.93	118 m <sup>2</sup>	1.18	2 storey w/o basement
Poland	936	1.10	120 m <sup>2</sup>	1.20	2 storey w/o basement
Russia	663	0.78	219 m <sup>2</sup>	2.19	3 storey w/o basement
South Korea	1,092	1.28	110 m <sup>2</sup>	1.10	2 storey w/o basement
Spain	504	0.59	152 m <sup>2</sup>	1.52	2 storey w/o basement
United Kingdom	1,582	1.85	132 m <sup>2</sup>	1.32	2 storey w/o basement
USA	933	1.09	169 m <sup>2</sup>	1.69	1 storey w/o basement

The reader can also refer to the table titled 'Comparison \$/m<sup>2</sup> of Canadian 'Adjusted' Baseline to Traditional' found on page 16 of the current volume.

**5. METHOD OF APPROACH (cont'd)**

**5.8 Comparison of Wood Frame (Base Case) House with Country Traditional House (cont'd)**

Example of Exhibit C:

Project : CMHC HOUSING STUDY : COMPARISON OF TRADE COSTS Location : UNITED KINGDOM		CANADA vs. UNITED KINGDOM (IN CAD) Currency Rate: 2.1319090 CAD/GBP						Costing Date: August 2000 Report Date: February 25, 2003 Per GFA of: 100 m <sup>2</sup>	
Trade Description		Canada Wood Frame		United Kingdom Traditional: \$/100m <sup>2</sup>		London Wood Frame		Birmingham 0.800 Wood Frame	Potential Export Opportunity
		Total \$	CAD/CAD	Total \$	CAD/CAD	Total \$	CAD/CAD	Total \$	
1. Excavate, Backfill, Gravel		2,138	1.00			10,529	4.92	8,423	3.94
2. Concrete Steel & Formwork		9,505	1.00			23,437	2.47	18,750	1.97
3. Dampproofing		902	1.00			2,704	3.00	2,164	2.40
4a. Rough Carpentry (Materials Only)									
- Lumber		3,335	1.00			5,448	1.63	4,358	1.31
- Plywood		2,526	1.00			8,409	3.33	6,727	2.66
- Trusses		2,190	1.00			2,100	0.96	1,680	0.77
- Stairs		768	1.00			791	1.03	633	0.82
- Deck		1,717	1.00			2,242	1.31	1,794	1.04
Subtotal Rough Carpentry (Materials)		10,535	1.00			18,990	1.80	15,192	1.44
4b. Rough Carpentry (Framing Labour)		7,650	1.00			14,923	1.95	11,939	1.56
4c. Masonry - Exterior / Interior		0	N/A			0	N/A	0	N/A
5. Roofing		2,660	1.00			5,372	2.02	4,298	1.62
6a. Windows (Materials Only)		3,085	1.00			4,034	1.31	3,227	1.05
6b. Doors		1,260	1.00			3,426	2.72	2,741	2.18
7. Exterior Cladding/Roof Elements		6,685	1.00			15,191	2.27	12,153	1.82
8. Plumbing		3,000	1.00			7,995	2.66	6,396	2.13
9. Electrical		3,350	1.00			13,324	3.98	10,660	3.18
10. Heating		3,500	1.00			11,725	3.35	9,380	2.68
11. Speciality Items		3,615	1.00			3,792	1.05	3,034	0.84
12. Drywall, Insulation, Caulking		6,270	1.00			11,033	1.76	8,826	1.41
13. Cabinets & Vanities									
- Material		3,450	1.00			5,255	1.52	4,204	1.22
- Labour		700	1.00			512	0.73	409	0.58
Subtotal Cabinet & Vanities		4,150	1.00			5,767	1.39	4,613	1.11
14. Painting, Stain, Lacquer		2,040	1.00			5,113	2.51	4,090	2.01
15. Interior Finishing									
- Doors		820	1.00			4,185	5.10	3,348	4.08
- Casings, Trims, Handrails		1,724	1.00			3,142	1.82	2,513	1.46
- Door Hardware		346	1.00			804	2.32	643	1.86
- Washroom Accessories		802	1.00			1,256	1.57	1,005	1.25
Subtotal Interior Finishing		3,692	1.00			9,387	2.54	7,509	2.03
16. Floor Coverings		4,190	1.00			5,820	1.39	4,656	1.11
17. Miscellaneous & Fees		7,040	1.00			25,884	3.68	20,707	2.94
<b>Total Wood Frame House Cost:</b>		<b>85,267</b>	<b>1.00</b>	<b>158,242</b>	<b>1.86</b>	<b>198,447</b>	<b>2.33</b>	<b>158,757</b>	<b>1.86</b>
<b>Cost per m<sup>2</sup>:</b>		<b>853</b>	<b>1.00</b>	<b>1,582</b>	<b>1.86</b>	<b>1,984</b>	<b>2.33</b>	<b>1,588</b>	<b>1.86</b>

Hanscomb

**EXHIBIT C**

**5. METHOD OF APPROACH (cont'd)**

**5.8 Comparison of Wood Frame (Base Case) House with Country Traditional House (cont'd)**

Example of Exhibit D:

Project	CANADA vs. UNITED KINGDOM (IN CAD)						Costing Date: August 2000 Report Date: February 25, 2003 Per GFA of: 100 m2	
	Location		Currency Rate: 2.1319090 CAD/GBP					
Element	Canada Wood Frame		United Kingdom Traditional: \$/100m2		London Wood Frame		Birmingham 0.800 Wood Frame	Potential Export Opportunity
	Total \$	CAD/CAD	Total \$	CAD/CAD	Total \$	CAD/CAD	Total \$	CAD/CAD
A SHELL	41,618	1.00			97,183	2.34	77,746	1.87
A1 SUBSTRUCTURE	3,379	1.00			12,638	3.74	10,110	2.99
A11 Foundations	1,681	1.00			3,569	2.12	2,855	1.70
A12 Basement Excavations	1,698	1.00			9,069	5.34	7,255	4.27
A2 STRUCTURE	7,678	1.00			15,828	2.06	12,662	1.65
A21 Lowest Floor Construction	1,140	1.00			2,668	2.34	2,135	1.87
A22 Upper Floor Construction	3,208	1.00			7,534	2.35	6,027	1.88
A23 Roof Construction	3,330	1.00			5,626	1.69	4,500	1.35
A3 EXTERIOR CLADDING	24,561	1.00			54,859	2.23	43,887	1.79
A31 Walls Below Grade	6,596	1.00			18,783	2.85	15,026	2.28
A32 Walls Above Grade	7,010	1.00			14,999	2.14	11,999	1.71
A33 Windows and Entrances	4,610	1.00			8,017	1.74	6,414	1.39
A34 Roof Coverings	4,680	1.00			9,146	1.95	7,317	1.56
A35 Projections	1,665	1.00			3,915	2.35	3,132	1.88
A4 HOUSE FRAMING (LABOUR)	6,000	1.00			13,857	2.31	11,086	1.85
A41 House Framing Labour	6,000	1.00			13,857	2.31	11,086	1.85
B INTERIORS	21,715	1.00			37,079	1.71	29,663	1.37
B1 PARTITIONS & DOORS	4,486	1.00			11,392	2.54	9,114	2.03
B11 Partitions	3,445	1.00			6,660	1.93	5,328	1.55
B12 Doors	1,041	1.00			4,733	4.55	3,786	3.64
B2 FINISHES	6,818	1.00			11,211	1.64	8,969	1.32
B21 Floor Finishes	4,356	1.00			6,102	1.40	4,881	1.12
B22 Ceiling Finishes	1,000	1.00			686	0.69	549	0.55
B23 Wall finishes	1,463	1.00			4,423	3.02	3,538	2.42
B3 FITTINGS & EQUIPMENT	10,411	1.00			14,476	1.39	11,580	1.11
B31 Fittings & Fixtures	6,836	1.00			10,745	1.57	8,596	1.26
B32 Equipment	3,575	1.00			3,731	1.04	2,985	0.83
C SERVICES	9,850	1.00			33,045	3.35	26,436	2.68
C1 MECHANICAL	6,500	1.00			19,720	3.03	15,776	2.43
C11 Mechanical	6,500	1.00			19,720	3.03	15,776	2.43
C2 ELECTRICAL	3,350	1.00			13,324	3.98	10,660	3.18
C21 Electrical	3,350	1.00			13,324	3.98	10,660	3.18
EXCLUDING SITE	73,183	1.00			167,306	2.29	133,845	1.83
D1 SITE WORK	5,044	1.00			5,257	1.04	4,206	0.83
D11 Site Development	5,044	1.00			5,257	1.04	4,206	0.83
INCLUDING SITE	78,227	1.00			172,563	2.21	138,050	1.76
Z1 GENERAL REQ'TS & FEE	7,040	1.00			25,884	3.68	20,708	2.94
Z11 General Requirements	7,040	1.00			25,884	3.68	20,708	2.94
Z12 Fee	0	N/A			0	N/A	0	N/A
<b>TOTAL</b>	<b>85,267</b>	<b>1.00</b>	<b>158,242</b>	<b>1.86</b>	<b>198,447</b>	<b>2.33</b>	<b>158,758</b>	<b>1.86</b>
Cost per m2:	853	1.00	1,582	1.86	1,984	2.33	1,588	1.86

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**EXHIBIT D**

**5. METHOD OF APPROACH (cont'd)**

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**5.9 Indexing of Secondary Cities**

As described in item 5.2, herein the primary and secondary cities in each country were selected in concert with CMHC at the outset. In discussion with each of the country consultants, advice was received to identify the costing index of the secondary city to the base city. The table in item 5.2 shows this index which has been used to present the figures on Exhibits C and D.

Exhibits C and D (see section 5.8) provided an example of the Summary sheets showing both in trade elemental and format the cost comparison listing the approximate secondary city costing.

## 6. CONCLUSIONS ON EXPORT POTENTIAL

In Volume 2 each of the traditional country houses was analysed against the Canadian Base House with respect to:

- Total Cost
- Component Cost & System Cost
- Material Cost

In addition, the relative merits against the secondary house were also considered. Based on this analysis, certain conclusions were reached as to whether an export potential exists. Further details are included in Volume 2, however this section provides Summary of Cost Results of each country.

**Potential Export Opportunity by Trade**

Country	1. Excavate, Backfill, Gravel	2. Concrete, Steel & Formwork	3. Damproofing	4a. Rough Carpentry (Materials)	4b. Rough Carpentry (Labour)	5. Roofing	6a. Windows (Material)	6b. Doors	7. Exterior Cladding/ Roof	8. Plumbing	9. Electrical	10. Heating	11. Speciality Items	12. Drywall, Insulation, Caulking	13. Cabinets & Vanities	14. Painting, Stain, Lacquer	15. Interior Finishes	16. Floor Coverings	17. Miscellaneous & Fees
Canada	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Chile	X	X	Y	N	Y	Y	Y	N	N	X	X	X	N	N	Y	Y	N	X	
China	X	X	Y	Y	Y	N	N	Y	Y	X	X	X	N	Y	N	Y	Y	N	X
France	X	X	Y	Y	N	Y	N	Y	Y	X	X	X	N	Y	N	Y	Y	N	X
Germany	X	X	Y	Y	Y	Y	Y	Y	Y	X	X	X	N	Y	N	Y	Y	N	X
Japan	X	X	Y	Y	Y	Y	Y	Y	Y	X	X	X	N	Y	Y	Y	Y	Y	X
Poland	X	X	Y	N	Y	Y	Y	N	N	X	X	X	N	Y	N	Y	Y	N	X
Russia	X	X	N	N	N	N	Y	N	N	X	X	X	N	Y	N	N	Y	N	X
South Korea	X	X	Y	Y	N	Y	N	N	Y	X	X	X	N	N	Y	Y	Y	Y	X
Spain	X	X	Y	Y	Y	Y	Y	Y	N	X	X	X	N	Y	N	Y	Y	N	X
U. K.	X	X	Y	Y	Y	Y	Y	Y	Y	X	X	X	Y	Y	Y	Y	Y	Y	X
U. S. A.	X	X	Y	N	Y	Y	Y	Y	Y	X	X	X	Y	Y	N	Y	Y	Y	X

<Y>es - an export opportunity may exist  
 <N>o - an export opportunity may not exist  
 X - export opportunity is not applicable

## **6. CONCLUSIONS ON EXPORT POTENTIAL (cont'd)**

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The following are the highlights from the analysis carried out on the countries studied.

### **6.1 Canada**

The Canadian model forms the basis of the study. An export opportunity is not applicable to this base case.

### **6.2 Chile**

Again basements are uncommon in Chile. Building a Chilean house to Canadian standards and Specifications is more costly than traditional construction. In the opinion of our Chilean Consultant, there is a good chance to commercialize a product in Chile which is a mix between Canadian and a traditional Chilean house with no basement. Chilean users will be prepared to pay more for a product that is faster to build and has better quality standards in terms of materials and interior comfort. Prefabricated or packaged construction is possible at the higher expense levels.

### **6.3 China**

Detached houses are uncommon for the middle class family where low rise walk up apartments seem to be the norm for houses in the 100m<sup>2</sup> range. For a detached house, the Canadian Wood Frame would appear to cost approximately 18% more when built in China due to the high cost of wood and other materials. Again we are informed that China by custom is unlikely to change from "solid" construction.

### **6.4 France**

Basements are uncommon in France. In the Case A study the Canadian Wood Frame house proved to be 30% more expensive to build in France. Material costs are much higher in France which would indicate an export potential, particularly for lumber products. In the opinion of our French Consultant, we are advised that the Canadian house built as a wood framed "kit" house, without a basement, and adapted to French building methods would be approximately 5% - 10% cheaper than the French equivalent.

### **6.5 Germany**

Basements are common in Germany, particularly due to the high cost of land and the desire to maximize housing space on smaller lots. Building the Case A wood framed house is 20% - 25% more expensive than a German equivalent house. German market is very conservative in house construction. Masonry houses are regarded as a better house as they are "solid" construction and this makes the selling of timber houses difficult in a German Market. With regard lumber imports, German codes require preservative treatment.

## **6. CONCLUSIONS ON EXPORT POTENTIAL (cont'd)**

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### **6.6 Japan**

Basements are uncommon in Japan due to the high cost of excavation, shoring etc. Comparing a two storey traditional house with an equivalent Canadian wood frame, the Canadian wood frame is marginally cheaper. An export opportunity does exist for Canadian materials since lumber costs are much lower due to the favourable exchange rates for Canada. Labour costs have risen rapidly in the last decade due to labour shortage in the construction industry, making prefabricated units a viable option.

### **6.7 Poland**

Basements are uncommon in Poland. However the Canadian Wood Framed house built in Poland is approximately 12% cheaper than the Polish equivalent traditional house. This suggests an excellent export opportunity for Canada, particularly for packaged frame construction, where speed of erection is the keynote and where skilled labour is at a premium.

### **6.8 Russia**

The cost of building the Canadian Wood Framed house is about the same as constructing a traditional house. Componentised or prefabricated units may be a possible option by reducing erection time.

### **6.9 South Korea**

Canadian Wood Frame Construction is approximately 20% cheaper to construct in South Korea as compared to the traditional house, making this country an excellent export opportunity for Canada.

### **6.10 Spain**

Basements are uncommon in Spain. The traditional house in Spain (2 storey no basement) is almost half the cost of an above grade Canadian wood frame equivalent house, principally due to the high cost of timber. Whilst exporting of lumber may be a possibility, cultural differences suggest wood frame construction would be a tough sell for Canada. In the report from our Spanish Consultant, we are told wood frame construction to a middle class family is perceived as a bigger than usual "garden shed".

### **6.11 United Kingdom**

Basements are uncommon in the United Kingdom, therefore it is difficult to compare like for like. The Case A study showed the component parts of the house cost more than twice what it costs in Canada. Comparing an above grade house, either one storey or two storey the analysis shows that a potential market exists, for certain components, and particularly lumber products. This of course implies that the customary perception of "solid is best" of the UK market is overcome.

**6. CONCLUSIONS ON EXPORT POTENTIAL (cont'd)**

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**6.12 United States of America**

For the primary city, Atlanta, using local materials and labour the USA traditional house is approximately 10% cheaper to build than the Canadian Wood framed house. Cities closer to the Canadian border where climate characteristics are somewhat similar to Canada would have a better export potential. Chicago costs, our secondary city, are approximately 20% higher than those of Atlanta.

## **7. SUMMARY OF COST RESULTS**

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### **Introduction**

Volumes 3 and 4 of the study contain the detailed estimates for each of the countries studied both in trade and elemental format respectively. The estimates have been prepared for the Wood Frame (Case A Baseline) by cost consultants in each specific country based on the Bill of Quantities and Plans provided (see appendix A) and on the basis that the Baseline house could be built in that country, even although it differed substantially from their traditional house, either by custom or local technical difficulties. The consultants were directed to price all material and labour costs locally.

Volume 2 of this study examines the cost, specification and layout configurations of the traditional houses provided by these consultants in their respective countries, noting the differenced and attempting to draw conclusions as to an export potential. The following in summary form is the results of this analysis.

As previously noted the presentation for each country comprises 5 spreadsheets, abstracted from other volumes.

Exhibit A	Trade Cost Breakdown for wood frame house (Canada versus Specific Country)
Exhibit B	Elemental Cost Breakdown for wood frame house (Canada versus Specific Country)
Exhibit C	Trade Cost Breakdown – Canadian wood framed house versus traditional house in specific country, both for primary city and secondary city.
Exhibit D	Elemental Cost Breakdown - Canadian wood framed house versus traditional house in specific country, both for primary city and secondary city.
Exhibit E	Specification differences between each of the houses for specific country

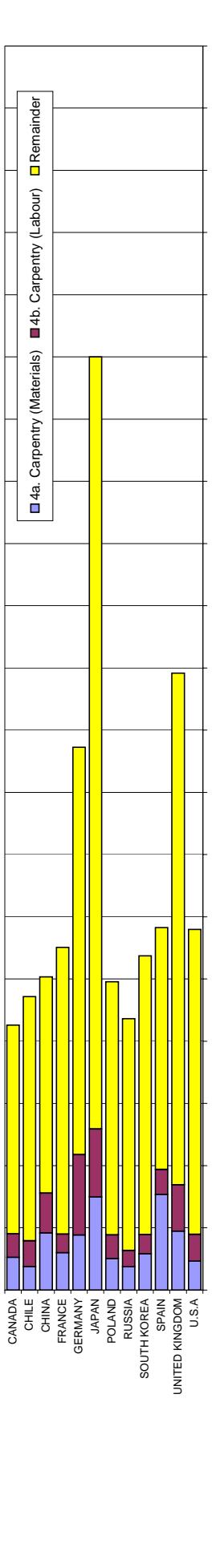
The following tabs identify the results in each of the specific countries:

1. Canada
2. Chile
3. China
4. France
5. Germany
6. Japan
7. Poland
8. Russia
9. South Korea
10. Spain
11. United Kingdom
12. United States of America

In the case of Canada, we have included only Exhibits A and B along with summary charts that illustrate cost comparisons, in Canadian dollars, between Canada and all survey countries. The first chart compares costs by trade while the second chart compares costs by building element.

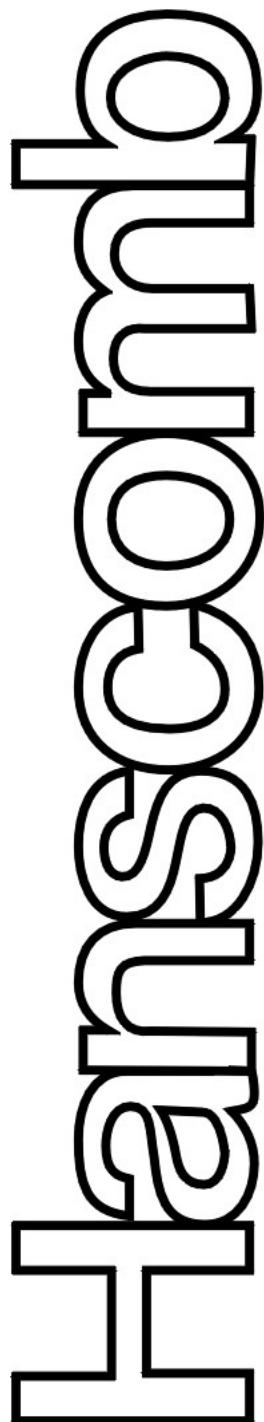


Description	Received: (10DEC03)	CANADA (11FEB03R)		CHILE (11FEB03R)		CHINA (29JAN03R)		FRANCE (21JAN03R)		GERMANY (21JAN03R)		JAPAN (11FEB03R)		POLAND (15JAN03R)		RUSSIA (07FEB03R)		SOUTH KOREA (11FEB03R)		SPAIN (19FEB03R)		UNITED KINGDOM (20JAN03R)		U.S.A (11JAN03R)		Notes			
	Amount	Ratio	Amount	Ratio	Amount	Ratio	Amount	Ratio	Amount	Ratio	Amount	Ratio	Amount	Ratio	Amount	Ratio	Amount	Ratio	Amount	Ratio	Amount	Ratio	Amount	Ratio	Amount	Ratio			
1. Excavate, Backfill, Gravel	2,138	1.00	4,563	2.13	3,249	1.52	2,880	1.35	8,016	3.75	32,972	15.42	2,613	1.22	6,825	3.19	6,054	2.83	3,427	1.60	10,529	4.92	5,600	2.62					
2. Concrete Steel & Formwork	5,505	1.00	7,704	0.81	6,724	0.71	10,812	1.14	13,128	1.38	21,589	2.27	7,850	0.83	8,224	0.87	12,121	1.28	6,819	0.72	23,437	2.47	15,419	1.62					
3. Damprooing	902	1.00	1,116	1.24	947	1.05	1,437	1.59	3,450	3.83	7,862	8.72	4,472	1.63	754	0.84	3,009	3.34	3,167	3.51	2,704	3.00	2,243	2.49					
4a. Rough Carpentry (Materials Only)																													
- Lumber	3,335	1.00	1,648	0.49	5,803	1.74	2,900	0.87	5,642	1.69	7,253	2.17	6,681	0.80	2,237	0.67	4,266	1.28	7,028	2.11	5,448	1.63	3,446	1.03					
- Plywood	2,526	1.00	4,007	1.59	2,722	1.08	3,920	1.56	3,017	1.19	6,300	2.49	4,099	1.62	3,039	1.20	3,002	1.19	8,941	3.54	8,409	3.33	1,987	0.79					
- Trusses	2,190	1.00	1,025	0.47	7,602	3.47	3,388	1.52	5,774	2.64	8,457	3.86	1,841	0.84	1,589	0.73	2,674	1.22	11,813	5.39	2,100	0.96	2,626	1.20					
- Stairs	768	1.00	404	0.53	305	0.40	143	0.79	934	1.22	2,904	3.78	1,47	0.19	152	0.20	4,14	0.54	599	0.78	791	1.03	292	0.38					
- Deck	1,717	1.00	508	0.30	1,957	1.14	1,717	1.00	2,331	1.36	5,015	2.92	1,412	0.82	525	0.31	1,387	0.81	2,346	1.37	2,242	1.31	937	0.55					
<b>Subtotal Rough Carpentry (Materials)</b>	<b>10,535</b>	<b>1.00</b>	<b>7,593</b>	<b>0.72</b>	<b>18,390</b>	<b>1.75</b>	<b>12,028</b>	<b>1.14</b>	<b>17,698</b>	<b>1.68</b>	<b>28,929</b>	<b>2.84</b>	<b>10,180</b>	<b>0.97</b>	<b>7,541</b>	<b>0.72</b>	<b>11,743</b>	<b>1.11</b>	<b>30,728</b>	<b>2.92</b>	<b>18,990</b>	<b>1.80</b>	<b>9,288</b>	<b>0.88</b>					
4b. Rough Carpentry (Framing Labour)	7,650	1.00	8,322	1.09	12,887	1.68	6,054	0.79	25,928	3.39	21,936	2.87	7,644	1.00	5,224	0.68	6,171	0.81	8,156	1.07	14,923	1.95	8,719	1.14					
5. Roofing	2,660	1.00	3,304	1.24	1,319	0.50	4,461	1.68	4,675	1.76	6,953	2.61	4,326	1.63	2,060	0.77	2,787	1.05	2,981	1.61	2,981	1.12	1,456	1.45					
6a. Windows (Materials Only)	3,085	1.00	4,004	1.30	1,778	0.58	2,453	0.80	4,711	1.53	10,940	3.55	3,482	1.13	4,179	1.35	2,354	0.76	3,423	1.11	4,034	1.31	4,463	1.45					
6b. Doors	1,260	1.00	1,110	0.88	1,600	1.27	1,641	1.30	3,867	3.07	4,663	3.70	1,048	0.83	1,030	0.82	1,035	0.82	1,883	1.49	3,426	2.72	1,775	1.41					
7. Exterior Cladding/Roof Elements	6,685	1.00	4,049	0.61	9,167	1.37	6,161	1.44	16,765	2.45	13,661	2.04	4,790	0.72	4,753	0.71	6,882	1.03	5,122	0.77	15,191	2.27	7,721	1.15					
8. Plumbing	3,000	1.00	3,408	0.61	1,975	0.66	3,162	1.05	3,340	1.11	11,633	3.88	1,633	0.67	3,679	1.23	4,326	1.44	3,407	1.14	7,995	2.66	4,963	1.65					
9. Electrical	3,350	1.00	6,379	1.90	2,701	0.81	4,232	1.21	7,169	2.05	10,019	1.52	8,983	2.68	19,872	5.93	4,039	1.21	4,856	1.45	4,986	1.49	5,246	1.57					
10. Heating	9,637	1.00	6,500	1.00	9,138	1.32	2,486	0.69	2,501	0.69	2,767	0.77	3,499	0.97	1,870	1.11	12,520	3.58	1,720	2.78	2,944	0.84	11,725	3.35	7,980	2.28			
11. Speciality Items	3,615	1.00	2,486	0.69	1,138	0.31	2,486	0.69	1,138	0.31	2,501	0.69	2,767	0.77	3,499	0.97	3,215	0.89	2,389	0.66	2,819	0.78	3,792	1.05	3,767	1.04			
12. Drywall, Insulation, Caulking	6,270	1.00	5,776	0.92	8,056	1.28	6,401	1.02	14,323	2.28	24,460	3.90	7,948	1.27	7,135	1.14	6,212	0.99	7,751	1.24	11,033	1.76	7,393	1.18					
13. Cabinets & Vanities	3,450	1.00	1,069	0.31	3,164	0.92	2,677	0.78	2,885	0.84	11,561	3.35	1,095	0.32	1,251	0.36	4,342	1.26	2,591	0.75	5,255	1.52	3,235	0.67					
- Material	700	1.00	385	0.55	316	0.28	637	0.04	319	0.77	3,134	0.80	3,553	0.86	12,389	2.99	1,389	0.33	1,545	0.37	4,342	0.42	0	0.00	580	0.83	280	0.40	
- Labour	4,150	1.00	1,454	0.36	3,192	0.77	637	0.91	668	0.95	628	1.18	2,94	0.42	264	0.42	2,94	0.42	0	0.00	3,171	0.76	5,767	1.39	2,605	0.63			
14. Painting, Stain, Lacquer	2,040	1.00	4,221	2.07	2,226	1.09	4,166	2.04	2,622	1.29	15,893	7.79	2,965	1.45	1,961	0.96	3,345	1.64	5,188	2.54	5,113	2.51	2,569	1.26					
15. Interior Finishing	820	1.00	1,840	2.24	2,408	2.94	3,438	4.19	7,726	9.42	5,202	6.34	1,913	2.33	1,123	2.32	2,332	2.84	4,185	5.10	2,416	2.95							
- Doors	1,724	1.00	1,190	0.69	1,234	0.72	1,641	0.95	2,517	1.00	1,627	0.94	1,751	1.02	2,179	1.26	1,935	1.12	1,739	1.01	3,142	1.82	2,127	1.23					
- Casings, Tims, Handrails	346	1.00	388	1.12	348	1.01	347	1.00	671	1.94	861	2.49	371	1.07	561	0.48	298	0.86	247	0.71	804	2.32	512	1.48					
- Door Hardware	802	1.00	306	0.38	305	0.38	307	0.67	884	1.10	1,119	1.40	561	0.70	707	0.88	707	0.88	2,024	2.52	1,256	1.57	1,460	1.82					
- Washroom Accessories	3,692	1.00	3,725	1.01	4,286	1.16	3,946	1.07	7,510	2.03	11,332	3.07	7,884	2.14	4,760	1.29	4,063	1.10	6,341	1.72	9,387	2.54	6,515	1.76					
16. Floor Coverings	4,190	1.00	2,246	0.54	3,413	0.81	3,967	0.95	3,006	0.72	7,712	1.84	2,737	0.65	3,826	0.91	4,220	1.01	3,926	0.94	5,820	1.39	4,962	1.18					
17. Miscellaneous & Fees	7,040	1.00	16,389	2.33	13,550	1.92	19,132	2.72	20,632	2.93	30,327	4.31	18,587	2.64	1,625	1.65	11,749	1.67	8,197	1.25	25,884	3.68	10,548	1.50					
<b>Total Wood Frame House Cost:</b>	<b>85,267</b>	<b>1.00</b>	<b>94,466</b>	<b>1.11</b>	<b>100,821</b>	<b>1.18</b>	<b>110,239</b>	<b>1.29</b>	<b>174,597</b>	<b>2.05</b>	<b>300,143</b>	<b>3.52</b>	<b>99,216</b>	<b>1.16</b>	<b>87,312</b>	<b>1.02</b>	<b>107,506</b>	<b>1.26</b>	<b>116,602</b>	<b>1.37</b>	<b>198,447</b>	<b>2.33</b>	<b>116,022</b>	<b>1.36</b>					
<b>Cost per m<sup>2</sup>:</b>	<b>\$853</b>	<b>1.00</b>	<b>945</b>	<b>1.11</b>	<b>1,008</b>	<b>1.18</b>	<b>1,102</b>	<b>1.29</b>	<b>1,746</b>	<b>2.05</b>	<b>3,001</b>	<b>3.52</b>	<b>992</b>	<b>1.16</b>	<b>873</b>	<b>1.02</b>	<b>1,075</b>	<b>1.26</b>	<b>1,166</b>	<b>1.37</b>	<b>1,984</b>	<b>2.33</b>	<b>1,160</b>	<b>1.36</b>					



Costing Date: August 1 2000

Report Date: February 25, 2003



- 1. Canada**
- 2. Chile**
- 3 China**
- 4. France**
- 5. Germany**
- 6. Japan**
- 7. Poland**
- 8. Russia**
- 9. South Korea**
- 10. Spain**
- 11. United Kingdom**
- 12. United States of America**

**Appendix 'A'**

# 1. CANADA

**Hanscom**  
**CMHC HOUSING STUDY**  
**100M2 HOUSE TIMBER FRAMED**  
**CANADA**

**TRADE SUMMARY**

Costing Date: August 2000  
 Initial Estimate to Local: (CAD/CAD) 1.0000000  
 Local to CAD: (CAD/CAD) 1.0000000  
 Report Date: December 10, 2002

Description	Amount as Priced CAD	Converted to Canadian \$	CAD Amount IN CANADA	Ratios to Canada CAD/CAD CAD/CAD	Remarks
1. Excavate, Backfill, Gravel	2,138 CAD	2,138 CAD	2,138 CAD	1.00	1.00
2. Concrete Steel & Formwork	9,505 CAD	9,505 CAD	9,505 CAD	1.00	1.00
3. Dampproofing	902 CAD	902 CAD	902 CAD	1.00	1.00
4a. Rough Carpentry (Materials Only)					
- Lumber	3,335 CAD	3,335 CAD	3,335 CAD	1.00	1.00
- Plywood	2,526 CAD	2,526 CAD	2,526 CAD	1.00	1.00
- Trusses	2,190 CAD	2,190 CAD	2,190 CAD	1.00	1.00
- Stairs	768 CAD	768 CAD	768 CAD	1.00	1.00
- Deck	1,717 CAD	1,717 CAD	1,717 CAD	1.00	1.00
<b>Subtotal Rough Carpentry (Materials)</b>	<b>10,535 CAD</b>	<b>10,535 CAD</b>	<b>10,535 CAD</b>	<b>1.00</b>	<b>1.00</b>
4b. Rough Carpentry (Framing Labour)	7,650 CAD	7,650 CAD	7,650 CAD	1.00	1.00
5. Roofing	2,660 CAD	2,660 CAD	2,660 CAD	1.00	1.00
6a. Windows (Materials Only)	3,085 CAD	3,085 CAD	3,085 CAD	1.00	1.00
6b. Doors	1,260 CAD	1,260 CAD	1,260 CAD	1.00	1.00
7. Exterior Cladding/Roof Elements	6,685 CAD	6,685 CAD	6,685 CAD	1.00	1.00
8. Plumbing	3,000 CAD	3,000 CAD	3,000 CAD	1.00	1.00
9. Electrical	3,350 CAD	3,350 CAD	3,350 CAD	1.00	1.00
10. Heating	3,500 CAD	3,500 CAD	3,500 CAD	1.00	1.00
11. Specialty Items	3,615 CAD	3,615 CAD	3,615 CAD	1.00	1.00
12. Drywall, Insulation, Caulking	6,270 CAD	6,270 CAD	6,270 CAD	1.00	1.00
13. Cabinets & Vanities					
- Material	3,450 CAD	3,450 CAD	3,450 CAD	1.00	1.00
- Labour	700 CAD	700 CAD	700 CAD	1.00	1.00
<b>Subtotal Cabinet &amp; Vanities</b>	<b>4,150 CAD</b>	<b>4,150 CAD</b>	<b>4,150 CAD</b>	<b>1.00</b>	<b>1.00</b>
14. Painting, Stain, Lacquer	2,040 CAD	2,040 CAD	2,040 CAD	1.00	1.00
15. Interior Finishing					
- Doors	820 CAD	820 CAD	820 CAD	1.00	1.00
- Casings, Trims, Handrails	1,724 CAD	1,724 CAD	1,724 CAD	1.00	1.00
- Door Hardware	346 CAD	346 CAD	346 CAD	1.00	1.00
- Washroom Accessories	802 CAD	802 CAD	802 CAD	1.00	1.00
<b>Subtotal Interior Finishing</b>	<b>3,692 CAD</b>	<b>3,692 CAD</b>	<b>3,692 CAD</b>	<b>1.00</b>	<b>1.00</b>
16. Floor Coverings	4,190 CAD	4,190 CAD	4,190 CAD	1.00	1.00
17. Miscellaneous & Fees	7,040 CAD	7,040 CAD	7,040 CAD	1.00	1.00
<b>Total Wood Frame House Cost:</b>	<b>85,267 CAD</b>	<b>85,267 CAD</b>	<b>85,267 CAD</b>	<b>1.00</b>	<b>1.00</b>
<b>Cost per m2:</b>	<b>852.67 CAD</b>	<b>852.67 CAD</b>	<b>852.67 CAD</b>	<b>1.00</b>	<b>1.00</b>

Project : CMHC HOUSING STUDY		ELEMENTAL COST SUMMARY						Costing Date: August 2000		Report Date: December 10, 2002		
Location : CANADA		Initial Estimate to Local: (CAD/CAD)			Local to CAD: (CAD/CAD)			1.00000000		GFA: 1.00000000		
Element	Ratio to GFA	Elemental Cost	Elemental CAD	Unit rate	Elemental Cost	Elemental CAD	Unit rate	Rate per m2 CAD	%	Converted to Canadian \$	Rate per m2 IN CANADA	Ratios to Canada CAD/CAD CAD/CAD
<b>A SHELL</b>					<b>41,618</b>	<b>416.18</b>	<b>48.8</b>	<b>416.18</b>	<b>1.00</b>	<b>416.18</b>	<b>1.00</b>	
<b>A1 SUBSTRUCTURE</b>					<b>3,379</b>	<b>33.79</b>	<b>4.0</b>	<b>33.79</b>	<b>1.00</b>	<b>33.79</b>	<b>1.00</b>	
A11 Foundations	1.000	100 m2	16.81	1.681				16.81	1.00	16.81	1.00	
A12 Basement Excavations	3.000	300 m3	5.66	1.698				16.98	1.00	16.98	1.00	
<b>A2 STRUCTURE</b>					<b>7,678</b>	<b>76.78</b>	<b>9.0</b>	<b>76.78</b>	<b>1.00</b>	<b>76.78</b>	<b>1.00</b>	
A21 Lowest Floor Construction	1.000	100 m2	11.40	1.140				11.40	1.00	11.40	1.00	
A22 Upper Floor Construction	1.000	100 m2	32.08	3.208				32.08	1.00	32.08	1.00	
A23 Roof Construction	1.000	100 m2	33.30	3.330				33.30	1.00	33.30	1.00	
<b>A3 EXTERIOR CLADDING</b>					<b>24,561</b>	<b>245.61</b>	<b>28.8</b>	<b>245.61</b>	<b>1.00</b>	<b>245.61</b>	<b>1.00</b>	
A31 Walls Below Grade	0.980	98 m2	67.30	6.596				65.96	1.00	65.96	1.00	
A32 Walls Above Grade	0.980	98 m2	71.53	7.010				70.10	1.00	70.10	1.00	
A33 Windows and Entrances	0.130	13 no.	354.62	4.610				46.10	1.00	46.10	1.00	
A34 Roof Coverings	1.400	140 m2	33.43	4.680				46.80	1.00	46.80	1.00	
A35 Projections	0.250	25 m2	66.60	1.665				16.65	1.00	16.65	1.00	
<b>A4 HOUSE FRAMING (LABOUR)</b>					<b>6,000</b>	<b>60.00</b>	<b>7.0</b>	<b>60.00</b>	<b>1.00</b>	<b>60.00</b>	<b>1.00</b>	
A41 House Framing Labour	1.000	100 m2	60.00	6.000				60.00	1.00	60.00	1.00	
<b>B INTERIORS</b>					<b>21,715</b>	<b>217.15</b>	<b>25.5</b>	<b>217.15</b>	<b>1.00</b>	<b>217.15</b>	<b>1.00</b>	
<b>B1 PARTITIONS &amp; DOORS</b>					<b>4,486</b>	<b>44.86</b>	<b>5.3</b>	<b>44.86</b>	<b>1.00</b>	<b>44.86</b>	<b>1.00</b>	
B11 Partitions	2.050	205 m2	16.80	3.445				34.45	1.00	34.45	1.00	
B12 Doors	0.110	11 no.	94.64	1.041				10.41	1.00	10.41	1.00	
<b>B2 FINISHES</b>					<b>6,818</b>	<b>68.18</b>	<b>8.0</b>	<b>68.18</b>	<b>1.00</b>	<b>68.18</b>	<b>1.00</b>	
B21 Floor Finishes	1.000	100 m2	43.56	4.356				43.56	1.00	43.56	1.00	
B22 Ceiling Finishes	1.000	100 m2	10.00	1.000				10.00	1.00	10.00	1.00	
B23 Wall Finishes	4.160	416 m2	3.52	1.463				14.63	1.00	14.63	1.00	
<b>B3 FITTINGS &amp; EQUIPMENT</b>					<b>10,411</b>	<b>104.11</b>	<b>12.2</b>	<b>104.11</b>	<b>1.00</b>	<b>104.11</b>	<b>1.00</b>	
B31 Fittings & Fixtures	1.000	100 m2	68.36	6.836				68.36	1.00	68.36	1.00	
B32 Equipment	1.000	100 m2	35.75	3.575				35.75	1.00	35.75	1.00	
<b>C SERVICES</b>					<b>9,850</b>	<b>98.50</b>	<b>11.6</b>	<b>98.50</b>	<b>1.00</b>	<b>98.50</b>	<b>1.00</b>	
<b>C1 MECHANICAL</b>					<b>6,500</b>	<b>65.00</b>	<b>7.6</b>	<b>65.00</b>	<b>1.00</b>	<b>65.00</b>	<b>1.00</b>	
C11 Mechanical	1.000	100 m2	65.00	6.500				65.00	1.00	65.00	1.00	
<b>C2 ELECTRICAL</b>					<b>3,350</b>	<b>33.50</b>	<b>3.9</b>	<b>33.50</b>	<b>1.00</b>	<b>33.50</b>	<b>1.00</b>	
C21 Electrical	1.000	100 m2	33.50	3.350				33.50	1.00	33.50	1.00	
<b>NET BUILDING COST - EXCLUDING SITE</b>												
D1 SITE WORK					<b>73,183</b>	<b>731.83</b>	<b>85.8</b>	<b>731.83</b>	<b>1.00</b>	<b>731.83</b>	<b>1.00</b>	
D11 Site Development	0.010	1 sum	5.044	5.044				<b>50.44</b>	<b>1.00</b>	<b>50.44</b>	<b>1.00</b>	
<b>NET BUILDING COST - INCLUDING SITE</b>												
<b>Z1 GENERAL REQUIREMENTS &amp; FEE</b>					<b>7,040</b>	<b>782.27</b>	<b>91.7</b>	<b>782.27</b>	<b>1.00</b>	<b>782.27</b>	<b>1.00</b>	
Z11 General Requirements			9.0%					<b>70.40</b>	<b>1.00</b>	<b>70.40</b>	<b>1.00</b>	
Z12 Fee			0.0%					0.00	-	N/A	N/A	
<b>TOTAL EXCLUDING CONTINGENCIES</b>												
					<b>85,267</b>	<b>852.67</b>	<b>100.0</b>	<b>852.67</b>	<b>1.00</b>	<b>852.67</b>	<b>1.00</b>	

## 2. CHILE

**Hanscom**  
**CMHC HOUSING STUDY**  
**100M2 HOUSE TIMBER FRAMED**  
**CHILE**

**TRADE SUMMARY**

Costing Date:  
 Currency Rate: (CAD/CLP)  
 Report Date:

August 2000

0.0026180

February 11, 2003 R

Description	Amount as Priced CLP	Converted to Canadian \$	CAD Amount IN CANADA	Ratios to Canada CLP/CAD	CAD/CAD	Remarks
1. Excavate, Backfill, Gravel	1,742,857 CLP	4,563 CAD	2,138 CAD	815.18	2.13	
2. Concrete Steel & Formwork	2,942,883 CLP	7,704 CAD	9,505 CAD	309.62	0.81	
3. Dampproofing	426,187 CLP	1,116 CAD	902 CAD	472.49	1.24	
4a. Rough Carpentry (Materials Only)						
- Lumber	629,589 CLP	1,648 CAD	3,335 CAD	188.78	0.49	
- Plywood	1,530,540 CLP	4,007 CAD	2,526 CAD	606.01	1.59	
- Trusses	391,686 CLP	1,025 CAD	2,190 CAD	178.85	0.47	
- Stairs	154,345 CLP	404 CAD	768 CAD	200.97	0.53	
- Deck	194,186 CLP	508 CAD	1,717 CAD	113.13	0.30	
Subtotal Rough Carpentry (Materials)	2,900,346 CLP	7,593 CAD	10,535 CAD	275.30	0.72	
4b. Rough Carpentry (Framing Labour)	3,178,849 CLP	8,322 CAD	7,650 CAD	415.54	1.09	
5. Roofing	1,262,032 CLP	3,304 CAD	2,660 CAD	474.45	1.24	
6a. Windows (Materials Only)	1,529,488 CLP	4,004 CAD	3,085 CAD	495.78	1.30	
6b. Doors	423,988 CLP	1,110 CAD	1,260 CAD	336.50	0.88	
7. Exterior Cladding/Roof Elements	1,546,570 CLP	4,049 CAD	6,685 CAD	231.35	0.61	
8. Plumbing	1,301,757 CLP	3,408 CAD	3,000 CAD	433.92	1.14	
9. Electrical	2,436,631 CLP	6,379 CAD	3,350 CAD	727.35	1.90	
10. Heating	2,535,218 CLP	6,637 CAD	3,500 CAD	724.35	1.90	
11. Specialty Items	949,427 CLP	2,486 CAD	3,615 CAD	262.64	0.69	
12. Drywall, Insulation, Caulking	2,206,264 CLP	5,776 CAD	6,270 CAD	351.88	0.92	
13. Cabinets & Vanities						
- Material	408,293 CLP	1,069 CAD	3,450 CAD	118.35	0.31	
- Labour	147,207 CLP	385 CAD	700 CAD	210.30	0.55	
Subtotal Cabinet & Vanities	555,500 CLP	1,454 CAD	4,150 CAD	133.86	0.35	
14. Painting, Stain, Lacquer	1,612,174 CLP	4,221 CAD	2,040 CAD	790.28	2.07	
15. Interior Finishing						
- Doors	702,865 CLP	1,840 CAD	820 CAD	857.15	2.24	
- Casings, Trims, Handrails	454,651 CLP	1,190 CAD	1,724 CAD	263.76	0.69	
- Door Hardware	148,281 CLP	388 CAD	346 CAD	428.56	1.12	
- Bathroom Accessories	116,998 CLP	306 CAD	802 CAD	145.88	0.38	
Subtotal Interior Finishing	1,422,795 CLP	3,725 CAD	3,692 CAD	385.40	1.01	
16. Floor Coverings	857,907 CLP	2,246 CAD	4,190 CAD	204.75	0.54	
17. Miscellaneous & Fees	6,252,551 CLP	16,369 CAD	7,040 CAD	888.15	2.33	
<b>Total Wood Frame House Cost:</b>	<b>36,083,424 CLP</b>	<b>94,466 CAD</b>	<b>85,267 CAD</b>	<b>423.18</b>	<b>1.11</b>	
<b>Cost per m2:</b>	<b>360,834.24 CLP</b>	<b>944.66 CAD</b>	<b>852.67 CAD</b>	<b>423.18</b>	<b>1.11</b>	
	(1)	(2)	(3)			

Project : CMHC HOUSING STUDY		ELEMENTAL COST SUMMARY						Costing Date: August 2000		Report Date: February 11, 2003 R	
Location : CHILE		Currency Rate: 0.0026180		CAD/CLP				GFA: 100 m <sup>2</sup>			
Element	Ratio to GFA	Elemental Cost	Elemental Unit rate	CLP	Rate per m <sup>2</sup>	CLP	%	Converted to Canadian \$	Rate per m <sup>2</sup>	Ratios to Canada	CLP/CAD
<b>A SHELL</b>		<b>15,888,866</b>	<b>153,888,66</b>	<b>44.0</b>	<b>415.97</b>	<b>416.18</b>	<b>381.78</b>	<b>1.00</b>			
<b>A1 SUBSTRUCTURE</b>		<b>2,202,856</b>	<b>22,028.56</b>	<b>6.1</b>	<b>57.67</b>	<b>33.79</b>	<b>651.93</b>	<b>1.71</b>			
A11 Foundations	1.000	100 m <sup>2</sup>	6,471.65	647.165	16.94	16.81	384.99	1.01			
A12 Basement Excavations	3.000	300 m <sup>3</sup>	5,185.64	1,555.691	40.73	16.98	916.19	2.40			
<b>A2 STRUCTURE</b>		<b>2,665,428</b>	<b>26,654.28</b>	<b>7.4</b>	<b>69.78</b>	<b>76.78</b>	<b>347.15</b>	<b>0.91</b>			
A21 Lowest Floor Construction	1.000	100 m <sup>2</sup>	5,213.90	5,213.90	13.65	11.40	457.36	1.20			
A22 Upper Floor Construction	1.000	100 m <sup>2</sup>	11,893.77	1,189.377	31.14	32.08	370.75	0.97			
A23 Roof Construction	1.000	100 m <sup>2</sup>	9,546.61	9,546.61	24.99	33.30	286.68	0.75			
<b>A3 EXTERIOR CLADDING</b>		<b>8,206,145</b>	<b>82,061.45</b>	<b>22.7</b>	<b>214.84</b>	<b>245.61</b>	<b>334.12</b>	<b>0.87</b>			
A31 Walls Below Grade	0.980	98 m <sup>2</sup>	22,147.85	2,170.489	21,704.89	56.82	65.96	329.07	0.86		
A32 Walls Above Grade	0.980	98 m <sup>2</sup>	16,348.25	1,602.128	16,021.28	41.94	70.10	228.55	0.60		
A33 Windows and Entrances	0.130	13 no.	161,315.16	2,097.097	20,970.97	54.90	46.10	454.90	1.19		
A34 Roof Coverings	1.400	140 m <sup>2</sup>	13,319.87	1,864.782	18,647.82	48.82	46.80	398.46	1.04		
A35 Projections	0.250	25 m <sup>2</sup>	18,865.94	471.648	4,716.48	12.35	16.65	283.27	0.74		
<b>A4 HOUSE FRAMING (LABOUR)</b>		<b>2,814,437</b>	<b>28,144.37</b>	<b>7.8</b>	<b>73.68</b>	<b>60.00</b>	<b>469.07</b>	<b>1.23</b>			
A41 House Framing Labour	1.000	100 m <sup>2</sup>	28,144.37	2,814.437	28,144.37	73.68	60.00	469.07	1.23		
<b>B INTERIORS</b>		<b>6,809,761</b>	<b>68,097.61</b>	<b>18.9</b>	<b>178.28</b>	<b>217.15</b>	<b>313.60</b>	<b>0.82</b>			
<b>B1 PARTITIONS &amp; DOORS</b>		<b>2,037,601</b>	<b>20,376.01</b>	<b>5.6</b>	<b>53.34</b>	<b>44.86</b>	<b>454.21</b>	<b>1.19</b>			
B11 Partitions	2.050	205 m <sup>2</sup>	6,175.14	1,265.905	12,659.05	33.14	34.45	367.46	0.96		
B12 Doors	0.110	11 no.	70,154.18	771,696	7,716.96	20.20	20.20	10.41	741.30	1.94	
<b>B2 FINISHES</b>		<b>2,588,632</b>	<b>25,886.32</b>	<b>7.2</b>	<b>67.77</b>	<b>68.18</b>	<b>379.67</b>	<b>0.99</b>			
B21 Floor Finishes	1.000	100 m <sup>2</sup>	9,499.77	949.977	9,499.77	24.87	43.56	218.10	0.57		
B22 Ceiling Finishes	1.000	100 m <sup>2</sup>	2,635.60	263.560	2,635.60	6.90	10.00	263.56	0.69		
B23 Wall Finishes	4.160	416 m <sup>2</sup>	3,305.52	1,375.095	13,750.95	36.00	14.63	940.24	2.46		
<b>B3 FITTINGS &amp; EQUIPMENT</b>		<b>2,183,528</b>	<b>21,835.28</b>	<b>6.1</b>	<b>57.16</b>	<b>104.11</b>	<b>209.74</b>	<b>0.55</b>			
B31 Fittings & Fixtures	1.000	100 m <sup>2</sup>	12,553.39	1,255.339	12,553.39	32.86	68.36	183.64	0.48		
B32 Equipment	1.000	100 m <sup>2</sup>	9,281.89	928.189	9,281.89	24.30	35.75	259.63	0.68		
<b>C SERVICES</b>		<b>6,273,606</b>	<b>62,736.06</b>	<b>17.4</b>	<b>164.24</b>	<b>98.50</b>	<b>636.91</b>	<b>1.67</b>			
<b>C1 MECHANICAL</b>		<b>3,836,975</b>	<b>38,369.75</b>	<b>10.6</b>	<b>100.45</b>	<b>65.00</b>	<b>590.30</b>	<b>1.55</b>			
C11 Mechanical	1.000	100 m <sup>2</sup>	38,369.75	3,836,975	38,369.75	100.45	65.00	590.30	1.55		
<b>C2 ELECTRICAL</b>		<b>2,436,631</b>	<b>24,366.31</b>	<b>6.8</b>	<b>63.79</b>	<b>33.50</b>	<b>727.35</b>	<b>1.90</b>			
C21 Electrical	1.000	100 m <sup>2</sup>	24,366.31	2,436.631	24,366.31	63.79	33.50	727.35	1.90		
<b>NET BUILDING COST - EXCLUDING SITE</b>		<b>28,972,233</b>	<b>289,722.33</b>	<b>80.3</b>	<b>758.49</b>	<b>731.83</b>	<b>395.89</b>	<b>1.04</b>			
<b>D1 SITE WORK</b>		<b>8,586,39</b>	<b>8,586,39</b>	<b>2.4</b>	<b>22.48</b>	<b>50.44</b>	<b>170.23</b>	<b>0.45</b>			
D11 Site Development	0.010	1 sum	858,639	858,639	858,639	22.48	50.44	170.23	0.45		
<b>NET BUILDING COST - INCLUDING SITE</b>		<b>29,830,873</b>	<b>298,308.73</b>	<b>82.7</b>	<b>780.97</b>	<b>782.27</b>	<b>381.34</b>	<b>1.00</b>			
<b>Z1 GENERAL REQUIREMENTS &amp; FEE</b>		<b>6,252,551</b>	<b>62,525.51</b>		<b>163.69</b>	<b>70.40</b>	<b>888.10</b>	<b>2.33</b>			
Z11 General Requirements	8.0%		2,386,470	23,864.70	62.48	70.40	338.97	0.89			
Z12 Fee	12.0%		3,866,081	38,660.81	101.21	-	N/A	N/A			
<b>TOTAL EXCLUDING CONTINGENCIES</b>		<b>36,083,424</b>	<b>360,834.24</b>	<b>100.0</b>	<b>944.66</b>	<b>852.67</b>	<b>423.18</b>	<b>1.11</b>			

(1) (2) (3)

Project : CMHC HOUSING STUDY Location : CHILE		CANADA vs. CHILE (IN CAD)						Costing Date: August 2000 Report Date: February 25, 2003 Per GFA of: 100 m <sup>2</sup>		
Trade Description		Currency Rate: 0.0026180 CAD/CLP			Santiago			Valparaiso		Potential Export Opportunity
		Canada Wood Frame	Total \$ CAD/CAD	Chile	Traditional: \$/100m <sup>2</sup> CAD/CAD	Wood Frame	Total \$ CAD/CAD	Wood Frame	Total \$ CAD/CAD	
1. Excavate, Backfill, Gravel	2,138	1.00			4,563	2.13	4,563	2.13		
2. Concrete Steel & Formwork	9,505	1.00			7,704	0.81	7,704	0.81		
3. Dampproofing	902	1.00			1,116	1.24	1,116	1.24		
4a. Rough Carpentry (Materials Only)										
- Lumber	3,335	1.00			1,648	0.49	1,648	0.49		
- Plywood	2,526	1.00			4,007	1.59	4,007	1.59		
- Trusses	2,190	1.00			1,025	0.47	1,025	0.47		
- Stairs	768	1.00			404	0.53	404	0.53		
- Deck	1,717	1.00			508	0.30	508	0.30		
<b>Subtotal Rough Carpentry (Materials)</b>	<b>10,535</b>	<b>1.00</b>			<b>7,593</b>	<b>0.72</b>	<b>7,593</b>	<b>0.72</b>		
4b. Rough Carpentry (Framing Labour)	7,650	1.00			8,322	1.09	8,322	1.09		
4c. Masonry - Exterior / Interior	0	N/A			0	N/A	0	N/A		
5. Roofing	2,660	1.00			3,304	1.24	3,304	1.24		
6a. Windows (Materials Only)	3,085	1.00			4,004	1.30	4,004	1.30		
6b. Doors	1,260	1.00			1,110	0.88	1,110	0.88		
7. Exterior Cladding/Roof Elements	6,685	1.00			4,049	0.61	4,049	0.61		
8. Plumbing	3,000	1.00			3,408	1.14	3,408	1.14		
9. Electrical	3,350	1.00			6,379	1.90	6,379	1.90		
10. Heating	3,500	1.00			6,637	1.90	6,637	1.90		
11. Specialty Items	3,615	1.00			2,486	0.69	2,486	0.69		
12. Drywall, Insulation, Caulking	6,270	1.00			5,776	0.92	5,776	0.92		
13. Cabinets & Vanities										
- Material	3,450	1.00			1,069	0.31	1,069	0.31		
- Labour	700	1.00			385	0.55	385	0.55		
<b>Subtotal Cabinet &amp; Vanities</b>	<b>4,150</b>	<b>1.00</b>			<b>1,454</b>	<b>0.35</b>	<b>1,454</b>	<b>0.35</b>		
14. Painting, Stain, Lacquer	2,040	1.00			4,221	2.07	4,221	2.07		
15. Interior Finishing										
- Doors	820	1.00			1,840	2.24	1,840	2.24		
- Casing, Trims, Handrails	1,724	1.00			1,190	0.69	1,190	0.69		
- Door Hardware	346	1.00			388	1.12	388	1.12		
- Bathroom Accessories	802	1.00			306	0.38	306	0.38		
<b>Subtotal Interior Finishing</b>	<b>3,692</b>	<b>1.00</b>			<b>3,725</b>	<b>1.01</b>	<b>3,725</b>	<b>1.01</b>		
16. Floor Coverings	4,190	1.00			2,246	0.54	2,246	0.54		
17. Miscellaneous & Fees	7,040	1.00			16,369	2.33	16,369	2.33		
<b>Total Wood Frame House Cost:</b>	<b>85,267</b>	<b>1.00</b>	<b>70,900</b>	<b>0.83</b>	<b>94,466</b>	<b>1.11</b>	<b>94,466</b>	<b>1.11</b>		
<b>Cost per m<sup>2</sup>:</b>	<b>853</b>	<b>1.00</b>	<b>709</b>	<b>0.83</b>	<b>945</b>	<b>1.11</b>	<b>945</b>	<b>1.11</b>		

Project : CMHC HOUSING STUDY		CANADA vs. CHILE (IN CAD)				Costing Date: August 2000	
Location : CHILE		Currency Rate: 0.00026180 CAD/CLP				Report Date: February 25, 2003 Per GFA of: 100 m <sup>2</sup>	
Element		Canada Wood Frame	Chile Traditional: \$/100m <sup>2</sup>	Santiago Wood Frame	Valparaiso Wood Frame	Total \$	Potential Export Opportunity
		Total \$ CAD/CAD	Total \$ CAD/CAD	Total \$ CAD/CAD	Total \$ CAD/CAD	Total \$ CAD/CAD	
<b>A SHELL</b>		<b>41,618</b>	<b>1.00</b>	<b>41,597</b>	<b>1.00</b>	<b>41,597</b>	<b>1.00</b>
<b>A1 SUBSTRUCTURE</b>		<b>3,379</b>	<b>1.00</b>	<b>5,767</b>	<b>1.71</b>	<b>5,767</b>	<b>1.71</b>
A11 Foundations	1,681	1.00		1,694	1.01	1,694	1.01
A12 Basement Excavations	1,698	1.00		4,073	2.40	4,073	2.40
<b>A2 STRUCTURE</b>		<b>7,678</b>	<b>1.00</b>	<b>6,978</b>	<b>0.91</b>	<b>6,978</b>	<b>0.91</b>
A21 Lowest Floor Construction	1,140	1.00		1,365	1.20	1,365	1.20
A22 Upper Floor Construction	3,208	1.00		3,114	0.97	3,114	0.97
A23 Roof Construction	3,330	1.00		2,499	0.75	2,499	0.75
<b>A3 EXTERIOR CLADDING</b>		<b>24,561</b>	<b>1.00</b>	<b>21,484</b>	<b>0.87</b>	<b>21,484</b>	<b>0.87</b>
A31 Walls Below Grade	6,596	1.00		5,682	0.86	5,682	0.86
A32 Walls Above Grade	7,010	1.00		4,194	0.60	4,194	0.60
A33 Windows and Entrances	4,610	1.00		5,490	1.19	5,490	1.19
A34 Roof Coverings	4,680	1.00		4,882	1.04	4,882	1.04
A35 Projections	1,665	1.00		1,235	0.74	1,235	0.74
<b>A4 HOUSE FRAMING (LABOUR)</b>		<b>6,000</b>	<b>1.00</b>	<b>7,368</b>	<b>1.23</b>	<b>7,368</b>	<b>1.23</b>
A41 House Framing Labour	6,000	1.00		7,368	1.23	7,368	1.23
<b>B INTERIORS</b>		<b>21,715</b>	<b>1.00</b>	<b>17,828</b>	<b>0.82</b>	<b>17,828</b>	<b>0.82</b>
<b>B1 PARTITIONS &amp; DOORS</b>		<b>4,486</b>	<b>1.00</b>	<b>5,334</b>	<b>1.19</b>	<b>5,334</b>	<b>1.19</b>
B11 Partitions	3,445	1.00		3,314	0.96	3,314	0.96
B12 Doors	1,041	1.00		2,020	1.94	2,020	1.94
<b>B2 FINISHES</b>		<b>6,818</b>	<b>1.00</b>	<b>6,777</b>	<b>0.99</b>	<b>6,777</b>	<b>0.99</b>
B21 Floor Finishes	4,356	1.00		2,487	0.57	2,487	0.57
B22 Ceiling Finishes	1,000	1.00		690	0.69	690	0.69
B23 Wall Finishes	1,463	1.00		3,600	2.46	3,600	2.46
<b>B3 FITTINGS &amp; EQUIPMENT</b>		<b>10,411</b>	<b>1.00</b>	<b>5,716</b>	<b>0.55</b>	<b>5,716</b>	<b>0.55</b>
B31 Fittings & Fixtures	6,836	1.00		3,286	0.48	3,286	0.48
B32 Equipment	3,575	1.00		2,430	0.68	2,430	0.68
<b>C SERVICES</b>		<b>9,850</b>	<b>1.00</b>	<b>16,424</b>	<b>1.67</b>	<b>16,424</b>	<b>1.67</b>
<b>C1 MECHANICAL</b>		<b>6,500</b>	<b>1.00</b>	<b>10,045</b>	<b>1.55</b>	<b>10,045</b>	<b>1.55</b>
C11 Mechanical	6,500	1.00		10,045	1.55	10,045	1.55
<b>C2 ELECTRICAL</b>		<b>3,350</b>	<b>1.00</b>	<b>6,379</b>	<b>1.90</b>	<b>6,379</b>	<b>1.90</b>
C21 Electrical	3,350	1.00		6,379	1.90	6,379	1.90
<b>EXCLUDING SITE</b>		<b>73,183</b>	<b>1.00</b>	<b>75,849</b>	<b>1.04</b>	<b>75,849</b>	<b>1.04</b>
<b>D1 SITE WORK</b>		<b>5,044</b>	<b>1.00</b>	<b>2,248</b>	<b>0.45</b>	<b>2,248</b>	<b>0.45</b>
D11 Site Development	5,044	1.00		2,248	0.45	2,248	0.45
<b>INCLUDING SITE</b>		<b>78,227</b>	<b>1.00</b>	<b>78,097</b>	<b>1.00</b>	<b>78,097</b>	<b>1.00</b>
<b>Z1 GENERALREQTS &amp; FEE</b>		<b>7,040</b>	<b>1.00</b>	<b>16,369</b>	<b>2.33</b>	<b>16,369</b>	<b>2.33</b>
Z11 General Requirements	7,040	1.00	N/A	6,248	0.89	6,248	0.89
Z12 Fee	0			10,121	N/A	10,121	N/A
<b>TOTAL</b>		<b>85,267</b>	<b>1.00</b>	<b>70,900</b>	<b>0.83</b>	<b>94,466</b>	<b>1.11</b>
<b>Cost per m<sup>2</sup>:</b>		<b>853</b>	<b>1.00</b>	<b>709</b>	<b>0.83</b>	<b>945</b>	<b>1.11</b>

CANADA vs. CHILE			Costing Date: August 2000	Report Date: February 25, 2003	Per GFA of: 100 m <sup>2</sup>
Element	Canada Wood Frame	Chile Wood Frame	Chile	Traditional House	Chile
<b>A SHELL</b>					
<b>A1 SUBSTRUCTURE</b>	Concrete, plastic weeping tile Full basement	Concrete Full basement	Concrete	No basement	Concrete
A21 Lowest Floor Construction	100mm concrete slab on grade 38mm x 235mm K.D. floor joist	100mm concrete slab on grade	100mm concrete slab on grade		
A22 Upper Floor Construction	Engineered wood trusses	Wood trusses site fabricated	Concrete frame		
<b>A3 EXTERIOR CLADDING</b>	200mm concrete w/ asphaltic emulsion 38mm x 140mm K.D. brick/vinyl siding Vinyl clad wood framed window 25-year asphalt shingles	200mm concrete w/ asphaltic emulsion 38mm x 140mm studs, brick/vinyl siding Vinyl clad wood framed window 25-year asphalt shingles	Masonry exterior walls (not insulated) Windows, vinyl clad, wood framed Asphalt shingles w/ insulation		
A31 Walls Below Grade					
A32 Walls Above Grade					
A33 Windows and Entrances					
A34 Roof Coverings					
A35 Projections					
<b>A4 HOUSE FRAMING (LABOUR)</b>	Pre-finished aluminum soffit, pipe, fascia	Pre-finished aluminum soffit, pipe, fascia	Aluminum eavestrough and down spouts		
A41 House Framing Labour	Lump sum framing labour	Lump sum framing labour	Lump sum framing labour		
<b>B INTERIORS</b>					
<b>B1 PARTITIONS &amp; DOORS</b>	38mm x 89mm K.D. wood framing Hollow core wood door (painted)	38mm x 89mm studs, wood framing Hollow core wood door (painted)	Gypsum wallboard on masonry infill Hollow core wood door		
B11 Partitions					
B12 Doors					
<b>B2 FINISHES</b>	35 oz. carpet, sheet vinyl, wood Textured gypsum board Painted gypsum board	35 oz. Carpet, sheet vinyl, wood Textured gypsum board Painted gypsum board	Carpet, sheet vinyl flooring, wood Textured ceiling finish Paint and ceramic tile to washroom		
B21 Floor Finishes					
B22 Ceiling Finishes					
B23 Wall finishes					
<b>B3 FITTINGS &amp; EQUIPMENT</b>	Melamine w/ arborite counter top Wood burning fireplace	Melamine w/ arborite counter top Wood burning fireplace	Kitchen cabinets & vanities Wood burning fireplace w/ mantel		
B31 Fittings & Fixtures					
B32 Equipment					
<b>C SERVICES</b>	No air-conditioning	No air-conditioning	No air-conditioning		
<b>C1 MECHANICAL</b>	Gas fired forced air heating One 4-piece bathroom	Gas fired forced air heating One 4-piece bathroom	Gas heating unit 70% efficient One and a half baths, kitchen plumbing		
<b>C2 ELECTRICAL</b>	100 amps main service 110 volts, Canadian standard	100 amps main service Per Chile standard	One and a half baths, kitchen plumbing Per Chile standard		
<b>EXCLUDING SITE</b>					
<b>D1 SITE WORK</b>	Site services incl w/ land price Not included, except deck	Site services incl w/ land price Not included, except deck	Site services incl. W/ land price Not included, except deck		
<b>Z1 GENERAL REQUESTS &amp; FEE</b>					
Z11 General Requirements					
Z12 Fee					
<b>TOTAL</b>	<b>GFA: 100 m<sup>2</sup></b>	<b>GFA: 100 m<sup>2</sup></b>	<b>GFA: 100 m<sup>2</sup></b>	<b>GFA: 100 m<sup>2</sup></b>	<b>GFA: 100 m<sup>2</sup></b>

### 3. CHINA

**Hanscom**  
**CMHC HOUSING STUDY**  
**100M2 HOUSE TIMBER FRAMED**  
**CHINA**

**TRADE SUMMARY**

Costing Date:  
 Currency Rate: (CAD/CNY)  
 Report Date:

August 2000

0.1777470

January 29, 2003 R

Description	Amount as Priced CNY	Converted to Canadian \$	CAD Amount IN CANADA	Ratios to Canada CNY/CAD	CAD/CAD	Remarks
1. Excavate, Backfill, Gravel	18,280 CNY	3,249 CAD	2,138 CAD	8.55	1.52	
2. Concrete Steel & Formwork	37,831 CNY	6,724 CAD	9,505 CAD	3.98	0.71	
3. Dampproofing	5,330 CNY	947 CAD	902 CAD	5.91	1.05	
4a. Rough Carpentry (Materials Only)						
- Lumber	32,650 CNY	5,803 CAD	3,335 CAD	9.79	1.74	
- Plywood	15,315 CNY	2,722 CAD	2,526 CAD	6.06	1.08	
- Trusses	42,770 CNY	7,602 CAD	2,190 CAD	19.53	3.47	
- Stairs	1,715 CNY	305 CAD	768 CAD	2.23	0.40	
- Deck	11,009 CNY	1,957 CAD	1,717 CAD	6.41	1.14	
<b>Subtotal Rough Carpentry (Materials)</b>	<b>103,459 CNY</b>	<b>18,390 CAD</b>	<b>10,535 CAD</b>	<b>9.82</b>	<b>1.75</b>	
4b. Rough Carpentry (Framing Labour)						
72,500 CNY	12,887 CAD	7,650 CAD	9.48	1.68		
7,420 CNY	1,319 CAD	2,660 CAD	2.79	0.50		
5. Roofing	10,005 CNY	1,778 CAD	3,085 CAD	3.24	0.58	
6a. Windows (Materials Only)						
9,000 CNY	1,600 CAD	1,260 CAD	7.14	1.27		
6b. Doors						
51,575 CNY	9,167 CAD	6,685 CAD	7.72	1.37		
7. Exterior Cladding/Roof Elements						
11,110 CNY	1,975 CAD	3,000 CAD	3.70	0.66		
8. Plumbing	15,198 CNY	2,701 CAD	3,350 CAD	4.54	0.81	
9. Electrical	23,810 CNY	4,232 CAD	3,500 CAD	6.80	1.21	
10. Heating	6,400 CNY	1,138 CAD	3,615 CAD	1.77	0.31	
11. Specialty Items						
12. Drywall, Insulation, Caulking						
13. Cabinets & Vanities						
- Material	17,800 CNY	3,164 CAD	3,450 CAD	5.16	0.92	
- Labour	160 CNY	28 CAD	700 CAD	0.23	0.04	
<b>Subtotal Cabinet &amp; Vanities</b>	<b>17,960 CNY</b>	<b>3,192 CAD</b>	<b>4,150 CAD</b>	<b>4.33</b>	<b>0.77</b>	
14. Painting, Stain, Lacquer						
12,525 CNY	2,226 CAD	2,040 CAD	6.14	1.09		
15. Interior Finishing						
- Doors	13,550 CNY	2,408 CAD	820 CAD	16.52	2.94	
- Casings, Trims, Handrails	6,945 CNY	1,234 CAD	1,724 CAD	4.03	0.72	
- Door Hardware	1,960 CNY	348 CAD	346 CAD	5.66	1.01	
- Bathroom Accessories	1,715 CNY	305 CAD	802 CAD	2.14	0.38	
<b>Subtotal Interior Finishing</b>	<b>24,170 CNY</b>	<b>4,296 CAD</b>	<b>3,692 CAD</b>	<b>6.55</b>	<b>1.16</b>	
16. Floor Coverings	19,200 CNY	3,413 CAD	4,190 CAD	4.58	0.81	
17. Miscellaneous & Fees	76,120 CNY	13,530 CAD	7,040 CAD	10.81	1.92	
<b>Total Wood Frame House Cost:</b>	<b>567,218 CNY</b>	<b>100,821 CAD</b>	<b>85,267 CAD</b>	<b>6.65</b>	<b>1.18</b>	
<b>Cost per m2:</b>	<b>5,672.18 CNY</b>	<b>1,008.21 CAD</b>	<b>852.67 CAD</b>	<b>6.65</b>	<b>1.18</b>	
	(1)	(2)	(3)			

Project : CMHC HOUSING STUDY		ELEMENTAL COST SUMMARY						Costing Date: August 2000		Report Date: January 29, 2003 R	
Location : CHINA				Currency Rate: 0.1777470	CAD/CNY			Canadian \$ IN CANADA	Rate per m <sup>2</sup>	Canadian \$ IN CAD	Ratios to Canada CAD/CAD
Element	Ratio to GFA	Elemental Cost	Elemental CNY	Rate per m <sup>2</sup> CNY	%	Converted to Canadian \$	Rate per m <sup>2</sup>	Canadian \$ IN CANADA	CNY/CAD	GFA:	
<b>A SHELL</b>						534.66	416.18	7.23	1.13		
<b>A1 SUBSTRUCTURE</b>						38.15	33.79	6.35	1.13		
A11 Foundations	1.000	100 m <sup>2</sup>	62.86	21,466	3.8	11.17	16.81	3.74	0.66		
A12 Basement Excavations	3.000	300 m <sup>3</sup>	50.60	6,286		26.98	16.98	8.94	1.59		
A13 Roof Construction	1.000	100 m <sup>2</sup>	534.90	15.180							
<b>A2 STRUCTURE</b>						13.5	135.63	9.94	1.77		
A21 Lowest Floor Construction	1.000	100 m <sup>2</sup>	62.85	76,305		11.17	11.40	5.51	0.98		
A22 Upper Floor Construction	1.000	100 m <sup>2</sup>	165.30	6,285		29.38	32.08	5.15	0.92		
A23 Roof Construction	1.000	100 m <sup>2</sup>	534.90	53,490		95.08	33.30	16.06	2.86		
<b>A3 EXTERIOR CLADDING</b>						27.0	272.00	6.23	1.11		
A31 Walls Below Grade	0.980	98 m <sup>2</sup>	328.58	153,026		322.01	57.24	65.96	4.88		
A32 Walls Above Grade	0.980	98 m <sup>2</sup>	703.83	32,201		689.75	122.60	70.10	9.84		
A33 Windows and Entrances	0.130	13 no.	1,608.08	68,975		209.05	37.16	46.10	4.53		
A34 Roof Coverings	1.400	140 m <sup>2</sup>	145.86	20,905		204.20	36.30	46.80	4.36		
A35 Projections	0.250	25 m <sup>2</sup>	421.00	10.525		105.25	18.71	16.65	6.32		
<b>A4 HOUSE FRAMING (LABOUR)</b>						8.8	88.87	60.00	8.33		
A41 House Framing Labour	1.000	100 m <sup>2</sup>	500.00	50,000		500.00	88.87	60.00	8.33		
<b>B INTERIORS</b>						18.2	183.39	217.15	4.75		
<b>B1 PARTITIONS &amp; DOORS</b>						1,031.75	35.60	63.38	44.86		
B11 Partitions	2.050	205 m <sup>2</sup>	101.71	35,660		20,850	6.3	37.06	7.95		
B12 Doors	0.110	11 no.	1,346.36	208.50		14,810	208.50	34.45	6.05		
<b>B2 FINISHES</b>						5.9	59.40	26.32	10.41		
B21 Floor Finishes	1.000	100 m <sup>2</sup>	199.20	33,420		199.20	35.41	43.56	4.57		
B22 Ceiling Finishes	1.000	100 m <sup>2</sup>	45.00	4,500		45.00	8.00	10.00	4.50		
B23 Wall Finishes	4.160	416 m <sup>2</sup>	21.63	9,000		90.00	16.00	14.63	6.15		
<b>B3 FITTINGS &amp; EQUIPMENT</b>						6.0	60.60	104.11	3.27		
B31 Fittings & Fixtures	1.000	100 m <sup>2</sup>	278.95	34,095		27,895	49.58	68.36	4.08		
B32 Equipment	1.000	100 m <sup>2</sup>	62.00	6,200		62.00	11.02	35.75	1.73		
<b>C SERVICES</b>						8.8	89.08	98.50	5.09		
<b>C1 MECHANICAL</b>						6.2	62.07	65.00	5.37		
C11 Mechanical	1.000	100 m <sup>2</sup>	349.20	34,920		349.20	62.07	65.00	5.37		
<b>C2 ELECTRICAL</b>						2.7	27.01	33.50	4.54		
C21 Electrical	1.000	100 m <sup>2</sup>	151.98	15,198		151.98	27.01	33.50	4.54		
<b>NET BUILDING COST - EXCLUDING SITE</b>						80.1	807.13	731.83	6.20		
<b>D1 SITE WORK</b>						6.5	65.78	50.44	7.34		
D11 Site Development	0.010	1 sum	37,009	37,009			65.78	50.44	7.34		
<b>NET BUILDING COST - INCLUDING SITE</b>											
<b>Z1 GENERAL REQUIREMENTS &amp; FEE</b>						86.6	872.91	782.27	6.28		
Z11 General Requirements	10.0%					4,910.98					
Z12 Fee	5.0%					761.20	135.30	70.40	10.81		
<b>TOTAL EXCLUDING CONTINGENCIES</b>						5,672.18	5,672.18	100.0	1,008.21		
						(1)	(2)	(3)			

Project : CMHC HOUSING STUDY Location : CHINA		CANADA vs. CHINA (IN CAD)						Costing Date: August 2000 Report Date: February 25, 2003 Per GFA of: 100 m <sup>2</sup>		
Trade Description		Currency Rate: 0.11777470 CAD/CNY						Shanghai Wood Frame	Total \$ CAD/CAD	Potential Export Opportunity
		Canada Wood Frame	Total \$ CAD/CAD	China Traditional: \$/100m <sup>2</sup>	CAD/CAD	Beijing Wood Frame				
1. Excavate, Backfill, Gravel	2,138	1.00			3,249	1.52	3,041	1.42		
2. Concrete Steel & Formwork	9,505	1.00			6,724	0.71	6,294	0.66		
3. Dampproofing	902	1.00			947	1.05	887	0.98		
4a. Rough Carpentry (Materials Only)										
- Lumber	3,335	1.00			5,803	1.74	5,432	1.63		
- Plywood	2,526	1.00			2,722	1.08	2,548	1.01		
- Trusses	2,190	1.00			7,602	3.47	7,116	3.25		
- Stairs	768	1.00			305	0.40	285	0.37		
- Deck	1,717	1.00			1,957	1.14	1,832	1.07		
<b>Subtotal Rough Carpentry (Materials)</b>	<b>10,535</b>	<b>1.00</b>			<b>18,390</b>	<b>1.75</b>	<b>17,213</b>	<b>1.63</b>		
4b. Rough Carpentry (Framing Labour)	7,650	1.00			12,887	1.68	12,062	1.58		
4c. Masonry - Exterior / Interior	0	N/A			0	N/A	0	N/A		
5. Roofing	2,660	1.00			1,319	0.50	1,234	0.46		
6a. Windows (Materials Only)	3,085	1.00			1,778	0.58	1,665	0.54		
6b. Doors	1,260	1.00			1,600	1.27	1,497	1.19		
7. Exterior Cladding/Roof Elements	6,685	1.00			9,167	1.37	8,581	1.28		
8. Plumbing	3,000	1.00			1,975	0.66	1,848	0.62		
9. Electrical	3,350	1.00			2,701	0.81	2,529	0.75		
10. Heating	3,500	1.00			4,232	1.21	3,961	1.13		
11. Specialty Items	3,615	1.00			1,138	0.31	1,065	0.29		
12. Drywall, Insulation, Caulking	6,270	1.00			8,056	1.28	7,541	1.20		
13. Cabinets & Vanities										
- Material	3,450	1.00			3,164	0.92	2,961	0.86		
- Labour	700	1.00			28	0.04	27	0.04		
<b>Subtotal Cabinet &amp; Vanities</b>	<b>4,150</b>	<b>1.00</b>			<b>3,192</b>	<b>0.77</b>	<b>2,988</b>	<b>0.72</b>		
14. Painting, Stain, Lacquer	2,040	1.00			2,226	1.09	2,084	1.02		
15. Interior Finishing										
- Doors	820	1.00			2,408	2.94	2,254	2.75		
- Casing, Trims, Handrails	1,724	1.00			1,234	0.72	1,155	0.67		
- Door Hardware	346	1.00			348	1.01	326	0.94		
- Bathroom Accessories	802	1.00			305	0.38	285	0.36		
<b>Subtotal Interior Finishing</b>	<b>3,692</b>	<b>1.00</b>			<b>4,296</b>	<b>1.16</b>	<b>4,021</b>	<b>1.09</b>		
16. Floor Coverings	4,190	1.00			3,413	0.81	3,194	0.76		
17. Miscellaneous & Fees	7,040	1.00			13,530	1.92	12,664	1.80		
<b>Total Wood Frame House Cost:</b>	<b>85,267</b>	<b>1.00</b>	<b>76,289</b>	<b>0.89</b>	<b>100,821</b>	<b>1.18</b>	<b>94,369</b>	<b>1.11</b>		
<b>Cost per m<sup>2</sup>:</b>	<b>853</b>	<b>1.00</b>	<b>763</b>	<b>0.89</b>	<b>1,008</b>	<b>1.18</b>	<b>944</b>	<b>1.11</b>		

Project : CMHC HOUSING STUDY		CANADA vs. CHINA (IN CAD)				Costing Date: August 2000	
Location : CHINA		Currency Rate: 0.1777470 CAD/CNY				Report Date: February 25, 2003	
		Element		Canada	China	Beijing	Shanghai
		Total \$	CAD/CAD	Total \$	CAD/CAD	Total \$	CAD/CAD
		Total \$	CAD/CAD	Total \$	CAD/CAD	Total \$	CAD/CAD
<b>A SHELL</b>		<b>41,618</b>	<b>1.00</b>	<b>53,466</b>	<b>1.28</b>	<b>50,044</b>	<b>1.20</b>
<b>A1 SUBSTRUCTURE</b>		<b>3,379</b>	<b>1.00</b>	<b>3,815</b>	<b>1.13</b>	<b>3,571</b>	<b>1.06</b>
A11 Foundations	1,681	1.00		1,117	0.66	1,046	0.62
A12 Basement Excavations	1,698	1.00		2,698	1.59	2,526	1.49
<b>A2 STRUCTURE</b>		<b>7,678</b>	<b>1.00</b>	<b>13,563</b>	<b>1.77</b>	<b>12,695</b>	<b>1.65</b>
A21 Lowest Floor Construction	1,140	1.00		1,117	0.98	1,046	0.92
A22 Upper Floor Construction	3,208	1.00		2,938	0.92	2,750	0.86
A23 Roof Construction	3,330	1.00		9,508	2.86	8,899	2.67
<b>A3 EXTERIOR CLADDING</b>		<b>24,561</b>	<b>1.00</b>	<b>27,200</b>	<b>1.11</b>	<b>25,459</b>	<b>1.04</b>
A31 Walls Below Grade	6,596	1.00		5,724	0.87	5,357	0.81
A32 Walls Above Grade	7,010	1.00		12,260	1.75	11,475	1.64
A33 Windows and Entrances	4,610	1.00		3,716	0.81	3,478	0.75
A34 Roof Coverings	4,680	1.00		3,630	0.78	3,397	0.73
A35 Projections	1,665	1.00		1,871	1.12	1,751	1.05
<b>A4 HOUSE FRAMING (LABOUR)</b>		<b>6,000</b>	<b>1.00</b>	<b>8,887</b>	<b>1.48</b>	<b>8,319</b>	<b>1.39</b>
A41 House Framing Labour	6,000	1.00		8,887	1.48	8,319	1.39
<b>B INTERIORS</b>		<b>21,715</b>	<b>1.00</b>	<b>18,339</b>	<b>0.84</b>	<b>17,165</b>	<b>0.79</b>
<b>B1 PARTITIONS &amp; DOORS</b>		<b>4,486</b>	<b>1.00</b>	<b>6,338</b>	<b>1.41</b>	<b>5,933</b>	<b>1.32</b>
B11 Partitions	3,445	1.00		3,706	1.08	3,469	1.01
B12 Doors	1,041	1.00		2,632	2.53	2,464	2.37
<b>B2 FINISHES</b>		<b>6,818</b>	<b>1.00</b>	<b>5,940</b>	<b>0.87</b>	<b>5,560</b>	<b>0.82</b>
B21 Floor Finishes	4,356	1.00		3,541	0.81	3,314	0.76
B22 Ceiling Finishes	1,000	1.00		800	0.80	749	0.75
B23 Wall Finishes	1,463	1.00		1,600	1.09	1,497	1.02
<b>B3 FITTINGS &amp; EQUIPMENT</b>		<b>10,411</b>	<b>1.00</b>	<b>6,060</b>	<b>0.58</b>	<b>5,672</b>	<b>0.54</b>
B31 Fittings & Fixtures	6,836	1.00		4,958	0.73	4,641	0.68
B32 Equipment	3,575	1.00		1,102	0.31	1,032	0.29
<b>C SERVICES</b>		<b>9,850</b>	<b>1.00</b>	<b>8,908</b>	<b>0.90</b>	<b>8,338</b>	<b>0.85</b>
<b>C1 MECHANICAL</b>		<b>6,500</b>	<b>1.00</b>	<b>6,207</b>	<b>0.95</b>	<b>5,810</b>	<b>0.89</b>
C11 Mechanical	6,500	1.00		6,207	0.95	5,810	0.89
<b>C2 ELECTRICAL</b>		<b>3,350</b>	<b>1.00</b>	<b>2,701</b>	<b>0.81</b>	<b>2,529</b>	<b>0.75</b>
C21 Electrical	3,350	1.00		2,701	0.81	2,529	0.75
<b>EXCLUDING SITE</b>		<b>73,183</b>	<b>1.00</b>	<b>80,713</b>	<b>1.10</b>	<b>75,547</b>	<b>1.03</b>
<b>D1 SITE WORK</b>		<b>5,044</b>	<b>1.00</b>	<b>6,578</b>	<b>1.30</b>	<b>6,157</b>	<b>1.22</b>
D11 Site Development	5,044	1.00		6,578	1.30	6,157	1.22
<b>INCLUDING SITE</b>		<b>78,227</b>	<b>1.00</b>	<b>87,291</b>	<b>1.12</b>	<b>81,705</b>	<b>1.04</b>
<b>Z1 GENERALREQTS &amp; FEE</b>		<b>7,040</b>	<b>1.00</b>	<b>13,530</b>	<b>1.92</b>	<b>12,664</b>	<b>1.80</b>
Z11 General Requirements	7,040	1.00		8,729	1.24	8,170	1.16
Z12 Fee	0	N/A		4,801	N/A	4,494	N/A
<b>TOTAL</b>		<b>85,267</b>	<b>1.00</b>	<b>100,821</b>	<b>1.18</b>	<b>94,369</b>	<b>1.11</b>
<b>Cost per m2:</b>		<b>853</b>	<b>1.00</b>	<b>763</b>	<b>0.89</b>	<b>944</b>	<b>1.11</b>

CANADA vs. CHINA				Costing Date: August 2000
				Report Date: February 25, 2003
				Per GFA of: 100 m <sup>2</sup>
Element	Canada Wood Frame	China Wood Frame	China Traditional House	
<b>A SHELL</b>				
<b>A1 SUBSTRUCTURE</b>	Concrete, plastic weeping tile Full basement	Concrete, plastic weeping tile Full basement	Concrete slab on grade Precast concrete planks w/ topping Attic and roof slab	Concrete No basement
A21 Lowest Floor Construction	100mm concrete slab on grade 38mm x 235mm K.D. floor joist Engineered wood trusses	100mm concrete slab on grade 38mm x 235mm floor joist Engineered wood trusses (site fabricated)	Concrete slab on grade Precast concrete planks w/ topping Attic and roof slab	Concrete slab on grade Precast concrete planks w/ topping Attic and roof slab
A22 Upper Floor Construction				
A23 Roof Construction				
<b>A3 EXTERIOR CLADDING</b>				
A31 Walls Below Grade	200mm concrete w/ asphaltic emulsion 38mm x 140mm K.D. brick/vinyl siding Vinyl clad wood framed window	200mm concrete w/ asphaltic emulsion 38mm x 140mm stud, brick/vinyl siding Vinyl clad wood framed window	Concrete basement wall Face brick, gypsum board and ext. tile Vinyl clad wood windows	Concrete basement wall Face brick, gypsum board and ext. tile Vinyl clad wood windows
A32 Walls Above Grade				
A33 Windows and Entrances				
A34 Roof Coverings	25-year asphalt shingles	25-year asphalt shingles	Clay tile with waterproofing	Clay tile with waterproofing
A35 Projections				
<b>A4 HOUSE FRAMING (LABOUR)</b>				
A41 House Framing Labour	Lump sum framing labour	Lump sum framing labour		
<b>B INTERIORS</b>				
<b>B1 PARTITIONS &amp; DOORS</b>				
B11 Partitions	38mm x 89mm K.D. wood framing Hollow core wood door (painted)	38mm x 89mm studs wood framing Hollow core wood door (painted)	Brick and plaster partitions Hollow core wood deck	Brick and plaster partitions Hollow core wood deck
B12 Doors				
<b>B2 FINISHES</b>				
B21 Floor Finishes	35 oz. carpet, sheet vinyl, wood Textured gypsum board Painted gypsum board	35 oz. carpet, sheet vinyl, wood Textured gypsum board Painted gypsum board	Carpet, sheet vinyl, wood maple Textured ceiling finish paint Paint	Carpet, sheet vinyl, wood maple Textured ceiling finish paint Paint
B22 Ceiling Finishes				
B23 Wall finishes				
<b>B3 FITTINGS &amp; EQUIPMENT</b>				
B31 Fittings & Fixtures	Melamine w/ arborite counter top Wood burning fireplace	Melamine w/ arborite counter top Brick fireplace priced	Kitchen cabinets, vanities	Kitchen cabinets, vanities
B32 Equipment	No air-conditioning	No air-conditioning		
<b>C SERVICES</b>				
<b>C1 MECHANICAL</b>	Gas fired forced air heating One 4-piece bathroom	Oil fired furnace & ductwork Plumbing per China standard	Oil fired furnace & ductwork Plumbing per China standard	Oil fired furnace & ductwork Plumbing per China standard
<b>C2 ELECTRICAL</b>	100 amps main service 110 volts, Canadian standard	Electrical per China standard	Electrical per China standard	Electrical per China standard
<b>EXCLUDING SITE</b>				
<b>D1 SITE WORK</b>	Site services incl w/ land price Not included, except deck	Site services excluded Cedar deck included	Cedar deck included	Cedar deck included
<b>Z1 GENERAL REQUESTS &amp; FEE</b>				Balance of site development to be excluded
Z11 General Requirements				
Z12 Fee				
<b>TOTAL</b>	<b>GFA: 100 m<sup>2</sup></b>	<b>GFA: 100 m<sup>2</sup></b>	<b>GFA: 100 m<sup>2</sup></b>	<b>GFA: 100 m<sup>2</sup></b>

## 4. FRANCE

**Hanscom**  
**CMHC HOUSING STUDY**  
**100M2 HOUSE TIMBER FRAMED**  
**FRANCE**

**TRADE SUMMARY**

Costing Date: August 2000  
 Currency Rate: (CAD/FRF) 0.1991470  
 Report Date: January 21, 2003 R

Description	Amount as Priced FRF	Converted to Canadian \$	CAD Amount IN CANADA	Ratios to Canada FRF/CAD	CAD/CAD	Remarks
1. Excavate, Backfill, Gravel	14,464 FRF	2,880 CAD	2,138 CAD	6.77	1.35	
2. Concrete Steel & Formwork	54,292 FRF	10,812 CAD	9,505 CAD	5.71	1.14	
3. Dampproofing	7,216 FRF	1,437 CAD	902 CAD	8.00	1.59	
4a. Rough Carpentry (Materials Only)						
- Lumber	14,560 FRF	2,900 CAD	3,335 CAD	4.37	0.87	
- Plywood	19,736 FRF	3,930 CAD	2,526 CAD	7.81	1.56	
- Trusses	16,760 FRF	3,338 CAD	2,190 CAD	7.65	1.52	
- Stairs	720 FRF	143 CAD	768 CAD	0.94	0.19	
- Deck	8,620 FRF	1,717 CAD	1,717 CAD	5.02	1.00	
Subtotal Rough Carpentry (Materials)	60,396 FRF	12,028 CAD	10,535 CAD	5.73	1.14	
4b. Rough Carpentry (Framing Labour)						
5. Roofing	30,400 FRF	6,054 CAD	7,650 CAD	3.97	0.79	
6a. Windows (Materials Only)	22,400 FRF	4,461 CAD	2,660 CAD	8.42	1.68	
6b. Doors	12,320 FRF	2,453 CAD	3,085 CAD	3.99	0.80	
7. Exterior Cladding/Roof Elements	8,240 FRF	1,641 CAD	1,260 CAD	6.54	1.30	
8. Plumbing	48,280 FRF	9,615 CAD	6,685 CAD	7.22	1.44	
9. Electrical	15,880 FRF	3,162 CAD	3,000 CAD	5.29	1.05	
10. Heating	25,600 FRF	5,098 CAD	3,350 CAD	7.64	1.52	
11. Speciality Items	36,000 FRF	7,169 CAD	3,500 CAD	10.29	2.05	
12. Drywall, Insulation, Caulking	12,560 FRF	2,501 CAD	3,615 CAD	3.47	0.69	
13. Cabinets & Vanities	32,140 FRF	6,401 CAD	6,270 CAD	5.13	1.02	
- Material	13,440 FRF	2,677 CAD	3,450 CAD	3.90	0.78	
- Labour	3,200 FRF	637 CAD	700 CAD	4.57	0.91	
Subtotal Cabinet & Vanities	16,640 FRF	3,314 CAD	4,150 CAD	4.01	0.80	
14. Painting, Stain, Lacquer						
15. Interior Finishing						
- Doors	7,136 FRF	1,421 CAD	820 CAD	8.70	1.73	
- Casings, Trims, Handrails	8,240 FRF	1,641 CAD	1,724 CAD	4.78	0.95	
- Door Hardware	1,744 FRF	347 CAD	346 CAD	5.04	1.00	
- Washroom Accessories	2,696 FRF	537 CAD	802 CAD	3.36	0.67	
Subtotal Interior Finishing	19,816 FRF	3,946 CAD	3,692 CAD	5.37	1.07	
16. Floor Coverings	19,920 FRF	3,967 CAD	4,190 CAD	4.75	0.95	
17. Miscellaneous & Fees	96,071 FRF	19,132 CAD	7,040 CAD	13.65	2.72	
<b>Total Wood Frame House Cost:</b>	<b>553,555 FRF</b>	<b>110,239 CAD</b>	<b>85,267 CAD</b>	<b>6.49</b>	<b>1.29</b>	
<b>Cost per m2:</b>	<b>5,535.55 FRF</b>	<b>1,102.39 CAD</b>	<b>852.67 CAD</b>	<b>6.49</b>	<b>1.29</b>	
	(1)	(2)	(3)			

Project : CMHC HOUSING STUDY		ELEMENTAL COST SUMMARY						Costing Date: August 2000		Report Date: January 21, 2003 R	
Location : FRANCE		Currency Rate: 0.1991470 CAD/FRF						GFA: 100 m <sup>2</sup>			
Element	Ratio to GFA	Elemental Cost	Elemental FRF	Rate per m <sup>2</sup> FRF	%	Converted to Canadian \$	Rate per m <sup>2</sup> IN CANADA	FRI/CAD	CAD/CAD	Ratios to Canada	
<b>A SHELL</b>		100 m <sup>2</sup>				493.67	416.18	5.96	1.19		
<b>A1 SUBSTRUCTURE</b>											
A11 Foundations	1.000	100 m <sup>2</sup>	100.00	247,892	4.0	44.58	33.79	6.62	1.32		
A12 Basement Excavations	3.000	300 m <sup>3</sup>	41.28	22,384		19.91	16.81	5.95	1.18		
<b>A2 STRUCTURE</b>											
A21 Lowest Floor Construction	1.000	100 m <sup>2</sup>	65.60	45,640	8.2	90.89	76.78	5.94	1.18		
A22 Upper Floor Construction	1.000	100 m <sup>2</sup>	122.80			13.06	11.40	5.75	1.15		
A23 Roof Construction	1.000	100 m <sup>2</sup>	268.00	268.00		24.46	32.08	3.83	0.76		
<b>A3 EXTERIOR CLADDING</b>											
A31 Walls Below Grade	0.980	98 m <sup>2</sup>	432.94	155,868	28.2	310.41	245.61	6.35	1.26		
A32 Walls Above Grade	0.980	98 m <sup>2</sup>	478.78			84.49	65.96	6.43	1.28		
A33 Windows and Entrances	0.130	13 no.	1,710.77	46,920		93.44	70.10	6.69	1.33		
A34 Roof Coverings	1.400	140 m <sup>2</sup>	226.86			44.29	46.10	4.82	0.96		
A35 Projections	0.250	25 m <sup>2</sup>	500.80	12,520		63.25	46.80	6.79	1.35		
<b>A4 HOUSE FRAMING (LABOUR)</b>											
A41 House Framing Labour	1.000	100 m <sup>2</sup>	240.00	24,000	4.3	24.00	47.80	16.65	7.52	1.50	
<b>B INTERIORS</b>											
<b>B1 PARTITIONS &amp; DOORS</b>											
B11 Partitions	2.050	205 m <sup>2</sup>	80.78	24,720	4.5	49.23	44.86	5.51	1.10		
B12 Doors	0.110	11 no.	741.82			32.98	34.45	4.81	0.96		
<b>B2 FINISHES</b>											
B21 Floor Finishes	1.000	100 m <sup>2</sup>	204.96	45,296	8.2	90.21	68.18	6.64	1.32		
B22 Ceiling Finishes	1.000	100 m <sup>2</sup>	68.00			204.96	40.82	43.56	4.71		
B23 Wall Finishes	4.160	416 m <sup>2</sup>	43.27	18,000		68.00	13.54	10.00	6.80		
<b>B3 FITTINGS &amp; EQUIPMENT</b>											
B31 Fittings & Fixtures	1.000	100 m <sup>2</sup>	289.96	41,396	7.5	82.44	104.11	3.98	0.79		
B32 Equipment	1.000	100 m <sup>2</sup>	124.00			289.96	57.74	68.36	4.24		
<b>C SERVICES</b>											
<b>C1 MECHANICAL</b>											
C11 Mechanical	1.000	100 m <sup>2</sup>	518.80	77,480	14.0	154.30	98.50	7.87	1.57		
<b>C2 ELECTRICAL</b>											
C21 Electrical	1.000	100 m <sup>2</sup>	256.00	25,600	4.6	103.32	65.00	7.98	1.59		
<b>NET BUILDING COST - EXCLUDING SITE</b>											
D1 SITE WORK											
D11 Site Development	0.010	1 sum	20,700	436,784	78.9	869.84	731.83	5.97	1.19		
<b>NET BUILDING COST - INCLUDING SITE</b>											
Z1 GENERAL REQUIREMENTS & FEE											
Z11 General Requirements	1.00%			96,072		960.72	191.32	70.40	13.65	2.72	
Z12 Fee	1.00%					457.48	91.11	70.40	6.50	1.29	
<b>TOTAL EXCLUDING CONTINGENCIES</b>						503,556	5,535.56	100.0	1,102.39	852.67	
						(1)	(2)	(3)			

Project : CMHC HOUSING STUDY : COMPARISON OF TRADE COSTS Location : FRANCE		CANADA vs. FRANCE (IN CAD)						Costing Date: August 2000 Report Date: February 25, 2003 Per GFA of: 100 m <sup>2</sup>					
Trade Description		Canada Wood Frame			France Traditional: \$/100m <sup>2</sup>			Paris Wood Frame			Lyon Wood Frame Total \$ CAD/CAD	0.950 CAD/CAD	Potential Export Opportunity
		Total \$ CAD/CAD	CAD/CAD	Total \$ CAD/CAD	Total \$ CAD/CAD	Wood Frame CAD/CAD	Total \$ CAD/CAD	Wood Frame CAD/CAD	Total \$ CAD/CAD				
1. Excavate, Backfill, Gravel	2,138	1.00			2,880	1.35	2,736	1.28					
2. Concrete Steel & Formwork	9,505	1.00			10,812	1.14	10,271	1.08					
3. Dampproofing	902	1.00			1,437	1.59	1,365	1.51					
4a. Rough Carpentry (Materials Only)													
- Lumber	3,335	1.00			2,900	0.87	2,755	0.83					
- Plywood	2,526	1.00			3,930	1.56	3,734	1.48					
- Trusses	2,190	1.00			3,338	1.52	3,171	1.45					
- Stairs	768	1.00			143	0.19	136	0.18					
- Deck	1,717	1.00			1,717	1.00	1,631	0.95					
<b>Subtotal Rough Carpentry (Materials)</b>	<b>10,535</b>	<b>1.00</b>			<b>12,028</b>	<b>1.14</b>	<b>11,426</b>	<b>1.08</b>					
4b. Rough Carpentry (Framing Labour)	7,650	1.00			6,054	0.79	5,751	0.75					
4c. Masonry - Exterior / Interior	0	N/A			0	N/A	0	N/A					
5. Roofing	2,660	1.00			4,461	1.68	4,238	1.59					
6a. Windows (Materials Only)	3,085	1.00			2,453	0.80	2,331	0.76					
6b. Doors	1,260	1.00			1,641	1.30	1,559	1.24					
7. Exterior Cladding/Roof Elements	6,685	1.00			9,615	1.44	9,134	1.37					
8. Plumbing	3,000	1.00			3,162	1.05	3,004	1.00					
9. Electrical	3,350	1.00			5,098	1.52	4,843	1.45					
10. Heating	3,500	1.00			7,169	2.05	6,811	1.95					
11. Specialty Items	3,615	1.00			2,501	0.69	2,376	0.66					
12. Drywall, Insulation, Caulking	6,270	1.00			6,401	1.02	6,081	0.97					
13. Cabinets & Vanities													
- Material	3,450	1.00			2,677	0.78	2,543	0.74					
- Labour	700	1.00			637	0.91	605	0.86					
<b>Subtotal Cabinet &amp; Vanities</b>	<b>4,150</b>	<b>1.00</b>			<b>3,314</b>	<b>0.80</b>	<b>3,148</b>	<b>0.76</b>					
14. Painting, Stain, Lacquer	2,040	1.00			4,166	2.04	3,958	1.94					
15. Interior Finishing													
- Doors	820	1.00			1,421	1.73	1,350	1.65					
- Casing, Trims, Handrails	1,724	1.00			1,641	0.95	1,559	0.90					
- Door Hardware	346	1.00			347	1.00	330	0.95					
- Bathroom Accessories	802	1.00			537	0.67	510	0.64					
<b>Subtotal Interior Finishing</b>	<b>3,692</b>	<b>1.00</b>			<b>3,946</b>	<b>1.07</b>	<b>3,749</b>	<b>1.02</b>					
16. Floor Coverings	4,190	1.00			3,967	0.95	3,769	0.90					
17. Miscellaneous & Fees	7,040	1.00			19,132	2.72	18,176	2.58					
<b>Total Wood Frame House Cost:</b>	<b>85,267</b>	<b>1.00</b>	<b>74,238</b>	<b>0.87</b>	<b>110,239</b>	<b>1.29</b>	<b>104,727</b>	<b>1.23</b>					
<b>Cost per m<sup>2</sup>:</b>	<b>853</b>	<b>1.00</b>	<b>742</b>	<b>0.87</b>	<b>1,102</b>	<b>1.29</b>	<b>1,047</b>	<b>1.23</b>					

Project : CMHC HOUSING STUDY		CANADA vs. FRANCE (IN CAD)						Costing Date: August 2000	
Location : FRANCE		Currency Rate: 0.19991470 CAD/FRF						Report Date: February 25, 2003	
		Element			Canada			Paris	
		Total \$	CAD/CAD	Wood Frame	Total \$	Traditional: \$/100m2	CAD/CAD	Wood Frame	Lyon
									0.950
<b>A SHELL</b>		<b>41,618</b>	<b>1.00</b>		<b>49,367</b>	<b>1.19</b>	<b>46,899</b>	<b>1.13</b>	
<b>A1 SUBSTRUCTURE</b>		<b>3,379</b>	<b>1.00</b>		<b>4,458</b>	<b>1.32</b>	<b>4,235</b>	<b>1.25</b>	
A11 Foundations		1,681	1.00		1,991	1.18	1,892	1.13	
A12 Basement Excavations		1,698	1.00		2,466	1.45	2,343	1.38	
<b>A2 STRUCTURE</b>		<b>7,678</b>	<b>1.00</b>		<b>9,089</b>	<b>1.18</b>	<b>8,635</b>	<b>1.12</b>	
A21 Lowest Floor Construction		1,140	1.00		1,306	1.15	1,241	1.09	
A22 Upper Floor Construction		3,208	1.00		2,446	0.76	2,323	0.72	
A23 Roof Construction		3,330	1.00		5,337	1.60	5,070	1.52	
<b>A3 EXTERIOR CLADDING</b>		<b>24,561</b>	<b>1.00</b>		<b>31,041</b>	<b>1.26</b>	<b>29,489</b>	<b>1.20</b>	
A31 Walls Below Grade		6,596	1.00		8,449	1.28	8,027	1.22	
A32 Walls Above Grade		7,010	1.00		9,344	1.33	8,877	1.27	
A33 Windows and Entrances		4,610	1.00		4,429	0.96	4,208	0.91	
A34 Roof Coverings		4,680	1.00		6,325	1.35	6,009	1.28	
A35 Projections		1,665	1.00		2,493	1.50	2,369	1.42	
<b>A4 HOUSE FRAMING (LABOUR)</b>		<b>6,000</b>	<b>1.00</b>		<b>4,780</b>	<b>0.80</b>	<b>4,541</b>	<b>0.76</b>	
A41 House Framing Labour		6,000	1.00		4,780	0.80	4,541	0.76	
<b>B INTERIORS</b>		<b>21,715</b>	<b>1.00</b>		<b>22,187</b>	<b>1.02</b>	<b>21,078</b>	<b>0.97</b>	
<b>B1 PARTITIONS &amp; DOORS</b>		<b>4,486</b>	<b>1.00</b>		<b>4,923</b>	<b>1.10</b>	<b>4,677</b>	<b>1.04</b>	
B11 Partitions		3,445	1.00		3,298	0.96	3,133	0.91	
B12 Doors		1,041	1.00		1,625	1.56	1,544	1.48	
<b>B2 FINISHES</b>		<b>6,818</b>	<b>1.00</b>		<b>9,021</b>	<b>1.32</b>	<b>8,570</b>	<b>1.26</b>	
B21 Floor Finishes		4,356	1.00		4,082	0.94	3,878	0.89	
B22 Ceiling Finishes		1,000	1.00		1,354	1.35	1,286	1.29	
B23 Wall Finishes		1,463	1.00		3,585	2.45	3,405	2.33	
<b>B3 FITTINGS &amp; EQUIPMENT</b>		<b>10,411</b>	<b>1.00</b>		<b>8,244</b>	<b>0.79</b>	<b>7,832</b>	<b>0.75</b>	
B31 Fittings & Fixtures		6,836	1.00		5,774	0.84	5,486	0.80	
B32 Equipment		3,575	1.00		2,469	0.69	2,346	0.66	
<b>C SERVICES</b>		<b>9,850</b>	<b>1.00</b>		<b>15,430</b>	<b>1.57</b>	<b>14,658</b>	<b>1.49</b>	
<b>C1 MECHANICAL</b>		<b>6,500</b>	<b>1.00</b>		<b>10,332</b>	<b>1.59</b>	<b>9,815</b>	<b>1.51</b>	
C11 Mechanical		6,500	1.00		10,332	1.59	9,815	1.51	
<b>C2 ELECTRICAL</b>		<b>3,350</b>	<b>1.00</b>		<b>5,098</b>	<b>1.52</b>	<b>4,843</b>	<b>1.45</b>	
C21 Electrical		3,350	1.00		5,098	1.52	4,843	1.45	
<b>EXCLUDING SITE</b>		<b>73,183</b>	<b>1.00</b>		<b>86,984</b>	<b>1.19</b>	<b>82,635</b>	<b>1.13</b>	
<b>D1 SITE WORK</b>		<b>5,044</b>	<b>1.00</b>		<b>4,122</b>	<b>0.82</b>	<b>3,916</b>	<b>0.78</b>	
D11 Site Development		5,044	1.00		4,122	0.82	3,916	0.78	
<b>INCLUDING SITE</b>		<b>78,227</b>	<b>1.00</b>		<b>91,107</b>	<b>1.16</b>	<b>86,551</b>	<b>1.11</b>	
<b>Z1 GENERAL REQUESTS &amp; FEE</b>		<b>7,040</b>	<b>1.00</b>		<b>19,132</b>	<b>2.72</b>	<b>18,176</b>	<b>2.58</b>	
Z11 General Requirements		7,040	1.00		9,111	1.29	8,655	1.23	
Z12 Fee		0	N/A		10,022	N/A	9,521	N/A	
<b>TOTAL</b>		<b>85,267</b>	<b>1.00</b>		<b>74,238</b>	<b>0.87</b>	<b>110,239</b>	<b>1.29</b>	<b>104,727</b>
<b>Cost per m2:</b>		<b>853</b>	<b>1.00</b>		<b>742</b>	<b>0.87</b>	<b>1,102</b>	<b>1.29</b>	<b>1,047</b>



CANADA vs. FRANCE			Costing Date: August 2000	Report Date: February 25, 2003
Element	Canada Wood Frame	France Wood Frame	Per GFA of: 100 m <sup>2</sup>	Per GFA of: 100 m <sup>2</sup>
<b>A SHELL</b>		France Traditional House		France Traditional House
<b>A1 SUBSTRUCTURE</b>	Concrete, plastic weeping tile Full basement	Concrete, plastic weeping tile Full basement		
A11 Foundations				
A12 Basement Excavations				
A13 Roof Construction				
<b>A2 STRUCTURE</b>	100mm concrete slab on grade 38mm x 235mm K.D. floor joist Engineered wood trusses	100mm concrete slab on grade 38mm x 235mm floor joist Engineered wood trusses		
A21 Lowest Floor Construction				
A22 Upper Floor Construction				
A23 Roof Construction				
<b>A3 EXTERIOR CLADDING</b>	200mm concrete w/ asphaltic emulsion 38mm x 140mm K.D. brick/vinyl siding Vinyl clad wood framed window 25-year asphalt shingles	200mm concrete w/ asphaltic emulsion Vinyl siding (not common), stucco Vinyl windows Shingles - not common PVC soffit, pipe, fascia		
A31 Walls Below Grade				
A32 Walls Above Grade				
A33 Windows and Entrances				
A34 Roof Coverings				
A35 Projections				
<b>A4 HOUSE FRAMING (LABOUR)</b>	Pre-finished aluminum soffit, pipe, fascia	Lump sum framing labour		
A41 House Framing Labour				
<b>B INTERIORS</b>				
<b>B1 PARTITIONS &amp; DOORS</b>	38mm x 89mm K.D. wood framing Hollow core wood door (painted)	38mm x 89mm studs wood framing Solid wood doors		
B11 Partitions				
B12 Doors				
<b>B2 FINISHES</b>	35 oz. carpet, sheet vinyl, wood Textured gypsum board Painted gypsum board	35 oz. carpet, sheet vinyl, wood Textured gypsum board Painted gypsum board		
B21 Floor Finishes				
B22 Ceiling Finishes				
B23 Wall finishes				
<b>B3 FITTINGS &amp; EQUIPMENT</b>	Melamine w/ arborite counter top Wood burning fireplace	Melamine w/ arborite counter top Wood burning fireplace		
B31 Fittings & Fixtures				
B32 Equipment				
<b>C SERVICES</b>	No air-conditioning	No air-conditioning		
<b>C1 MECHANICAL</b>	Gas fired forced air heating One 4-piece bathroom	Normally radiators in France One 4-piece bathroom (France standard)		
C11 Mechanical				
<b>C2 ELECTRICAL</b>	100 amps main service 110 volts, Canadian standard	France standard		
C21 Electrical				
<b>EXCLUDING SITE</b>				
<b>D1 SITE WORK</b>	Site services incl w/ land price Not included, except deck	Excludes utility drainage, top soil		
D11 Site Development				
<b>Z1 GENERAL REQUESTS &amp; FEE</b>				
Z11 General Requirements				
Z12 Fee				
<b>TOTAL</b>	<b>GFA: 100 m<sup>2</sup></b>	<b>GFA: 100 m<sup>2</sup></b>	<b>GFA: 123 m<sup>2</sup></b>	<b>GFA: 123 m<sup>2</sup></b>

## 5. GERMANY

**Hanscom**  
**CMHC HOUSING STUDY**  
**100M2 HOUSE TIMBER FRAMED**  
**GERMANY**

**TRADE SUMMARY**

Costing Date:  
 Currency Rate: (CAD/DEM)  
 Report Date:

August 2000

0.6679070

January 21, 2003 R

Description	Amount as Priced DEM	Converted to Canadian \$	CAD Amount IN CANADA	Ratios to Canada DEM/CAD	CAD/CAD	Remarks
1. Excavate, Backfill, Gravel	12,001 DEM	8,016 CAD	2,138 CAD	5.61	3.75	
2. Concrete Steel & Formwork	19,655 DEM	13,128 CAD	9,505 CAD	2.07	1.38	
3. Dampproofing	5,166 DEM	3,450 CAD	902 CAD	5.73	3.83	
4a. Rough Carpentry (Materials Only)						
- Lumber	8,448 DEM	5,642 CAD	3,335 CAD	2.53	1.69	
- Plywood	4,518 DEM	3,017 CAD	2,526 CAD	1.79	1.19	
- Trusses	8,645 DEM	5,774 CAD	2,190 CAD	3.95	2.64	
- Stairs	1,398 DEM	934 CAD	768 CAD	1.82	1.22	
- Deck	3,490 DEM	2,331 CAD	1,717 CAD	2.03	1.36	
<b>Subtotal Rough Carpentry (Materials)</b>	<b>26,498 DEM</b>	<b>17,698 CAD</b>	<b>10,535 CAD</b>	<b>2.52</b>	<b>1.68</b>	
4b. Rough Carpentry (Framing Labour)						
38,820 DEM	25,928 CAD	7,650 CAD	5.07	3.39		
7,000 DEM	4,675 CAD	2,660 CAD	2.63	1.76		
5. Roofing	7,053 DEM	4,711 CAD	3,085 CAD	2.29	1.53	
6a. Windows (Materials Only)						
5,790 DEM	3,867 CAD	1,260 CAD	4.60	3.07		
6b. Doors	24,510 DEM	16,370 CAD	6,685 CAD	3.67	2.45	
7. Exterior Cladding/Roof Elements						
5,000 DEM	3,340 CAD	3,000 CAD	1.67	1.11		
8. Plumbing	13,450 DEM	8,983 CAD	3,350 CAD	4.01	2.68	
9. Electrical	15,000 DEM	10,019 CAD	3,500 CAD	4.29	2.86	
10. Heating	4,142 DEM	2,767 CAD	3,615 CAD	1.15	0.77	
11. Specialty Items						
12. Drywall, Insulation, Caulking	21,444 DEM	14,323 CAD	6,270 CAD	3.42	2.28	
13. Cabinets & Vanities						
- Material	4,320 DEM	2,885 CAD	3,450 CAD	1.25	0.84	
- Labour	1,000 DEM	668 CAD	700 CAD	1.43	0.95	
<b>Subtotal Cabinet &amp; Vanities</b>	<b>5,320 DEM</b>	<b>3,553 CAD</b>	<b>4,150 CAD</b>	<b>1.28</b>	<b>0.86</b>	
14. Painting, Stain, Lacquer						
15. Interior Finishing						
- Doors	5,148 DEM	3,438 CAD	820 CAD	6.28	4.19	
- Casings, Trims, Handrails	3,768 DEM	2,517 CAD	1,724 CAD	2.19	1.46	
- Door Hardware	1,005 DEM	671 CAD	346 CAD	2.90	1.94	
- Bathroom Accessories	1,324 DEM	884 CAD	802 CAD	1.65	1.10	
<b>Subtotal Interior Finishing</b>	<b>11,245 DEM</b>	<b>7,510 CAD</b>	<b>3,692 CAD</b>	<b>3.05</b>	<b>2.03</b>	
16. Floor Coverings	4,500 DEM	3,006 CAD	4,190 CAD	1.07	0.72	
17. Miscellaneous & Fees	30,890 DEM	20,632 CAD	7,040 CAD	4.39	2.93	
<b>Total Wood Frame House Cost:</b>	<b>261,409 DEM</b>	<b>174,597 CAD</b>	<b>85,267 CAD</b>	<b>3.07</b>	<b>2.05</b>	
<b>Cost per m2:</b>	<b>2,614.09 DEM</b>	<b>1,745.97 CAD</b>	<b>852.67 CAD</b>	<b>3.07</b>	<b>2.05</b>	
	(1)	(2)	(3)			

ELEMENTAL COST SUMMARY							Costing Date: August 2000	Report Date: January 21, 2003 R
	Currency Rate: 0.6679070 CAD/DEM			GFA: 100 m <sup>2</sup>			Canadian \$ IN CANADA	Rate per m <sup>2</sup> CAD/CAD
Element	Ratio to GFA	Elemental Cost	Elemental DEM	Rate per m <sup>2</sup> DEM	%	Converted to Canadian \$	Rate per m <sup>2</sup> CAD/CAD	Ratios to Canada
<b>A SHELL</b>			<b>146,004</b>	<b>55.9</b>		<b>975.17</b>	<b>416.18</b>	<b>3.51</b>
<b>A1 SUBSTRUCTURE</b>			<b>13,033</b>	<b>5.0</b>		<b>87.05</b>	<b>33.79</b>	<b>3.86</b>
A11 Foundations	1.000	100 m <sup>2</sup>	27.82	2.782		18.58	16.81	1.65
A12 Basement Excavations	3.000	300 m <sup>3</sup>	34.17	10.251		68.47	16.98	6.04
<b>A2 STRUCTURE</b>			<b>20,178</b>	<b>7.7</b>		<b>134.77</b>	<b>76.78</b>	<b>2.63</b>
A21 Lowest Floor Construction	1.000	100 m <sup>2</sup>	34.30	3.430		22.91	11.40	3.01
A22 Upper Floor Construction	1.000	100 m <sup>2</sup>	59.02	5.902		39.42	32.08	1.84
A23 Roof Construction	1.000	100 m <sup>2</sup>	108.46	108.46		72.44	33.30	3.26
<b>A3 EXTERIOR CLADDING</b>			<b>77,223</b>	<b>29.5</b>		<b>515.78</b>	<b>245.61</b>	<b>3.14</b>
A31 Walls Below Grade	0.980	98 m <sup>2</sup>	188.56	184.78		123.42	65.96	2.80
A32 Walls Above Grade	0.980	98 m <sup>2</sup>	278.67	273.10		182.41	70.10	1.87
A33 Windows and Entrances	0.130	13 no.	1,071.15	13.925		93.01	39.00	2.60
A34 Roof Coverings	1.400	140 m <sup>2</sup>	92.86	13.000		86.83	46.10	3.02
A35 Projections	0.250	25 m <sup>2</sup>	180.40	4.510		30.12	16.65	2.78
<b>A4 HOUSE FRAMING (LABOUR)</b>			<b>35,570</b>	<b>13.6</b>		<b>237.57</b>	<b>60.00</b>	<b>5.93</b>
A41 House Framing Labour	1.000	100 m <sup>2</sup>	355.70	35.570		237.57	60.00	5.93
<b>B INTERIORS</b>			<b>42,025</b>	<b>16.1</b>		<b>280.69</b>	<b>217.15</b>	<b>1.94</b>
<b>B1 PARTITIONS &amp; DOORS</b>			<b>17,813</b>	<b>6.8</b>		<b>118.97</b>	<b>44.86</b>	<b>3.97</b>
B11 Partitions	2.050	205 m <sup>2</sup>	58.10	11.910		79.55	34.45	3.46
B12 Doors	0.110	11 no.	536.64	5.903		39.43	10.41	5.67
<b>B2 FINISHES</b>			<b>8,906</b>	<b>3.4</b>		<b>59.48</b>	<b>68.18</b>	<b>1.31</b>
B21 Floor Finishes	1.000	100 m <sup>2</sup>	47.06	4.706		31.43	43.56	1.08
B22 Ceiling Finishes	1.000	100 m <sup>2</sup>	19.50	1.950		13.02	10.00	1.95
B23 Wall Finishes	4.160	416 m <sup>2</sup>	5.41	2.250		15.03	14.63	1.54
<b>B3 FITTINGS &amp; EQUIPMENT</b>			<b>15,306</b>	<b>5.9</b>		<b>102.23</b>	<b>104.11</b>	<b>1.47</b>
B31 Fittings & Fixtures	1.000	100 m <sup>2</sup>	112.94	11.294		75.43	68.36	1.65
B32 Equipment	1.000	100 m <sup>2</sup>	40.12	4.012		40.12	26.80	35.75
<b>C SERVICES</b>			<b>33,450</b>	<b>12.8</b>		<b>223.41</b>	<b>98.50</b>	<b>3.40</b>
<b>C1 MECHANICAL</b>			<b>20,000</b>	<b>7.7</b>		<b>133.58</b>	<b>65.00</b>	<b>3.08</b>
C11 Mechanical	1.000	100 m <sup>2</sup>	200.00	20.000		133.58	65.00	3.08
<b>C2 ELECTRICAL</b>			<b>13,450</b>	<b>5.1</b>		<b>89.83</b>	<b>33.50</b>	<b>4.01</b>
C21 Electrical	1.000	100 m <sup>2</sup>	134.50	13.450		89.83	33.50	4.01
<b>NET BUILDING COST - EXCLUDING SITE</b>			<b>221,479</b>	<b>84.7</b>		<b>1,479.27</b>	<b>731.83</b>	<b>3.03</b>
<b>D1 SITE WORK</b>			<b>9,041</b>	<b>3.5</b>		<b>60.38</b>	<b>50.44</b>	<b>1.79</b>
D11 Site Development	0.010	1 sum	9,041	9,041		60.38	50.44	1.79
<b>NET BUILDING COST - INCLUDING SITE</b>			<b>230,519</b>	<b>88.2</b>		<b>1,539.65</b>	<b>782.27</b>	<b>2.95</b>
<b>Z1 GENERAL REQUIREMENTS &amp; FEE</b>			<b>30,890</b>	<b>308.90</b>		<b>206.31</b>	<b>70.40</b>	<b>4.39</b>
Z11 General Requirements	5.0%		11,526	115.26		76.98	70.40	1.64
Z12 Fee	8.0%		19,364	193.64		129.33	-	N/A
<b>TOTAL EXCLUDING CONTINGENCIES</b>			<b>261,409</b>	<b>2,614.09</b>	<b>100.0</b>	<b>1,745.97</b>	<b>852.67</b>	<b>3.07</b>
(1)	(2)	(3)						

Project : CMHC HOUSING STUDY		CANADA vs. GERMANY (IN CAD)						Costing Date: August 2000	
: COMPARISON OF TRADE COSTS		Currency Rate: 0.66679070 CAD/DEM						Report Date: February 25, 2003	
Location : GERMANY		Canada Wood Frame			Germany Traditional: \$/100m2			Berlin Wood Frame CAD/CAD	
Trade Description	Total \$ CAD/CAD	Total \$ CAD/CAD	Total \$ CAD/CAD	Total \$ CAD/CAD	Total \$ CAD/CAD	Total \$ CAD/CAD	Total \$ CAD/CAD	Hamburg Wood Frame CAD/CAD	Potential Export Opportunity
1. Excavate, Backfill, Gravel	2,138	1.00			8,016	3.75	8,416	3.94	
2. Concrete Steel & Formwork	9,505	1.00			13,128	1.38	13,784	1.45	
3. Dampproofing	902	1.00			3,450	3.83	3,623	4.02	
4a. Rough Carpentry (Materials Only)									
- Lumber	3,335	1.00			5,642	1.69	5,925	1.78	
- Plywood	2,526	1.00			3,017	1.19	3,168	1.25	
- Trusses	2,190	1.00			5,774	2.64	6,063	2.77	
- Stairs	768	1.00			934	1.22	980	1.28	
- Deck	1,717	1.00			2,331	1.36	2,447	1.43	
<b>Subtotal Rough Carpentry (Materials)</b>	<b>10,535</b>	<b>1.00</b>			<b>17,698</b>	<b>1.68</b>	<b>18,583</b>	<b>1.76</b>	
4b. Rough Carpentry (Framing Labour)	7,650	1.00			25,928	3.39	27,225	3.56	
4c. Masonry - Exterior / Interior	0	N/A			0	N/A	0	N/A	
5. Roofing	2,660	1.00			4,675	1.76	4,909	1.85	
6a. Windows (Materials Only)	3,085	1.00			4,711	1.53	4,946	1.60	
6b. Doors	1,260	1.00			3,867	3.07	4,061	3.22	
7. Exterior Cladding/Roof Elements	6,685	1.00			16,370	2.45	17,189	2.57	
8. Plumbing	3,000	1.00			3,340	1.11	3,507	1.17	
9. Electrical	3,350	1.00			8,983	2.68	9,433	2.82	
10. Heating	3,500	1.00			10,019	2.86	10,520	3.01	
11. Specialty Items	3,615	1.00			2,767	0.77	2,905	0.80	
12. Drywall, Insulation, Caulking	6,270	1.00			14,323	2.28	15,039	2.40	
13. Cabinets & Vanities									
- Material	3,450	1.00			2,885	0.84	3,030	0.88	
- Labour	700	1.00			668	0.95	701	1.00	
<b>Subtotal Cabinet &amp; Vanities</b>	<b>4,150</b>	<b>1.00</b>			<b>3,553</b>	<b>0.86</b>	<b>3,731</b>	<b>0.90</b>	
14. Painting, Stain, Lacquer	2,040	1.00			2,622	1.29	2,753	1.35	
15. Interior Finishing									
- Doors	820	1.00			3,438	4.19	3,610	4.40	
- Casing, Trims, Handrails	1,724	1.00			2,517	1.46	2,643	1.53	
- Door Hardware	346	1.00			671	1.94	705	2.04	
- Bathroom Accessories	802	1.00			884	1.10	928	1.16	
<b>Subtotal Interior Finishing</b>	<b>3,692</b>	<b>1.00</b>			<b>7,510</b>	<b>2.03</b>	<b>7,886</b>	<b>2.14</b>	
16. Floor Coverings	4,190	1.00			3,006	0.72	3,156	0.75	
17. Miscellaneous & Fees	7,040	1.00			20,632	2.93	21,663	3.08	
<b>Total Wood Frame House Cost:</b>	<b>85,267</b>	<b>1.00</b>	<b>140,995</b>	<b>1.65</b>	<b>174,597</b>	<b>2.05</b>	<b>183,327</b>	<b>2.15</b>	
<b>Cost per m2:</b>	<b>853</b>	<b>1.00</b>	<b>1,410</b>	<b>1.65</b>	<b>1,746</b>	<b>2.05</b>	<b>1,833</b>	<b>2.15</b>	

Project : CMHC HOUSING STUDY		CANADA vs. GERMANY (IN CAD)						Costing Date: August 2000	
Location : GERMANY		Currency Rate: 0.66679070 CADDEM						Report Date: February 25, 2003	
		Canada			Germany			Per GFA of:	
Element		Wood Frame	Total \$	CAD/CAD	Wood Frame	Total \$	CAD/CAD	Hamburg	1.050
		Total \$	CAD/CAD	Total \$	Wood Frame	Total \$	CAD/CAD	Wood Frame	Potential Export Opportunity
<b>A SHELL</b>		<b>41,618</b>	<b>1.00</b>		<b>97,517</b>	<b>2.34</b>	<b>102,393</b>	<b>2.46</b>	
<b>A1 SUBSTRUCTURE</b>		<b>3,379</b>	<b>1.00</b>		<b>8,705</b>	<b>2.58</b>	<b>9,140</b>	<b>2.70</b>	
A11 Foundations	1,681	1.00			1,858	1.11	1,951	1.16	
A12 Basement Excavations	1,698	1.00			6,847	4.03	7,189	4.23	
<b>A2 STRUCTURE</b>		<b>7,678</b>	<b>1.00</b>		<b>13,477</b>	<b>1.76</b>	<b>14,151</b>	<b>1.84</b>	
A21 Lowest Floor Construction	1,140	1.00			2,291	2.01	2,405	2.11	
A22 Upper Floor Construction	3,208	1.00			3,942	1.23	4,139	1.29	
A23 Roof Construction	3,330	1.00			7,244	2.18	7,607	2.28	
<b>A3 EXTERIOR CLADDING</b>		<b>24,561</b>	<b>1.00</b>		<b>51,578</b>	<b>2.10</b>	<b>54,157</b>	<b>2.21</b>	
A31 Walls Below Grade	6,596	1.00			12,342	1.87	12,959	1.96	
A32 Walls Above Grade	7,010	1.00			18,241	2.60	19,153	2.73	
A33 Windows and Entrances	4,610	1.00			9,301	2.02	9,766	2.12	
A34 Roof Coverings	4,680	1.00			8,683	1.86	9,117	1.95	
A35 Projections	1,665	1.00			3,012	1.81	3,163	1.90	
<b>A4 HOUSE FRAMING (LABOUR)</b>		<b>6,000</b>	<b>1.00</b>		<b>23,757</b>	<b>3.96</b>	<b>24,945</b>	<b>4.16</b>	
A41 House Framing Labour	6,000	1.00			23,757	3.96	24,945	4.16	
<b>B INTERIORS</b>		<b>21,715</b>	<b>1.00</b>		<b>28,069</b>	<b>1.29</b>	<b>29,472</b>	<b>1.36</b>	
<b>B1 PARTITIONS &amp; DOORS</b>		<b>4,486</b>	<b>1.00</b>		<b>11,897</b>	<b>2.65</b>	<b>12,492</b>	<b>2.78</b>	
B11 Partitions	3,445	1.00			7,955	2.31	8,353	2.42	
B12 Doors	1,041	1.00			3,943	3.79	4,140	3.98	
<b>B2 FINISHES</b>		<b>6,818</b>	<b>1.00</b>		<b>5,948</b>	<b>0.87</b>	<b>6,246</b>	<b>0.92</b>	
B21 Floor Finishes	4,356	1.00			3,143	0.72	3,300	0.76	
B22 Ceiling Finishes	1,000	1.00			1,302	1.30	1,368	1.37	
B23 Wall Finishes	1,463	1.00			1,503	1.03	1,578	1.08	
<b>B3 FITTINGS &amp; EQUIPMENT</b>		<b>10,411</b>	<b>1.00</b>		<b>10,223</b>	<b>0.98</b>	<b>10,734</b>	<b>1.03</b>	
B31 Fittings & Fixtures	6,836	1.00			7,543	1.10	7,920	1.16	
B32 Equipment	3,575	1.00			2,680	0.75	2,814	0.79	
<b>C SERVICES</b>		<b>9,850</b>	<b>1.00</b>		<b>22,341</b>	<b>2.27</b>	<b>23,459</b>	<b>2.38</b>	
<b>C1 MECHANICAL</b>		<b>6,500</b>	<b>1.00</b>		<b>13,358</b>	<b>2.06</b>	<b>14,026</b>	<b>2.16</b>	
C11 Mechanical	6,500	1.00			13,358	2.06	14,026	2.16	
<b>C2 ELECTRICAL</b>		<b>3,350</b>	<b>1.00</b>		<b>8,983</b>	<b>2.68</b>	<b>9,433</b>	<b>2.82</b>	
C21 Electrical	3,350	1.00			8,983	2.68	9,433	2.82	
<b>EXCLUDING SITE</b>		<b>73,183</b>	<b>1.00</b>		<b>147,927</b>	<b>2.02</b>	<b>155,324</b>	<b>2.12</b>	
<b>D1 SITE WORK</b>		<b>5,044</b>	<b>1.00</b>		<b>6,038</b>	<b>1.20</b>	<b>6,340</b>	<b>1.26</b>	
D11 Site Development	5,044	1.00			6,038	1.20	6,340	1.26	
<b>INCLUDING SITE</b>		<b>78,227</b>	<b>1.00</b>		<b>153,965</b>	<b>1.97</b>	<b>161,664</b>	<b>2.07</b>	
<b>Z1 GENERAL REQUESTS &amp; FEE</b>		<b>7,040</b>	<b>1.00</b>		<b>20,631</b>	<b>2.93</b>	<b>21,663</b>	<b>3.08</b>	
Z11 General Requirements	7,040	1.00			7,698	1.09	8,083	1.15	
Z12 Fee	0	N/A			12,933	N/A	13,580	N/A	
<b>TOTAL</b>		<b>85,267</b>	<b>1.00</b>		<b>140,995</b>	<b>1.65</b>	<b>174,597</b>	<b>2.05</b>	
<b>Cost per m2:</b>		<b>853</b>	<b>1.00</b>		<b>1,410</b>	<b>1.65</b>	<b>1,746</b>	<b>2.05</b>	
								<b>1,833</b>	<b>2.15</b>

CANADA vs. GERMANY			Costing Date: August 2000
			Report Date: February 25, 2003
			Per GFA of: 100 m2
Element	Canada Wood Frame	Germany Wood Frame	Germany Traditional House
<b>A SHELL</b>			
<b>A1 SUBSTRUCTURE</b>	Concrete, plastic weeping tile Full basement	Concrete Full basement	Concrete Full basement
A21 Lowest Floor Construction	100mm concrete slab on grade 38mm x 235mm K.D. floor joist Engineered wood trusses	100mm concrete slab on grade Steep pitch rafters, habitable space Engineered wood trusses (pre-fab)	Concrete slab on grade Steep pitch rafters, habitable space
A22 Upper Floor Construction			
A23 Roof Construction			
<b>A3 EXTERIOR CLADDING</b>			
A31 Walls Below Grade	200mm concrete w/ asphaltic emulsion 38mm x 140mm K.D. brick/vinyl siding	200mm concrete w/ asphaltic emulsion 38mm x 140mm studs, brick/vinyl siding Pre-finished casement windows	Hollow clay block wall w/ rendering Pre-finished casement windows, PVC, PVC door
A32 Walls Above Grade	Vinyl clad wood framed window	Concrete tiles	Concrete tiles
A33 Windows and Entrances	25-year asphalt shingles	PVC soffit, pipe & fascia	Galvanised steel gutters, downpipe
A34 Roof Coverings			
A35 Projections			
<b>A4 HOUSE FRAMING (LABOUR)</b>			
A41 House Framing Labour	Lump sum framing labour		
<b>B INTERIORS</b>			
<b>B1 PARTITIONS &amp; DOORS</b>			
B11 Partitions	38mm x 89mm K.D. wood framing Hollow core wood door (painted)	38mm x 89mm studs wood framing Doors w/ laminate wood finish	Light weight masonry construction Hollow core veneered wood
B12 Doors			
<b>B2 FINISHES</b>			
B21 Floor Finishes	35 oz. carpet, sheet vinyl, wood Textured gypsum board	Carpet, sheet vinyl, laminate parquet Textured gypsum board	Ceramic tile to kitchen, bathrooms, foyer
B22 Ceiling Finishes			
B23 Wall finishes	Painted gypsum board	Paint and wall covering	Wall coverings
<b>B3 FITTINGS &amp; EQUIPMENT</b>			
B31 Fittings & Fixtures	Melamine w/ arborite counter top Wood burning fireplace	Kitchen cabinets, vanity Wood burning fireplace	
B32 Equipment			
<b>C SERVICES</b>			
<b>C1 MECHANICAL</b>	No air-conditioning	Radiator heating One 4-piece bathroom	Hot water under floor heating Per Germany standards
C11 Mechanical	Gas fired forced air heating	Per Germany standards	Per Germany standards
<b>C2 ELECTRICAL</b>	100 amps main service 110 volts, Canadian standard	Per Germany standards	Per Germany standards (excl. fixtures)
<b>EXCLUDING SITE</b>			
<b>D1 SITE WORK</b>	Site services incl w/ land price D11 Site Development Not included, except deck		
<b>Z1 GENERAL REQUESTS &amp; FEE</b>			
Z11 General Requirements			
Z12 Fee			
<b>TOTAL</b>	<b>GFA: 100 m2</b>	<b>GFA: 100 m2</b>	<b>GFA: 125 m2</b>

## 6. JAPAN

**Hanscom**  
**CMHC HOUSING STUDY**  
**100M2 HOUSE TIMBER FRAMED**  
**JAPAN**

**TRADE SUMMARY**

Costing Date:  
 Currency Rate: (CAD/JPY)  
 Report Date:

August 2000

0.0137960

February 11, 2003 R

Description	Amount as Priced JPY	Converted to Canadian \$	CAD Amount IN CANADA	Ratios to Canada JPY/CAD	CAD/CAD	Remarks
1. Excavate, Backfill, Gravel	2,390,000 JPY	32,972 CAD	2,138 CAD	1,117.87	15.42	
2. Concrete Steel & Formwork	1,564,860 JPY	21,589 CAD	9,505 CAD	164.64	2.27	
3. Dampproofing	569,900 JPY	7,862 CAD	902 CAD	631.82	8.72	
4a. Rough Carpentry (Materials Only)						
- Lumber	525,750 JPY	7,253 CAD	3,335 CAD	157.65	2.17	
- Plywood	456,650 JPY	6,300 CAD	2,526 CAD	180.81	2.49	
- Trusses	613,000 JPY	8,457 CAD	2,190 CAD	279.91	3.86	
- Stairs	210,500 JPY	2,904 CAD	768 CAD	274.09	3.78	
- Deck	363,500 JPY	5,015 CAD	1,717 CAD	211.77	2.92	
<b>Subtotal Rough Carpentry (Materials)</b>	<b>2,169,400 JPY</b>	<b>29,929 CAD</b>	<b>10,535 CAD</b>	<b>205.92</b>	<b>2.84</b>	
4b. Rough Carpentry (Framing Labour)						
1.590,000 JPY	21,936 CAD	7,650 CAD	207.84	2.87		
504,000 JPY	6,953 CAD	2,660 CAD	189.47	2.61		
5. Roofing	793,000 JPY	10,940 CAD	3,085 CAD	257.05	3.55	
6a. Windows (Materials Only)						
338,000 JPY	4,663 CAD	1,260 CAD	268.25	3.70		
6b. Doors	990,250 JPY	13,661 CAD	6,685 CAD	148.13	2.04	
7. Exterior Cladding/Roof Elements						
843,200 JPY	11,633 CAD	3,000 CAD	281.07	3.88		
8. Plumbing	1,440,400 JPY	19,872 CAD	3,350 CAD	429.97	5.93	
9. Electrical	907,500 JPY	12,520 CAD	3,500 CAD	259.29	3.58	
10. Heating	253,600 JPY	3,499 CAD	3,615 CAD	70.15	0.97	
11. Specialty Items						
12. Drywall, Insulation, Caulking	1,773,000 JPY	24,460 CAD	6,270 CAD	282.78	3.90	
13. Cabinets & Vanities						
- Material	838,000 JPY	11,561 CAD	3,450 CAD	242.90	3.35	
- Labour	60,000 JPY	828 CAD	700 CAD	85.71	1.18	
<b>Subtotal Cabinet &amp; Vanities</b>	<b>898,000 JPY</b>	<b>12,389 CAD</b>	<b>4,150 CAD</b>	<b>216.39</b>	<b>2.99</b>	
14. Painting, Stain, Lacquer						
1,152,000 JPY	15,893 CAD	2,040 CAD	564.71	7.79		
15. Interior Finishing						
- Doors	560,000 JPY	7,726 CAD	820 CAD	682.93	9.42	
- Casings, Trims, Handrails	117,900 JPY	1,627 CAD	1,724 CAD	68.40	0.94	
- Door Hardware	62,400 JPY	861 CAD	346 CAD	180.35	2.49	
- Bathroom Accessories	81,100 JPY	1,119 CAD	802 CAD	101.12	1.40	
<b>Subtotal Interior Finishing</b>	<b>821,400 JPY</b>	<b>11,332 CAD</b>	<b>3,692 CAD</b>	<b>222.50</b>	<b>3.07</b>	
16. Floor Coverings	559,000 JPY	7,712 CAD	4,190 CAD	133.41	1.84	
17. Miscellaneous & Fees	2,198,264 JPY	30,327 CAD	7,040 CAD	312.25	4.31	
<b>Total Wood Frame House Cost:</b>	<b>21,755,774 JPY</b>	<b>300,143 CAD</b>	<b>85,267 CAD</b>	<b>255.15</b>	<b>3.52</b>	
<b>Cost per m2:</b>	<b>217,557.74 JPY</b>	<b>3,001.43 CAD</b>	<b>852.67 CAD</b>	<b>255.15</b>	<b>3.52</b>	
	(1)	(2)	(3)			

Project : CMHC HOUSING STUDY		ELEMENTAL COST SUMMARY						Costing Date: August 2000		Report Date: February 11, 2003 R	
Location : JAPAN		Currency Rate: 0.0137960		CAD/JPY				GFA: 100 m <sup>2</sup>			
Element	Ratio to GFA	Elemental Cost	Elemental Unit rate	JPY	Rate per m <sup>2</sup>	JPY	%	Converted to Canadian \$	Rate per m <sup>2</sup>	Ratios to Canada	CAD/CAD
<b>A SHELL</b>								<b>1,523.77</b>	<b>416.18</b>	<b>265.39</b>	<b>3.66</b>
<b>A1 SUBSTRUCTURE</b>								<b>339.91</b>	<b>729.17</b>	<b>10.06</b>	
A11 Foundations	1.000	100 m <sup>2</sup>	2,618.50	2,463.850	<b>24,638.50</b>	11.3		36.12	16.81	155.77	2.15
A12 Basement Excavations	3.000	300 m <sup>3</sup>	7,340.00	2,202.000	2,618.50	22.020.00		303.79	16.98	1,296.82	17.89
<b>A2 STRUCTURE</b>					<b>1,712.000</b>	<b>7.9</b>		<b>236.19</b>	<b>76.78</b>	<b>222.97</b>	<b>3.08</b>
A21 Lowest Floor Construction	1.000	100 m <sup>2</sup>	2,790.00	279.000	2,790.00	7.9		38.49	11.40	244.74	3.38
A22 Upper Floor Construction	1.000	100 m <sup>2</sup>	6,687.50	668.750	6,687.50	6.687.50		92.26	32.08	208.46	2.88
A23 Roof Construction	1.000	100 m <sup>2</sup>	7,642.50	764.250	7,642.50	7.642.50		105.44	33.30	229.50	3.17
<b>A3 EXTERIOR CLADDING</b>					<b>5,579.160</b>	<b>25.6</b>		<b>769.70</b>	<b>245.61</b>	<b>227.16</b>	<b>3.13</b>
A31 Walls Below Grade	0.980	98 m <sup>2</sup>	15,325.61	1,501,910	15,019.10	15,019.10		207.20	65.96	227.71	3.14
A32 Walls Above Grade	0.980	98 m <sup>2</sup>	14,020.41	1,374,000	13,740.00	13,740.00		189.56	70.10	196.01	2.70
A33 Windows and Entrances	0.130	13 no.	93,769.23	1,219,000	1,219,000	12,190.00		168.17	46.10	264.43	3.65
A34 Roof Coverings	1.400	140 m <sup>2</sup>	8,600.00	1,204,000	1,204,000	12,040.00		166.10	46.80	257.26	3.55
A35 Projections	0.250	25 m <sup>2</sup>	11,210.00	280.250	280.250	2,802.50		38.66	16.65	168.32	2.32
<b>A4 HOUSE FRAMING (LABOUR)</b>					<b>1,290.000</b>	<b>12.900.00</b>	<b>5.9</b>	<b>177.97</b>	<b>60.00</b>	<b>215.00</b>	<b>2.97</b>
A41 House Framing Labour	1.000	100 m <sup>2</sup>	12,900.00	1,290.000	12,900.00	12,900.00		177.97	60.00	215.00	2.97
<b>B INTERIORS</b>					<b>4,425.900</b>	<b>44,259.00</b>	<b>20.3</b>	<b>610.60</b>	<b>217.15</b>	<b>203.82</b>	<b>2.81</b>
<b>B1 PARTITIONS &amp; DOORS</b>					<b>1,280.900</b>	<b>12,809.00</b>	<b>5.9</b>	<b>176.71</b>	<b>44.86</b>	<b>285.53</b>	<b>3.94</b>
B11 Partitions	2.050	205 m <sup>2</sup>	3,407.32	698.500	6,985.00	6,985.00		96.37	34.45	202.76	2.80
B12 Doors	0.110	11 no.	52,945.45	582,400	5,824.00	5,824.00		80.35	10.41	559.46	7.72
<b>B2 FINISHES</b>					<b>1,751.900</b>	<b>17,519.00</b>	<b>8.1</b>	<b>241.69</b>	<b>68.18</b>	<b>256.95</b>	<b>3.54</b>
B21 Floor Finishes	1.000	100 m <sup>2</sup>	5,719.00	571,900	5,719.00	5,719.00		78.90	43.56	131.30	1.81
B22 Ceiling Finishes	1.000	100 m <sup>2</sup>	1,900.00	190,000	1,900.00	1,900.00		26.21	10.00	190.00	2.62
B23 Wall Finishes	4.160	416 m <sup>2</sup>	2,379.81	990,000	9,900.00	9,900.00		136.58	14.63	676.92	9.34
<b>B3 FITTINGS &amp; EQUIPMENT</b>					<b>1,393.100</b>	<b>13,931.00</b>	<b>6.4</b>	<b>192.19</b>	<b>104.11</b>	<b>133.81</b>	<b>1.85</b>
B31 Fittings & Fixtures	1.000	100 m <sup>2</sup>	11,615.00	1,161,500	11,615.00	11,615.00		160.24	68.36	169.92	2.34
B32 Equipment	1.000	100 m <sup>2</sup>	2,316.00	231,600	2,316.00	2,316.00		31.95	35.75	64.78	0.89
<b>C SERVICES</b>					<b>3,191.100</b>	<b>31,911.00</b>	<b>14.7</b>	<b>440.24</b>	<b>98.50</b>	<b>323.97</b>	<b>4.47</b>
<b>C1 MECHANICAL</b>					<b>1,750.700</b>	<b>17,507.00</b>	<b>8.0</b>	<b>241.53</b>	<b>65.00</b>	<b>269.34</b>	<b>3.72</b>
C11 Mechanical	1.000	100 m <sup>2</sup>	17,507.00	1,750,700	17,507.00	17,507.00		241.53	65.00	269.34	3.72
<b>C2 ELECTRICAL</b>					<b>1,440.400</b>	<b>14,404.00</b>	<b>6.6</b>	<b>198.72</b>	<b>33.50</b>	<b>429.97</b>	<b>5.93</b>
C21 Electrical	1.000	100 m <sup>2</sup>	14,404.00	1,440,400	14,404.00	14,404.00		198.72	33.50	429.97	5.93
<b>NET BUILDING COST - EXCLUDING SITE</b>						<b>18,662.010</b>	<b>85.8</b>	<b>2,574.61</b>	<b>731.83</b>	<b>255.01</b>	<b>3.52</b>
<b>D1 SITE WORK</b>					<b>895.500</b>	<b>4.1</b>		<b>123.54</b>	<b>50.44</b>	<b>177.54</b>	<b>2.45</b>
D11 Site Development	0.010	1 sum	895.500	895,500	8,955.00	8,955.00		123.54	50.44	177.54	2.45
<b>NET BUILDING COST - INCLUDING SITE</b>						<b>19,557.510</b>	<b>89.9</b>	<b>2,698.15</b>	<b>782.27</b>	<b>250.01</b>	<b>3.45</b>
<b>Z1 GENERAL REQUIREMENTS &amp; FEE</b>					<b>2,198.264</b>	<b>21,982.64</b>		<b>303.27</b>	<b>70.40</b>	<b>312.24</b>	<b>4.31</b>
Z11 General Requirements		8.0%			1,564,601	15,646.01		215.85	70.40	222.23	3.07
Z12 Fee		3.0%			633,663	6,336.63		87.42	-	N/A	N/A
<b>TOTAL EXCLUDING CONTINGENCIES</b>						<b>21,755.774</b>	<b>100.0</b>	<b>3,001.43</b>	<b>852.67</b>	<b>255.15</b>	<b>3.52</b>
(1)	(2)	(3)									

Project : CMHC HOUSING STUDY : COMPARISON OF TRADE COSTS Location : JAPAN		CANADA vs. JAPAN (IN CAD)						Costing Date: August 2000 Report Date: February 25, 2003 Per GFA of: 100 m <sup>2</sup>		
Trade Description		Canada Wood Frame		Japan Traditional: \$/100m <sup>2</sup>		Tokyo Wood Frame		Nagoya Wood Frame		0.950 CAD/CAD
		Total \$	CAD/CAD	Total \$	CAD/CAD	Total \$	CAD/CAD	Total \$	CAD/CAD	
1. Excavate, Backfill, Gravel	2,138	1.00				32,972	15.42	31,324	14.65	
2. Concrete Steel & Formwork	9,505	1.00				21,589	2.27	20,509	2.16	
3. Dampproofing	902	1.00				7,862	8.72	7,469	8.28	
4a. Rough Carpentry (Materials Only)										
- Lumber	3,335	1.00				7,253	2.17	6,891	2.07	
- Plywood	2,526	1.00				6,300	2.49	5,985	2.37	
- Trusses	2,190	1.00				8,457	3.86	8,034	3.67	
- Stairs	768	1.00				2,904	3.78	2,759	3.59	
- Deck	1,717	1.00				5,015	2.92	4,764	2.78	
<b>Subtotal Rough Carpentry (Materials)</b>	<b>10,535</b>	<b>1.00</b>				<b>29,929</b>	<b>2.84</b>	<b>28,433</b>	<b>2.70</b>	
4b. Rough Carpentry (Framing Labour)	7,650	1.00				21,936	2.87	20,839	2.72	
4c. Masonry - Exterior / Interior	0	N/A				0	N/A	0	N/A	
5. Roofing	2,660	1.00				6,953	2.61	6,606	2.48	
6a. Windows (Materials Only)	3,085	1.00				10,940	3.55	10,393	3.37	
6b. Doors	1,260	1.00				4,663	3.70	4,430	3.52	
7. Exterior Cladding/Roof Elements	6,685	1.00				13,661	2.04	12,978	1.94	
8. Plumbing	3,000	1.00				11,633	3.88	11,051	3.68	
9. Electrical	3,350	1.00				19,872	5.93	18,878	5.64	
10. Heating	3,500	1.00				12,520	3.58	11,894	3.40	
11. Specialty Items	3,615	1.00				3,499	0.97	3,324	0.92	
12. Drywall, Insulation, Caulking	6,270	1.00				24,460	3.90	23,237	3.71	
13. Cabinets & Vanities										
- Material	3,450	1.00				11,561	3.35	10,983	3.18	
- Labour	700	1.00				828	1.18	786	1.12	
<b>Subtotal Cabinet &amp; Vanities</b>	<b>4,150</b>	<b>1.00</b>				<b>12,389</b>	<b>2.99</b>	<b>11,769</b>	<b>2.84</b>	
14. Painting, Stain, Lacquer	2,040	1.00				15,893	7.79	15,098	7.40	
15. Interior Finishing										
- Doors	820	1.00				7,726	9.42	7,339	8.95	
- Casing, Trims, Handrails	1,724	1.00				1,627	0.94	1,545	0.90	
- Door Hardware	346	1.00				861	2.49	818	2.36	
- Bathroom Accessories	802	1.00				1,119	1.40	1,063	1.33	
<b>Subtotal Interior Finishing</b>	<b>3,692</b>	<b>1.00</b>				<b>11,332</b>	<b>3.07</b>	<b>10,765</b>	<b>2.92</b>	
16. Floor Coverings	4,190	1.00				7,712	1.84	7,326	1.75	
17. Miscellaneous & Fees	7,040	1.00				30,327	4.31	28,811	4.09	
<b>Total Wood Frame House Cost:</b>	<b>85,267</b>	<b>1.00</b>	<b>250,732</b>	<b>2.94</b>	<b>300,143</b>	<b>3.52</b>	<b>285,136</b>	<b>3.34</b>		
<b>Cost per m<sup>2</sup>:</b>	<b>853</b>	<b>1.00</b>	<b>2,507</b>	<b>2.94</b>	<b>3,001</b>	<b>3.52</b>	<b>2,851</b>	<b>3.34</b>		

Project : CMHC HOUSING STUDY		CANADA vs. JAPAN (IN CAD)						Costing Date: August 2000			
Location : JAPAN		Currency Rate: 0.0137960 CAD/JPY						Report Date: February 25, 2003			
		Element			Canada		Japan		Wood Frame		Nagoya
		Total \$	CAD/CAD	1.00	Total \$	CAD/CAD	Total \$	CAD/CAD	Total \$	CAD/CAD	0.950
<b>A SHELL</b>		<b>41,618</b>	<b>1.00</b>				<b>152,377</b>	<b>3.66</b>	<b>144,758</b>	<b>3.48</b>	
<b>A1 SUBSTRUCTURE</b>		<b>3,379</b>	<b>1.00</b>				<b>33,991</b>	<b>10.06</b>	<b>32,292</b>	<b>9.56</b>	
A11 Foundations		1,681	1.00				3,612	2.15	3,432	2.04	
A12 Basement Excavations		1,698	1.00				30,379	17.89	28,860	17.00	
<b>A2 STRUCTURE</b>		<b>7,678</b>	<b>1.00</b>				<b>23,619</b>	<b>3.08</b>	<b>22,438</b>	<b>2.92</b>	
A21 Lowest Floor Construction		1,140	1.00				3,849	3.38	3,657	3.21	
A22 Upper Floor Construction		3,208	1.00				9,226	2.88	8,765	2.73	
A23 Roof Construction		3,330	1.00				10,544	3.17	10,016	3.01	
<b>A3 EXTERIOR CLADDING</b>		<b>24,561</b>	<b>1.00</b>				<b>76,970</b>	<b>3.13</b>	<b>73,122</b>	<b>2.98</b>	
A31 Walls Below Grade		6,596	1.00				20,720	3.14	19,684	2.98	
A32 Walls Above Grade		7,010	1.00				18,956	2.70	18,008	2.57	
A33 Windows and Entrances		4,610	1.00				16,817	3.65	15,976	3.47	
A34 Roof Coverings		4,680	1.00				16,610	3.55	15,780	3.37	
A35 Projections		1,665	1.00				3,866	2.32	3,673	2.21	
<b>A4 HOUSE FRAMING (LABOUR)</b>		<b>6,000</b>	<b>1.00</b>				<b>17,797</b>	<b>2.97</b>	<b>16,907</b>	<b>2.82</b>	
A41 House Framing Labour		6,000	1.00				17,797	2.97	16,907	2.82	
<b>B INTERIORS</b>		<b>21,715</b>	<b>1.00</b>				<b>61,060</b>	<b>2.81</b>	<b>58,007</b>	<b>2.67</b>	
<b>B1 PARTITIONS &amp; DOORS</b>		<b>4,486</b>	<b>1.00</b>				<b>17,671</b>	<b>3.94</b>	<b>16,788</b>	<b>3.74</b>	
B11 Partitions		3,445	1.00				9,637	2.80	9,155	2.66	
B12 Doors		1,041	1.00				8,035	7.72	7,633	7.33	
<b>B2 FINISHES</b>		<b>6,818</b>	<b>1.00</b>				<b>24,169</b>	<b>3.54</b>	<b>22,961</b>	<b>3.37</b>	
B21 Floor Finishes		4,356	1.00				7,890	1.81	7,495	1.72	
B22 Ceiling Finishes		1,000	1.00				2,621	2.62	2,490	2.49	
B23 Wall Finishes		1,463	1.00				13,658	9.34	12,975	8.87	
<b>B3 FITTINGS &amp; EQUIPMENT</b>		<b>10,411</b>	<b>1.00</b>				<b>19,219</b>	<b>1.85</b>	<b>18,258</b>	<b>1.75</b>	
B31 Fittings & Fixtures		6,836	1.00				16,024	2.34	15,223	2.23	
B32 Equipment		3,575	1.00				3,195	0.89	3,035	0.85	
<b>C SERVICES</b>		<b>9,850</b>	<b>1.00</b>				<b>44,024</b>	<b>4.47</b>	<b>41,823</b>	<b>4.25</b>	
<b>C1 MECHANICAL</b>		<b>6,500</b>	<b>1.00</b>				<b>24,153</b>	<b>3.72</b>	<b>22,945</b>	<b>3.53</b>	
C11 Mechanical		6,500	1.00				24,153	3.72	22,945	3.53	
<b>C2 ELECTRICAL</b>		<b>3,350</b>	<b>1.00</b>				<b>19,872</b>	<b>5.93</b>	<b>18,878</b>	<b>5.64</b>	
C21 Electrical		3,350	1.00				19,872	5.93	18,878	5.64	
<b>EXCLUDING SITE</b>		<b>73,183</b>	<b>1.00</b>				<b>257,461</b>	<b>3.52</b>	<b>244,588</b>	<b>3.34</b>	
<b>D1 SITE WORK</b>		<b>5,044</b>	<b>1.00</b>				<b>12,354</b>	<b>2.45</b>	<b>11,737</b>	<b>2.33</b>	
D11 Site Development		5,044	1.00				12,354	2.45	11,737	2.33	
<b>INCLUDING SITE</b>		<b>78,227</b>	<b>1.00</b>				<b>269,815</b>	<b>3.45</b>	<b>256,325</b>	<b>3.28</b>	
<b>Z1 GENERAL REQUESTS &amp; FEE</b>		<b>7,040</b>	<b>1.00</b>				<b>30,327</b>	<b>4.31</b>	<b>28,811</b>	<b>4.09</b>	
Z11 General Requirements		7,040	1.00				21,585	3.07	20,506	2.91	
Z12 Fee		0	N/A				8,742	N/A	8,305	N/A	
<b>TOTAL</b>		<b>85,267</b>	<b>1.00</b>				<b>250,732</b>	<b>2.94</b>	<b>300,143</b>	<b>3.52</b>	<b>285,136</b>
<b>Cost per m2:</b>		<b>853</b>	<b>1.00</b>				<b>2,507</b>	<b>2.94</b>	<b>3,001</b>	<b>3.52</b>	<b>2,851</b>
											<b>3.34</b>



Project : CMHC HOUSING STUDY		CANADA vs. JAPAN		Costing Date: August 2000
Location : JAPAN				Report Date: February 25, 2003
Element		Canada Wood Frame	Japan Wood Frame	Per GFA of: 100 m2
<b>A SHELL</b>				Japan Traditional House
<b>A1 SUBSTRUCTURE</b>		Concrete, plastic weeping tile Full basement		Concrete slab on grade w/ screed Structural wood framing Wood w/ asbestos cement roofing
A21 Lowest Floor Construction		100mm concrete slab on grade 38mm x 235mm K.D. floor joist Engineered wood trusses	100mm concrete slab on grade 38mm x 235mm floor joist Engineered wood trusses	Concrete slab on grade w/ shoring etc. No basement
<b>A3 EXTERIOR CLADDING</b>		200mm concrete w/ asphaltic emulsion 38mm x 140mm K.D. brick/vinyl siding Vinyl clad wood framed window 25-year asphalt shingles Pre-finished aluminum soffit, pipe, fascia		200mm concrete w/ asphaltic emulsion 38mm x 140mm studs, brick/vinyl siding Vinyl clad wood framed window 25-year asphalt shingles Pre-finished aluminum soffit, pipe, fascia, eaves, gutter, down spouts
<b>A4 HOUSE FRAMING (LABOUR)</b>		Lump sum framing labour		Lump sum framing labour
<b>B INTERIORS</b>				Gypsum wall board Hollow core wood
<b>B1 PARTITIONS &amp; DOORS</b>		38mm x 89mm K.D. wood framing Hollow core wood door (painted)		VCT sheet, tile, wood, tatami Vinyl covering on board Paint, vinyl wall covering, tile
<b>B2 FINISHES</b>		35 oz. carpet, sheet vinyl, wood Textured gypsum board Painted gypsum board		Melamine w/ arborite counter top Wood burning fireplace
B21 Floor Finishes		35 oz. carpet, sheet vinyl, wood Textured gypsum board Painted gypsum board		No air-conditioning
B22 Ceiling Finishes				Japan standard
B23 Wall finishes				Japan standard
<b>B3 FITTINGS &amp; EQUIPMENT</b>		One 4-piece bathroom 100 amps main service 110 volts, Canadian standard		Japan standard w/ telephone
<b>EXCLUDING SITE</b>				
<b>D1 SITE WORK</b>		Site services incl w/ land price Not included, except deck		Site services incl w/ land price Not included, except deck
<b>Z1 GENERAL REQUESTS &amp; FEE</b>				
Z11 General Requirements				
Z12 Fee				
<b>TOTAL</b>		<b>GFA: 100 m2</b>		<b>GFA: 118 m2</b>

## 7. POLAND

**Hanscom**  
**CMHC HOUSING STUDY**  
**100M2 HOUSE TIMBER FRAMED**  
**POLAND**

**TRADE SUMMARY**

Costing Date: August 2000  
 Currency Rate: (CAD/USD) 1.47/15000  
 Report Date: January 15, 2003 R

Description	Amount as Priced USD	Converted to Canadian \$	CAD Amount IN CANADA	Ratios to Canada USD/CAD	CAD/CAD	Remarks
1. Excavate, Backfill, Gravel	1,776 USD	2,613 CAD	2,138 CAD	0.83	1.22	
2. Concrete Steel & Formwork	5,335 USD	7,850 CAD	9,505 CAD	0.56	0.83	
3. Dampproofing	1,000 USD	1,472 CAD	902 CAD	1.11	1.63	
4a. Rough Carpentry (Materials Only)						
- Lumber	1,822 USD	2,681 CAD	3,335 CAD	0.55	0.80	
- Plywood	2,786 USD	4,099 CAD	5,226 CAD	1.10	1.62	
- Trusses	1,251 USD	1,841 CAD	2,190 CAD	0.57	0.84	
- Stairs	100 USD	147 CAD	768 CAD	0.13	0.19	
- Deck	960 USD	1,412 CAD	1,717 CAD	0.56	0.82	
Subtotal Rough Carpentry (Materials)	6,918 USD	10,180 CAD	10,535 CAD	0.66	0.97	
4b. Rough Carpentry (Framing Labour)						
5. Roofing	5,195 USD	7,644 CAD	7,650 CAD	0.68	1.00	
6a. Windows (Materials Only)	2,940 USD	4,326 CAD	2,660 CAD	1.11	1.63	
6b. Doors	2,366 USD	3,482 CAD	3,085 CAD	0.77	1.13	
7. Exterior Cladding/Roof Elements	712 USD	1,048 CAD	1,260 CAD	0.57	0.83	
8. Plumbing	3,255 USD	4,790 CAD	6,685 CAD	0.49	0.72	
9. Electrical	3,400 USD	5,003 CAD	3,000 CAD	1.13	1.67	
10. Heating	2,745 USD	4,039 CAD	3,350 CAD	0.82	1.21	
11. Specialty Items	2,630 USD	3,870 CAD	3,500 CAD	0.75	1.11	
12. Drywall, Insulation, Caulking	944 USD	1,389 CAD	3,615 CAD	0.26	0.38	
13. Cabinets & Vanities	5,401 USD	7,948 CAD	6,270 CAD	0.86	1.27	
- Material	744 USD	1,095 CAD	3,450 CAD	0.22	0.32	
- Labour	200 USD	294 CAD	700 CAD	0.29	0.42	
Subtotal Cabinet & Vanities	944 USD	1,389 CAD	4,150 CAD	0.23	0.33	
14. Painting, Stain, Lacquer	2,015 USD	2,965 CAD	2,040 CAD	0.99	1.45	
15. Interior Finishing						
- Doors	3,535 USD	5,202 CAD	820 CAD	4.31	6.34	
- Casings, Trims, Handrails	1,190 USD	1,751 CAD	1,724 CAD	0.69	1.02	
- Door Hardware	252 USD	371 CAD	346 CAD	0.73	1.07	
- Bathroom Accessories	381 USD	561 CAD	802 CAD	0.48	0.70	
Subtotal Interior Finishing	5,358 USD	7,884 CAD	3,692 CAD	1.45	2.14	
16. Floor Coverings	1,860 USD	2,737 CAD	4,190 CAD	0.44	0.65	
17. Miscellaneous & Fees	12,631 USD	18,587 CAD	7,040 CAD	1.79	2.64	
<b>Total Wood Frame House Cost:</b>	<b>67,425 USD</b>	<b>99,216 CAD</b>	<b>85,267 CAD</b>	<b>0.79</b>	<b>1.16</b>	
<b>Cost per m2:</b>	<b>674.25 USD</b>	<b>992.16 CAD</b>	<b>852.67 CAD</b>	<b>0.79</b>	<b>1.16</b>	
	(1)	(2)	(3)			

Project : CMHC HOUSING STUDY		ELEMENTAL COST SUMMARY						Costing Date: August 2000		Report Date: January 15, 2003 R	
Location : POLAND		Currency Rate: 1.4715000 CAD/USD						GFA: 100 m2			
Element	Ratio to GFA	Elemental Cost	Elemental Unit rate	USD	Rate per m2 USD	%	Converted to Canadian \$	Rate per m2 IN CANADA	USD/CAD	CAD/CAD	Ratios to Canada
<b>A SHELL</b>				<b>29,608</b>	<b>43.9</b>	<b>3.5</b>	<b>34.97</b>	<b>33.79</b>	<b>0.70</b>	<b>1.04</b>	
<b>A1 SUBSTRUCTURE</b>				<b>2,377</b>	<b>23.77</b>	<b>11.71</b>	<b>17.23</b>	<b>16.81</b>	<b>0.70</b>	<b>1.02</b>	1.02
A11 Foundations	1.000	100 m2	11.71	1,171	11.71		17.75	16.98	0.71	1.05	
A12 Basement Excavations	3.000	300 m3	4.02	1,206	12.06						
<b>A2 STRUCTURE</b>				<b>5,405</b>	<b>54.05</b>	<b>8.0</b>	<b>79.53</b>	<b>76.78</b>	<b>0.70</b>	<b>1.04</b>	
A21 Lowest Floor Construction	1.000	100 m2	10.25	1,025	10.25		15.08	11.40	0.90	1.32	
A22 Upper Floor Construction	1.000	100 m2	16.37	1,637	16.37		24.09	32.08	0.51	0.75	
A23 Roof Construction	1.000	100 m2	27.42	2,742	27.42		40.36	33.30	0.82	1.21	
<b>A3 EXTERIOR CLADDING</b>				<b>16,981</b>	<b>169.81</b>	<b>25.2</b>	<b>249.88</b>	<b>245.61</b>	<b>0.69</b>	<b>1.02</b>	
A31 Walls Below Grade	0.980	98 m2	39.05	3,827	38.27		56.31	65.96	0.58	0.85	
A32 Walls Above Grade	0.980	98 m2	41.98	4,114	41.14		60.54	70.10	0.59	0.86	
A33 Windows and Entrances	0.130	13 no.	259.23	3,370	33.70		49.59	46.10	0.73	1.08	
A34 Roof Coverings	1.400	140 m2	32.43	4,540	45.40		66.81	46.80	0.97	1.43	
A35 Projections	0.250	25 m2	45.20	1,130	11.30		16.63	16.65	0.68	1.00	
<b>A4 HOUSE FRAMING (LABOUR)</b>				<b>4,845</b>	<b>48.45</b>	<b>7.2</b>	<b>71.29</b>	<b>60.00</b>	<b>0.81</b>	<b>1.19</b>	
A41 House Framing Labour	1.000	100 m2	48.45	4,845	48.45		71.29	60.00	0.81	1.19	
<b>B INTERIORS</b>				<b>100</b>	<b>100</b>	<b>m2</b>	<b>14,107</b>	<b>141.07</b>	<b>20.9</b>	<b>207.58</b>	<b>217.15</b>
<b>B1 PARTITIONS &amp; DOORS</b>				<b>6,249</b>	<b>62.49</b>	<b>9.3</b>	<b>91.95</b>	<b>44.86</b>	<b>1.39</b>	<b>2.05</b>	<b>0.96</b>
B11 Partitions	2.050	205 m2	12.65	2,594	25.94		38.17	34.45	0.75	1.11	
B12 Doors	0.110	11 no.	332.27	3,655	36.55		53.78	10.41	3.51	5.17	
<b>B2 FINISHES</b>				<b>4,189</b>	<b>41.89</b>	<b>6.2</b>	<b>61.64</b>	<b>68.18</b>	<b>0.61</b>	<b>0.90</b>	
B21 Floor Finishes	1.000	100 m2	20.14	2,014	20.14		29.63	43.56	0.46	0.68	
B22 Ceiling Finishes	1.000	100 m2	6.00	600	6.00		8.83	10.00	0.60	0.88	
B23 Wall Finishes	4.160	416 m2	3.79	1,575	15.75		23.18	14.63	1.08	1.58	
<b>B3 FITTINGS &amp; EQUIPMENT</b>				<b>3,669</b>	<b>36.69</b>	<b>5.4</b>	<b>53.99</b>	<b>104.11</b>	<b>0.35</b>	<b>0.52</b>	
B31 Fittings & Fixtures	1.000	100 m2	27.55	2,755	27.55		40.54	68.36	0.40	0.59	
B32 Equipment	1.000	100 m2	9.14	914	9.14		13.45	35.75	0.26	0.38	
<b>C SERVICES</b>				<b>8,775</b>	<b>87.75</b>	<b>13.0</b>	<b>129.12</b>	<b>98.50</b>	<b>0.89</b>	<b>1.31</b>	
<b>C1 MECHANICAL</b>				<b>6,030</b>	<b>60.30</b>	<b>8.9</b>	<b>88.73</b>	<b>65.00</b>	<b>0.93</b>	<b>1.37</b>	
C11 Mechanical	1.000	100 m2	60.30	6,030	60.30		88.73	65.00	0.93	1.37	
<b>C2 ELECTRICAL</b>				<b>2,745</b>	<b>27.45</b>	<b>4.1</b>	<b>40.39</b>	<b>33.50</b>	<b>0.82</b>	<b>1.21</b>	
C21 Electrical	1.000	100 m2	27.45	2,745	27.45		40.39	33.50	0.82	1.21	
<b>NET BUILDING COST - EXCLUDING SITE</b>				<b>52,489</b>	<b>524.89</b>	<b>77.8</b>	<b>772.38</b>	<b>731.83</b>	<b>0.72</b>	<b>1.06</b>	
<b>D1 SITE WORK</b>				<b>2,305</b>	<b>23.05</b>	<b>3.4</b>	<b>33.91</b>	<b>50.44</b>	<b>0.46</b>	<b>0.67</b>	
D11 Site Development	0.010	1 sum	2,305	2,305	23.05		33.91	50.44	0.46	0.67	
<b>NET BUILDING COST - INCLUDING SITE</b>				<b>54,794</b>	<b>547.94</b>	<b>81.3</b>	<b>806.30</b>	<b>782.27</b>	<b>0.70</b>	<b>1.03</b>	
<b>Z1 GENERAL REQUIREMENTS &amp; FEE</b>				<b>12,630</b>	<b>126.30</b>	<b></b>	<b>185.85</b>	<b>70.40</b>	<b>1.79</b>	<b>2.64</b>	
Z11 General Requirements	7.0%			3,836	38.36		56.44	70.40	0.54	0.80	
Z12 Fee	15.0%			8,794	87.94		129.41	-	N/A	N/A	
<b>TOTAL EXCLUDING CONTINGENCIES</b>				<b>67,424</b>	<b>674.24</b>	<b>100.0</b>	<b>992.15</b>	<b>852.67</b>	<b>0.79</b>	<b>1.16</b>	

(1) (2) (3)

Project : CMHC HOUSING STUDY : COMPARISON OF TRADE COSTS Location : POLAND		CANADA vs. POLAND (IN CAD)						Costing Date: August 2000 Report Date: February 25, 2003 Per GFA of: 100 m <sup>2</sup>		
Trade Description		Currency Rate: 1.4715000 CAD/USD			Poland			Warsaw		Gdansk
		Canada Wood Frame	CAD/CAD	Total \$	Traditional: \$/100m <sup>2</sup>	CAD/CAD	Total \$	Wood Frame	CAD/CAD	Potential Export Opportunity
1. Excavate, Backfill, Gravel	2,138	1.00			2,613	1.22	2,483	1.16		
2. Concrete Steel & Formwork	9,505	1.00			7,850	0.83	7,457	0.78		
3. Dampproofing	902	1.00			1,472	1.63	1,398	1.55		
4a. Rough Carpentry (Materials Only)										
- Lumber	3,335	1.00			2,681	0.80	2,547	0.76		
- Plywood	2,526	1.00			4,099	1.62	3,894	1.54		
- Trusses	2,190	1.00			1,841	0.84	1,749	0.80		
- Stairs	768	1.00			147	0.19	139	0.18		
- Deck	1,717	1.00			1,412	0.82	1,342	0.78		
<b>Subtotal Rough Carpentry (Materials)</b>	<b>10,535</b>	<b>1.00</b>			<b>10,180</b>	<b>0.97</b>	<b>9,671</b>	<b>0.92</b>		
4b. Rough Carpentry (Framing Labour)	7,650	1.00			7,644	1.00	7,262	0.95		
4c. Masonry - Exterior / Interior	0	N/A			0	N/A	0	N/A		
5. Roofing	2,660	1.00			4,326	1.63	4,110	1.55		
6a. Windows (Materials Only)	3,085	1.00			3,482	1.13	3,307	1.07		
6b. Doors	1,260	1.00			1,048	0.83	995	0.79		
7. Exterior Cladding/Roof Elements	6,685	1.00			4,790	0.72	4,550	0.68		
8. Plumbing	3,000	1.00			5,003	1.67	4,753	1.58		
9. Electrical	3,350	1.00			4,039	1.21	3,837	1.15		
10. Heating	3,500	1.00			3,870	1.11	3,677	1.05		
11. Specialty Items	3,615	1.00			1,389	0.38	1,320	0.37		
12. Drywall, Insulation, Caulking	6,270	1.00			7,948	1.27	7,550	1.20		
13. Cabinets & Vanities										
- Material	3,450	1.00			1,095	0.32	1,040	0.30		
- Labour	700	1.00			294	0.42	280	0.40		
<b>Subtotal Cabinet &amp; Vanities</b>	<b>4,150</b>	<b>1.00</b>			<b>1,389</b>	<b>0.33</b>	<b>1,320</b>	<b>0.32</b>		
14. Painting, Stain, Lacquer	2,040	1.00			2,965	1.45	2,817	1.38		
15. Interior Finishing										
- Doors	820	1.00			5,202	6.34	4,942	6.03		
- Casing, Trims, Handrails	1,724	1.00			1,751	1.02	1,664	0.97		
- Door Hardware	346	1.00			371	1.07	352	1.02		
- Bathroom Accessories	802	1.00			561	0.70	533	0.66		
<b>Subtotal Interior Finishing</b>	<b>3,692</b>	<b>1.00</b>			<b>7,884</b>	<b>2.14</b>	<b>7,490</b>	<b>2.03</b>		
16. Floor Coverings	4,190	1.00			2,737	0.65	2,600	0.62		
17. Miscellaneous & Fees	7,040	1.00			18,587	2.64	17,657	2.51		
<b>Total Wood Frame House Cost:</b>	<b>85,267</b>	<b>1.00</b>			<b>93,614</b>	<b>1.10</b>	<b>99,216</b>	<b>1.11</b>		
<b>Cost per m<sup>2</sup>:</b>	<b>853</b>	<b>1.00</b>			<b>936</b>	<b>1.10</b>	<b>992</b>	<b>1.11</b>		

Project : CMHC HOUSING STUDY		CANADA vs. POLAND (IN CAD)				Costing Date: August 2000	
Location : POLAND		Currency Rate: 1.4715000 CAD/USD				Report Date: February 25, 2003 Per GFA of: 100 m <sup>2</sup>	
Element		Canada Wood Frame	Poland Traditional: \$/100m <sup>2</sup>	Warsaw Wood Frame	Gdansk Wood Frame	0.950	Potential Export Opportunity
	Total \$	CAD/CAD	Total \$	Total \$	CAD/CAD	Total \$	CAD/CAD
<b>A SHELL</b>	<b>41,618</b>	<b>1.00</b>		<b>43,568</b>	<b>1.05</b>	<b>41,389</b>	<b>0.99</b>
<b>A1 SUBSTRUCTURE</b>	<b>3,379</b>	<b>1.00</b>		<b>3,497</b>	<b>1.04</b>	<b>3,322</b>	<b>0.98</b>
A11 Foundations	1,681	1.00		1,723	1.02	1,637	0.97
A12 Basement Excavations	1,698	1.00		1,775	1.05	1,686	0.99
<b>A2 STRUCTURE</b>	<b>7,678</b>	<b>1.00</b>		<b>7,953</b>	<b>1.04</b>	<b>7,555</b>	<b>0.98</b>
A21 Lowest Floor Construction	1,140	1.00		1,508	1.32	1,433	1.26
A22 Upper Floor Construction	3,208	1.00		2,409	0.75	2,289	0.71
A23 Roof Construction	3,330	1.00		4,036	1.21	3,834	1.15
<b>A3 EXTERIOR CLADDING</b>	<b>24,561</b>	<b>1.00</b>		<b>24,988</b>	<b>1.02</b>	<b>23,738</b>	<b>0.97</b>
A31 Walls Below Grade	6,596	1.00		5,631	0.85	5,350	0.81
A32 Walls Above Grade	7,010	1.00		6,054	0.86	5,752	0.82
A33 Windows and Entrances	4,610	1.00		4,959	1.08	4,711	1.02
A34 Roof Coverings	4,680	1.00		6,681	1.43	6,347	1.36
A35 Projections	1,665	1.00		1,663	1.00	1,580	0.95
<b>A4 HOUSE FRAMING (LABOUR)</b>	<b>6,000</b>	<b>1.00</b>		<b>7,129</b>	<b>1.19</b>	<b>6,773</b>	<b>1.13</b>
A41 House Framing Labour	6,000	1.00		7,129	1.19	6,773	1.13
<b>B INTERIORS</b>	<b>21,715</b>	<b>1.00</b>		<b>20,758</b>	<b>0.96</b>	<b>19,720</b>	<b>0.91</b>
<b>B1 PARTITIONS &amp; DOORS</b>	<b>4,486</b>	<b>1.00</b>		<b>9,195</b>	<b>2.05</b>	<b>8,736</b>	<b>1.95</b>
B11 Partitions	3,445	1.00		3,817	1.11	3,626	1.05
B12 Doors	1,041	1.00		5,378	5.17	5,109	4.91
<b>B2 FINISHES</b>	<b>6,818</b>	<b>1.00</b>		<b>6,164</b>	<b>0.90</b>	<b>5,856</b>	<b>0.86</b>
B21 Floor Finishes	4,356	1.00		2,963	0.68	2,815	0.65
B22 Ceiling Finishes	1,000	1.00		883	0.88	839	0.84
B23 Wall Finishes	1,463	1.00		2,318	1.58	2,202	1.51
<b>B3 FITTINGS &amp; EQUIPMENT</b>	<b>10,411</b>	<b>1.00</b>		<b>5,399</b>	<b>0.52</b>	<b>5,129</b>	<b>0.49</b>
B31 Fittings & Fixtures	6,836	1.00		4,054	0.59	3,851	0.56
B32 Equipment	3,575	1.00		1,345	0.38	1,278	0.36
<b>C SERVICES</b>	<b>9,850</b>	<b>1.00</b>		<b>12,912</b>	<b>1.31</b>	<b>12,267</b>	<b>1.25</b>
<b>C1 MECHANICAL</b>	<b>6,500</b>	<b>1.00</b>		<b>8,873</b>	<b>1.37</b>	<b>8,429</b>	<b>1.30</b>
C11 Mechanical	6,500	1.00		8,873	1.37	8,429	1.30
<b>C2 ELECTRICAL</b>	<b>3,350</b>	<b>1.00</b>		<b>4,039</b>	<b>1.21</b>	<b>3,837</b>	<b>1.15</b>
C21 Electrical	3,350	1.00		4,039	1.21	3,837	1.15
<b>EXCLUDING SITE</b>	<b>73,183</b>	<b>1.00</b>		<b>77,238</b>	<b>1.06</b>	<b>73,376</b>	<b>1.00</b>
<b>D1 SITE WORK</b>	<b>5,044</b>	<b>1.00</b>		<b>3,391</b>	<b>0.67</b>	<b>3,222</b>	<b>0.64</b>
D11 Site Development	5,044	1.00		3,391	0.67	3,222	0.64
<b>INCLUDING SITE</b>	<b>78,227</b>	<b>1.00</b>		<b>80,630</b>	<b>1.03</b>	<b>76,598</b>	<b>0.98</b>
<b>Z1 GENERALREQTS &amp; FEE</b>	<b>7,040</b>	<b>1.00</b>		<b>18,585</b>	<b>2.64</b>	<b>17,656</b>	<b>2.51</b>
Z11 General Requirements	7,040	1.00	N/A	5,644	0.80	5,362	0.76
Z12 Fee	0			12,941	N/A	12,294	N/A
<b>TOTAL</b>	<b>85,267</b>	<b>1.00</b>		<b>93,614</b>	<b>1.10</b>	<b>94,254</b>	<b>1.11</b>
<b>Cost per m<sup>2</sup>:</b>	<b>853</b>	<b>1.00</b>		<b>936</b>	<b>1.10</b>	<b>943</b>	<b>1.11</b>

Project : CMHC HOUSING STUDY		CANADA vs. POLAND		Costing Date: August 2000
Location : POLAND				Report Date: February 25, 2003
				Per GFA of: 100 m2
Element		Canada Wood Frame	Poland Wood Frame	Poland Traditional House
<b>A SHELL</b>				
<b>A1 SUBSTRUCTURE</b>		Concrete, plastic weeping tile Full basement	Concrete, plastic weeping tile Full basement	Concrete, plastic weeping tile No basement
A21 Lowest Floor Construction	100mm concrete slab on grade 38mm x 235mm K.D. floor joist Engineered wood trusses	100mm concrete slab on grade 38mm x 235mm floor joist Engineered wood trusses	80mm concrete slab on grade R-C Teriva system slab w/ prefab beams & block Wood	
A22 Upper Floor Construction				
A23 Roof Construction				
<b>A3 EXTERIOR CLADDING</b>				
A31 Walls Below Grade	200mm concrete w/ asphaltic emulsion 38mm x 140mm K.D. brick/vinyl siding	200mm concrete w/ asphaltic emulsion 38mm x 140mm studs, brick/vinyl siding Poland substitute	Concrete foundation, walls insulated Ceramic hollow blocks Double glazed timber, varnished	
A32 Walls Above Grade	Vinyl clad wood framed window	25-year asphalt shingles	Cement shingles	
A33 Windows and Entrances				
A34 Roof Coverings				
A35 Projections				
<b>A4 HOUSE FRAMING (LABOUR)</b>				
A41 House Framing Labour	Lump sum framing labour	Lump sum framing labour	Lump sum framing labour	
<b>B INTERIORS</b>				
<b>B1 PARTITIONS &amp; DOORS</b>				
B11 Partitions	38mm x 89mm K.D. wood framing Hollow core wood door (painted)	38mm x 89mm K.D. wood framing Hollow core wood door (painted)	Solid brick walls, 12cm thick Hollow core, varnished, oak veneer	
B12 Doors				
<b>B2 FINISHES</b>				
B21 Floor Finishes	35 oz. carpet, sheet vinyl, wood Textured gypsum board Painted gypsum board	35 oz. Carpet, sheet vinyl, wood Textured gypsum board Painted gypsum board	Oak parquet, floor tiling Painted lime plaster Painted lime plaster, wall tiling	
B22 Ceiling Finishes				
B23 Wall finishes				
<b>B3 FITTINGS &amp; EQUIPMENT</b>				
B31 Fittings & Fixtures	Melamine w/ arborite counter top Wood burning fireplace	Melamine w/ arborite counter top Wood burning fireplace		
B32 Equipment	No air-conditioning	No air-conditioning	Gas furnace - dual function -hot water & rads	
<b>C SERVICES</b>				
<b>C1 MECHANICAL</b>	Gas fired forced air heating One 4-piece bathroom	Gas fired forced air heating One 4-piece bathroom	Poland standard Light fixtures excluded	
<b>C2 ELECTRICAL</b>	100 amps main service 110 volts, Canadian standard	100 amps main service Poland standard		
<b>EXCLUDING SITE</b>				
<b>D1 SITE WORK</b>	Site services incl w/ land price Not included, except deck	Site services incl w/ land price Not included, except deck	Site services incl w/ land price Not included, except deck	
<b>Z1 GENERAL REQUESTS &amp; FEE</b>				
Z11 General Requirements				
Z12 Fee				
<b>TOTAL</b>	<b>GFA: 100 m2</b>	<b>GFA: 100 m2</b>	<b>GFA: 135 m2</b>	

## 8. RUSSIA

**Hanscom**  
**CMHC HOUSING STUDY**  
**100M2 HOUSE TIMBER FRAMED**  
**RUSSIA**

**TRADE SUMMARY**

Costing Date: August 2000  
 Currency Rate: (CAD/USD) 1.47/15000  
 Report Date: February 7, 2003 R

Description	Amount as Priced USD	Converted to Canadian \$	CAD Amount IN CANADA	Ratios to Canada USD/CAD	CAD/CAD	Remarks
1. Excavate, Backfill, Gravel	4,638 USD	6,825 CAD	2,138 CAD	2.17	3.19	
2. Concrete Steel & Formwork	5,589 USD	8,224 CAD	9,505 CAD	0.59	0.87	
3. Dampproofing	513 USD	754 CAD	902 CAD	0.57	0.84	
4a. Rough Carpentry (Materials Only)						
- Lumber	1,520 USD	2,237 CAD	3,335 CAD	0.46	0.67	
- Plywood	2,065 USD	3,039 CAD	2,526 CAD	0.82	1.20	
- Trusses	1,080 USD	1,589 CAD	2,190 CAD	0.49	0.73	
- Stairs	103 USD	152 CAD	768 CAD	0.13	0.20	
- Deck	357 USD	525 CAD	1,717 CAD	0.21	0.31	
<b>Subtotal Rough Carpentry (Materials)</b>	<b>5,125 USD</b>	<b>7,541 CAD</b>	<b>10,535 CAD</b>	<b>0.49</b>	<b>0.72</b>	
4b. Rough Carpentry (Framing Labour)						
5. Roofing	3,550 USD	5,224 CAD	7,650 CAD	0.46	0.68	
6a. Windows (Materials Only)	1,400 USD	2,060 CAD	2,660 CAD	0.53	0.77	
6b. Doors	2,840 USD	4,179 CAD	3,085 CAD	0.92	1.35	
7. Exterior Cladding/Roof Elements	700 USD	1,030 CAD	1,260 CAD	0.56	0.82	
8. Plumbing	3,230 USD	4,753 CAD	6,685 CAD	0.48	0.71	
9. Electrical	2,500 USD	3,679 CAD	3,000 CAD	0.83	1.23	
10. Heating	3,300 USD	4,856 CAD	3,350 CAD	0.99	1.45	
11. Specialty Items	2,800 USD	4,120 CAD	3,500 CAD	0.80	1.18	
12. Drywall, Insulation, Caulking	2,185 USD	3,215 CAD	3,615 CAD	0.60	0.89	
13. Cabinets & Vanities	4,849 USD	7,135 CAD	6,270 CAD	0.77	1.14	
- Material	850 USD	1,251 CAD	3,450 CAD	0.25	0.36	
- Labour	200 USD	294 CAD	700 CAD	0.29	0.42	
<b>Subtotal Cabinet &amp; Vanities</b>	<b>1,050 USD</b>	<b>1,545 CAD</b>	<b>4,150 CAD</b>	<b>0.25</b>	<b>0.37</b>	
14. Painting, Stain, Lacquer						
15. Interior Finishing						
- Doors	1,300 USD	1,913 CAD	820 CAD	1.59	2.33	
- Casings, Trims, Handrails	1,481 USD	2,179 CAD	1,724 CAD	0.86	1.26	
- Door Hardware	112 USD	165 CAD	346 CAD	0.32	0.48	
- Bathroom Accessories	342 USD	503 CAD	802 CAD	0.43	0.63	
<b>Subtotal Interior Finishing</b>	<b>3,235 USD</b>	<b>4,760 CAD</b>	<b>3,692 CAD</b>	<b>0.88</b>	<b>1.29</b>	
16. Floor Coverings	2,600 USD	3,826 CAD	4,190 CAD	0.62	0.91	
17. Miscellaneous & Fees	7,900 USD	11,625 CAD	7,040 CAD	1.12	1.65	
<b>Total Wood Frame House Cost:</b>	<b>59,335 USD</b>	<b>87,312 CAD</b>	<b>85,267 CAD</b>	<b>0.70</b>	<b>1.02</b>	
<b>Cost per m2:</b>	<b>593.35 USD</b>	<b>873.12 CAD</b>	<b>852.67 CAD</b>	<b>0.70</b>	<b>1.02</b>	
	(1)	(2)	(3)			

Project : CMHC HOUSING STUDY		ELEMENTAL COST SUMMARY						Costing Date: August 2000	
Location : 100M2 HOUSE TIMBER FRAMED RUSSIA		Currency Rate: 1.4715000 CAD/USD			Rate per m2 USD			Report Date: February 7, 2003 R GFA: 100 m2	
Element	Ratio to GFA	Elemental Cost	Elemental USD	Rate per m2 USD	%	Converted to Canadian \$ IN CANADA	Rate per m2	Ratios to Canada	
		Quantity	Unit rate					USD/CAD	CAD/CAD
<b>A SHELL</b>		100 m2		29,085	43.31	427.99	416.18	0.70	1.03
<b>A1 SUBSTRUCTURE</b>						63.72	33.79	1.28	1.89
A11 Foundations	1.000	100 m2	6.89	6.89	7.3	10.13	0.41	0.60	
A12 Basement Excavations	3.000	300 m3	12.14	3.642		53.59	16.98	2.14	3.16
<b>A2 STRUCTURE</b>						75.13	76.78	0.67	0.98
A21 Lowest Floor Construction	1.000	100 m2	15.28	5,106	8.6	22.48	11.40	1.34	1.97
A22 Upper Floor Construction	1.000	100 m2	15.93	1,593		23.44	32.08	0.50	0.73
A23 Roof Construction	1.000	100 m2	19.85	1,985		29.21	33.30	0.60	0.88
<b>A3 EXTERIOR CLADDING</b>						237.63	245.61	0.66	0.97
A31 Walls Below Grade	0.980	98 m2	44.45	16,149	161.49	43.56	65.96	0.66	0.97
A32 Walls Above Grade	0.980	98 m2	37.58			3,683	54.19	70.10	0.53
A33 Windows and Entrances	0.130	13 no.	283.85			3,690	54.30	46.10	0.80
A34 Roof Coverings	1.400	140 m2	22.50			3,150	46.35	46.80	0.67
A35 Projections	0.250	25 m2	50.80			1,270	18.69	16.65	0.76
<b>A4 HOUSE FRAMING (LABOUR)</b>						51.50	60.00	0.58	0.86
A41 House Framing Labour	1.000	100 m2	35.00	3,500		35.00	51.50	60.00	0.58
<b>B INTERIORS</b>						131.03	121.21	217.15	0.60
<b>B1 PARTITIONS &amp; DOORS</b>						3,672	6.2	54.03	44.86
B11 Partitions	2.050	205 m2	11.17			2,290	22.90	33.70	0.82
B12 Doors	0.110	11 no.	125.64			1,382	13.82	20.34	0.66
<b>B2 FINISHES</b>						42.15	7.1	62.02	68.18
B21 Floor Finishes	1.000	100 m2	26.90	2,690		26.90	39.58	43.56	0.62
B22 Ceiling Finishes	1.000	100 m2	4.00	400		4.00	5.89	10.00	0.40
B23 Wall Finishes	4.160	416 m2	2.70			1,125	16.55	14.63	0.77
<b>B3 FITTINGS &amp; EQUIPMENT</b>						52.16	8.8	76.76	104.11
B31 Fittings & Fixtures	1.000	100 m2	30.66			3,066	30.66	45.12	68.36
B32 Equipment	1.000	100 m2	21.50			2,150	21.50	31.64	35.75
<b>C SERVICES</b>						8,600	14.5	126.55	98.50
<b>C1 MECHANICAL</b>						5,300	8.9	77.99	65.00
C11 Mechanical	1.000	100 m2	53.00			53.00	53.00	77.99	65.00
<b>C2 ELECTRICAL</b>						3,300	5.6	48.56	33.50
C21 Electrical	1.000	100 m2	33.00			3,300	33.00	48.56	33.50
<b>NET BUILDING COST - EXCLUDING SITE</b>			50,788			507.88	85.6	747.35	731.83
<b>D1 SITE WORK</b>						647	6.47	1.1	0.69
D11 Site Development	0.010	1 sum	647			647	6.47	9.52	50.44
<b>NET BUILDING COST - INCLUDING SITE</b>			51,435			514.35	86.7	756.87	782.27
<b>Z1 GENERAL REQUIREMENTS &amp; FEE</b>						7,900		116.25	70.40
Z11 General Requirements	12.0%					6,172	61.72	90.82	70.40
Z12 Fee	3.0%					1,728	17.28	25.43	-
<b>TOTAL EXCLUDING CONTINGENCIES</b>			59,336			593.36	100.0	873.12	852.67

(1) (2) (3)

Project : CMHC HOUSING STUDY : COMPARISON OF TRADE COSTS Location : RUSSIA		CANADA vs. RUSSIA (IN CAD)						Costing Date: August 2000 Report Date: February 25, 2003 Per GFA of: 100 m <sup>2</sup>		
Trade Description		Currency Rate: 1.4715000 CAD/USD			Russia			St. Petersburg 0.940		
		Canada Wood Frame	Total \$ CAD/CAD	Total \$	Traditional: \$/100m <sup>2</sup> CAD/CAD	Moscow Wood Frame	Total \$ CAD/CAD	Wood Frame CAD/CAD	Total \$ CAD/CAD	Potential Export Opportunity
1. Excavate, Backfill, Gravel	2,138	1.00			6,825	3.19	6,415	3.00		
2. Concrete Steel & Formwork	9,505	1.00			8,224	0.87	7,731	0.81		
3. Dampproofing	902	1.00			754	0.84	709	0.79		
4a. Rough Carpentry (Materials Only)										
- Lumber	3,335	1.00			2,237	0.67	2,102	0.63		
- Plywood	2,526	1.00			3,039	1.20	2,856	1.13		
- Trusses	2,190	1.00			1,589	0.73	1,494	0.68		
- Stairs	768	1.00			152	0.20	142	0.19		
- Deck	1,717	1.00			525	0.31	494	0.29		
<b>Subtotal Rough Carpentry (Materials)</b>	<b>10,535</b>	<b>1.00</b>			<b>7,541</b>	<b>0.72</b>	<b>7,089</b>	<b>0.67</b>		
4b. Rough Carpentry (Framing Labour)	7,650	1.00			5,224	0.68	4,910	0.64		
4c. Masonry - Exterior / Interior	0	N/A			0	N/A	0	N/A		
5. Roofing	2,660	1.00			2,060	0.77	1,936	0.73		
6a. Windows (Materials Only)	3,085	1.00			4,179	1.35	3,928	1.27		
6b. Doors	1,260	1.00			1,030	0.82	968	0.77		
7. Exterior Cladding/Roof Elements	6,685	1.00			4,753	0.71	4,468	0.67		
8. Plumbing	3,000	1.00			3,679	1.23	3,458	1.15		
9. Electrical	3,350	1.00			4,856	1.45	4,565	1.36		
10. Heating	3,500	1.00			4,120	1.18	3,873	1.11		
11. Specialty Items	3,615	1.00			3,215	0.89	3,022	0.84		
12. Drywall, Insulation, Caulking	6,270	1.00			7,135	1.14	6,706	1.07		
13. Cabinets & Vanities										
- Material	3,450	1.00			1,251	0.36	1,176	0.34		
- Labour	700	1.00			294	0.42	277	0.40		
<b>Subtotal Cabinet &amp; Vanities</b>	<b>4,150</b>	<b>1.00</b>			<b>1,545</b>	<b>0.37</b>	<b>1,452</b>	<b>0.35</b>		
14. Painting, Stain, Lacquer	2,040	1.00			1,961	0.96	1,843	0.90		
15. Interior Finishing										
- Doors	820	1.00			1,913	2.33	1,798	2.19		
- Casing, Trims, Handrails	1,724	1.00			2,179	1.26	2,048	1.19		
- Door Hardware	346	1.00			165	0.48	155	0.45		
- Bathroom Accessories	802	1.00			503	0.63	473	0.59		
<b>Subtotal Interior Finishing</b>	<b>3,692</b>	<b>1.00</b>			<b>4,760</b>	<b>1.29</b>	<b>4,474</b>	<b>1.21</b>		
16. Floor Coverings	4,190	1.00			3,826	0.91	3,596	0.86		
17. Miscellaneous & Fees	7,040	1.00			11,625	1.65	10,927	1.55		
<b>Total Wood Frame House Cost:</b>	<b>85,267</b>	<b>1.00</b>	<b>66,342</b>	<b>0.78</b>	<b>87,312</b>	<b>1.02</b>	<b>82,073</b>	<b>0.96</b>		
<b>Cost per m<sup>2</sup>:</b>	<b>853</b>	<b>1.00</b>	<b>63</b>	<b>0.78</b>	<b>873</b>	<b>1.02</b>	<b>821</b>	<b>0.96</b>		

Project : CMHC HOUSING STUDY		CANADA vs. RUSSIA (IN CAD)						Costing Date: August 2000	
Location : RUSSIA		Currency Rate: 1.4715000 CAD/USD						Report Date: February 25, 2003	
		Element			Canada		Moscow		Potential Export Opportunity
		Total \$	CAD/CAD	Total \$	Russia	Traditional: \$/100m2	Wood Frame	St. Petersburg	0.940
		Total \$	CAD/CAD	Total \$	CAD/CAD	Total \$	CAD/CAD	Total \$	CAD/CAD
<b>A SHELL</b>		<b>41,618</b>	<b>1.00</b>			<b>42,799</b>	<b>1.03</b>	<b>40,231</b>	<b>0.97</b>
<b>A1 SUBSTRUCTURE</b>		<b>3,379</b>	<b>1.00</b>			<b>6,372</b>	<b>1.89</b>	<b>5,990</b>	<b>1.77</b>
A11 Foundations		1,681	1.00			1,013	0.60	952	0.57
A12 Basement Excavations		1,698	1.00			5,359	3.16	5,038	2.97
<b>A2 STRUCTURE</b>		<b>7,678</b>	<b>1.00</b>			<b>7,513</b>	<b>0.98</b>	<b>7,063</b>	<b>0.92</b>
A21 Lowest Floor Construction		1,140	1.00			2,248	1.97	2,114	1.85
A22 Upper Floor Construction		3,208	1.00			2,344	0.73	2,203	0.69
A23 Roof Construction		3,330	1.00			2,921	0.88	2,746	0.82
<b>A3 EXTERIOR CLADDING</b>		<b>24,561</b>	<b>1.00</b>			<b>23,763</b>	<b>0.97</b>	<b>22,337</b>	<b>0.91</b>
A31 Walls Below Grade		6,596	1.00			6,410	0.97	6,025	0.91
A32 Walls Above Grade		7,010	1.00			5,419	0.77	5,094	0.73
A33 Windows and Entrances		4,610	1.00			5,430	1.18	5,104	1.11
A34 Roof Coverings		4,680	1.00			4,635	0.99	4,357	0.93
A35 Projections		1,665	1.00			1,869	1.12	1,757	1.06
<b>A4 HOUSE FRAMING (LABOUR)</b>		<b>6,000</b>	<b>1.00</b>			<b>5,150</b>	<b>0.86</b>	<b>4,841</b>	<b>0.81</b>
A41 House Framing Labour		6,000	1.00			5,150	0.86	4,841	0.81
<b>B INTERIORS</b>		<b>21,715</b>	<b>1.00</b>			<b>19,281</b>	<b>0.89</b>	<b>18,125</b>	<b>0.83</b>
<b>B1 PARTITIONS &amp; DOORS</b>		<b>4,486</b>	<b>1.00</b>			<b>5,403</b>	<b>1.20</b>	<b>5,079</b>	<b>1.13</b>
B11 Partitions		3,445	1.00			3,370	0.98	3,168	0.92
B12 Doors		1,041	1.00			2,034	1.95	1,912	1.84
<b>B2 FINISHES</b>		<b>6,818</b>	<b>1.00</b>			<b>6,202</b>	<b>0.91</b>	<b>5,830</b>	<b>0.86</b>
B21 Floor Finishes		4,356	1.00			3,958	0.91	3,721	0.85
B22 Ceiling Finishes		1,000	1.00			589	0.59	553	0.55
B23 Wall Finishes		1,463	1.00			1,655	1.13	1,556	1.06
<b>B3 FITTINGS &amp; EQUIPMENT</b>		<b>10,411</b>	<b>1.00</b>			<b>7,676</b>	<b>0.74</b>	<b>7,215</b>	<b>0.69</b>
B31 Fittings & Fixtures		6,836	1.00			4,512	0.66	4,241	0.62
B32 Equipment		3,575	1.00			3,164	0.88	2,974	0.83
<b>C SERVICES</b>		<b>9,850</b>	<b>1.00</b>			<b>12,655</b>	<b>1.28</b>	<b>11,896</b>	<b>1.21</b>
<b>C1 MECHANICAL</b>		<b>6,500</b>	<b>1.00</b>			<b>7,799</b>	<b>1.20</b>	<b>7,331</b>	<b>1.13</b>
C11 Mechanical		6,500	1.00			7,799	1.20	7,331	1.13
<b>C2 ELECTRICAL</b>		<b>3,350</b>	<b>1.00</b>			<b>4,856</b>	<b>1.45</b>	<b>4,565</b>	<b>1.36</b>
C21 Electrical		3,350	1.00			4,856	1.45	4,565	1.36
<b>EXCLUDING SITE</b>		<b>73,183</b>	<b>1.00</b>			<b>74,735</b>	<b>1.02</b>	<b>70,251</b>	<b>0.96</b>
<b>D1 SITE WORK</b>		<b>5,044</b>	<b>1.00</b>			<b>952</b>	<b>0.19</b>	<b>895</b>	<b>0.18</b>
D11 Site Development		5,044	1.00			952	0.19	895	0.18
<b>INCLUDING SITE</b>		<b>78,227</b>	<b>1.00</b>			<b>75,687</b>	<b>0.97</b>	<b>71,146</b>	<b>0.91</b>
<b>Z1 GENERAL REQUESTS &amp; FEE</b>		<b>7,040</b>	<b>1.00</b>			<b>11,625</b>	<b>1.65</b>	<b>10,928</b>	<b>1.55</b>
Z11 General Requirements		7,040	1.00	N/A		9,082	1.29	8,537	1.21
Z12 Fee		0				2,543	N/A	2,390	N/A
<b>TOTAL</b>		<b>85,267</b>	<b>1.00</b>			<b>66,342</b>	<b>0.78</b>	<b>87,312</b>	<b>1.02</b>
<b>Cost per m2:</b>		<b>853</b>	<b>1.00</b>			<b>663</b>	<b>0.78</b>	<b>873</b>	<b>1.02</b>
								<b>821</b>	<b>0.96</b>

CANADA vs. RUSSIA			Costing Date: August 2000	Report Date: February 25, 2003
Element	Canada Wood Frame	Russia Wood Frame	Per GFA of: 100 m2	Per GFA of: 100 m2
<b>A SHELL</b>				Russia Traditional House
<b>A1 SUBSTRUCTURE</b>	Concrete, plastic weeping tile Full basement	Concrete Full basement		
A21 Lowest Floor Construction	100mm concrete slab on grade 38mm x 235mm K.D. floor joist Engineered wood trusses	mm concrete slab on grade 38mm x 235mm K.D. floor joist Engineered wood trusses	Concrete slab on grade Pre-cast concrete slabs (Hollow core) Wood Framing	Concrete No basement
A22 Upper Floor Construction				
A23 Roof Construction				
<b>A3 EXTERIOR CLADDING</b>	200mm concrete w/ asphaltic emulsion 38mm x 140mm K.D. brick/vinyl siding Vinyl clad wood framed window 25-year asphalt shingles	200mm concrete w/ asphaltic emulsion 38mm x 140mm K.D. brick/vinyl siding Vinyl clad wood framed window 25-year asphalt shingles	Reinforced concrete wall Formed Concrete wall and brick Aluminum or PVC windows Prefinished steel with zinc coating Soffit, pipe, fascia	Reinforced concrete wall Formed Concrete wall and brick Aluminum or PVC windows Prefinished steel with zinc coating Soffit, pipe, fascia
A31 Walls Below Grade				
A32 Walls Above Grade				
A33 Windows and Entrances				
A34 Roof Coverings				
A35 Projections				
<b>A4 HOUSE FRAMING (LABOUR)</b>	Pre-finished aluminum soffit, pipe, fascia	Pre-finished aluminum soffit, pipe, fascia		
A41 House Framing Labour	Lump sum framing labour	Lump sum framing labour		
<b>B INTERIORS</b>				
<b>B1 PARTITIONS &amp; DOORS</b>	38mm x 89mm K.D. wood framing Hollow core wood door (painted)	38mm x 89mm K.D. wood framing Hollow core wood door (painted)	Brick partitions Hollow core wood door (painted)	
B11 Partitions				
B12 Doors				
<b>B2 FINISHES</b>	35 oz. carpet, sheet vinyl, wood Textured gypsum board Painted gypsum board	35 oz. Carpet, sheet vinyl, wood Textured gypsum board Painted gypsum board	Laminated wood flooring, ceramic tile Painting to underside of concrete slabs Painted	
B21 Floor Finishes				
B22 Ceiling Finishes				
B23 Wall finishes				
<b>B3 FITTINGS &amp; EQUIPMENT</b>	Melamine w/ arborite counter top Wood burning fireplace	Melamine w/ arborite counter top Wood burning fireplace	Brick fire-place	
B31 Fittings & Fixtures				
B32 Equipment				
<b>C SERVICES</b>	No air-conditioning	No air-conditioning	Gas-fired with steel I radiators	
<b>C1 MECHANICAL</b>	Gas fired forced air heating One 4-piece bathroom	Oil fired boiler Russia standard	Russia standard - two bathrooms, kitchen	
<b>C2 ELECTRICAL</b>	100 amps main service 110 volts, Canadian standard		Russian standard	
<b>EXCLUDING SITE</b>				
<b>D1 SITE WORK</b>	Site services incl w/ land price Not included, except deck			
D11 Site Development				
<b>Z1 GENERAL REQUESTS &amp; FEE</b>				
Z11 General Requirements				
Z12 Fee				
<b>TOTAL</b>	<b>GFA: 100 m2</b>	<b>GFA: 100 m2</b>	<b>GFA: 219.2 m2</b>	<b>GFA: 219.2 m2</b>

## 9. SOUTH KOREA

**Hanscom**  
**CMHC HOUSING STUDY**  
**100M2 HOUSE TIMBER FRAMED**  
**SOUTH KOREA**

**TRADE SUMMARY**

Costing Date:  
 August 2000  
 Currency Rate: (CAD/CNY)  
 0.0013270  
 Report Date:  
 February 11, 2003 R

Description	Amount as Priced KRW	Converted to Canadian \$	CAD Amount IN CANADA	Ratios to Canada KRW/CAD	CAD/CAD	Remarks
1. Excavate, Backfill, Gravel	4,562,000 KRW	6,054 CAD	2,138 CAD	2,133.77	2.83	
2. Concrete Steel & Formwork	9,134,400 KRW	12,121 CAD	9,505 CAD	961.03	1.28	
3. Dampproofing	2,267,451 KRW	3,009 CAD	902 CAD	2,513.80	3.34	
4a. Rough Carpentry (Materials Only)						
- Lumber	3,215,000 KRW	4,266 CAD	3,335 CAD	964.02	1.28	
- Plywood	2,262,000 KRW	3,002 CAD	2,526 CAD	895.63	1.19	
- Trusses	2,015,000 KRW	2,674 CAD	2,190 CAD	920.09	1.22	
- Stairs	3,12,000 KRW	414 CAD	768 CAD	406.25	0.54	
- Deck	1,045,200 KRW	1,387 CAD	1,717 CAD	608.91	0.81	
Subtotal Rough Carpentry (Materials)	8,849,200 KRW	11,743 CAD	10,535 CAD	839.97	1.11	
4b. Rough Carpentry (Framing Labour)						
5. Roofing	4,650,000 KRW	6,171 CAD	7,650 CAD	607.84	0.81	
2,100,000 KRW	2,787 CAD	2,660 CAD	789.47	1.05		
1,774,000 KRW	2,354 CAD	3,085 CAD	575.04	0.76		
6a. Windows (Materials Only)						
6b. Doors	780,000 KRW	1,035 CAD	1,260 CAD	619.05	0.82	
7. Exterior Cladding/Roof Elements	5,185,850 KRW	6,882 CAD	6,685 CAD	775.74	1.03	
3,260,000 KRW	4,326 CAD	3,000 CAD	1,086.67	1.44		
3,757,000 KRW	4,986 CAD	3,350 CAD	1,121.49	1.49		
7,325,000 KRW	9,720 CAD	3,500 CAD	2,092.86	2.78		
10. Heating	1,800,000 KRW	2,389 CAD	3,615 CAD	497.93	0.66	
11. Specialty Items	4,680,992 KRW	6,212 CAD	6,270 CAD	746.57	0.99	
12. Drywall, Insulation, Caulking						
13. Cabinets & Vanities						
- Material	3,272,000 KRW	4,342 CAD	3,450 CAD	948.41	1.26	
- Labour	- KRW	- CAD	700 CAD	-	-	
Subtotal Cabinet & Vanities	3,272,000 KRW	4,342 CAD	4,150 CAD	788.43	1.05	
14. Painting, Stain, Lacquer	2,520,679 KRW	3,345 CAD	2,040 CAD	1,235.63	1.64	
15. Interior Finishing						
- Doors	846,300 KRW	1,123 CAD	820 CAD	1,032.07	1.37	
- Casings, Trims, Handrails	1,458,144 KRW	1,935 CAD	1,724 CAD	845.91	1.12	
- Door Hardware	224,200 KRW	298 CAD	346 CAD	647.98	0.86	
- Bathroom Accessories	533,000 KRW	707 CAD	802 CAD	664.59	0.88	
Subtotal Interior Finishing	3,061,644 KRW	4,063 CAD	3,692 CAD	829.32	1.10	
16. Floor Coverings	3,180,000 KRW	4,220 CAD	4,190 CAD	758.95	1.01	
17. Miscellaneous & Fees	8,854,058 KRW	11,749 CAD	7,040 CAD	1,257.68	1.67	
<b>Total Wood Frame House Cost:</b>	<b>81,014,275 KRW</b>	<b>107,506 CAD</b>	<b>85,267 CAD</b>	<b>950.13</b>	<b>1.26</b>	
<b>Cost per m2:</b>	<b>810,142.75 KRW</b>	<b>1,075.06 CAD</b>	<b>852.67 CAD</b>	<b>950.13</b>	<b>1.26</b>	
		(1)	(2)	(3)	(3)	

Project : CMHC HOUSING STUDY		ELEMENTAL COST SUMMARY						Costing Date: August 2000		Report Date: February 11, 2003 R	
Location : SOUTH KOREA		Currency Rate: 0.0013270		CAD/KRW				GFA: 100 m <sup>2</sup>		CAD/CAD	
Element	Ratio to GFA	Elemental Cost	Elemental Unit rate	KRW	Rate per m <sup>2</sup> KRW	%	Converted to Canadian \$	Rate per m <sup>2</sup> IN CANADA	KRW/CAD	Ratios to Canada	
<b>A SHELL</b>				<b>36,922,780</b>	<b>369,227.80</b>	<b>45.6</b>	<b>489.97</b>	<b>416.18</b>	<b>887.19</b>	<b>1.18</b>	
<b>A1 SUBSTRUCTURE</b>				<b>5,752,951</b>	<b>57,529.51</b>	<b>7.1</b>	<b>76.34</b>	<b>33.79</b>	<b>1,702.56</b>	<b>2.26</b>	
A11 Foundations	1.000	100 m <sup>2</sup>	13,969.51	1,396,951	13,969.51		18.54	16.81	831.02	1.10	
A12 Basement Excavations	3.000	300 m <sup>3</sup>	4,356.00	4,356,000	43,560.00		57.80	16.98	2,565.37	3.40	
<b>A2 STRUCTURE</b>				<b>6,165,800</b>	<b>61,658.00</b>	<b>7.6</b>	<b>81.82</b>	<b>76.78</b>	<b>803.05</b>	<b>1.07</b>	
A21 Lowest Floor Construction	1.000	100 m <sup>2</sup>	6,960.00	696,000	6,960.00		9.24	11.40	610.53	0.81	
A22 Upper Floor Construction	1.000	100 m <sup>2</sup>	24,348.00	2,434,800	24,348.00		32.31	32.08	758.98	1.01	
A23 Roof Construction	1.000	100 m <sup>2</sup>	30,350.00	3,035,000	30,350.00		40.27	33.30	911.41	1.21	
<b>A3 EXTERIOR CLADDING</b>				<b>21,704,029</b>	<b>217,040.29</b>	<b>26.8</b>	<b>288.01</b>	<b>245.61</b>	<b>883.69</b>	<b>1.17</b>	
A31 Walls Below Grade	0.980	98 m <sup>2</sup>	84,817.35	8,312,100	83,121.00		110.30	65.96	1,260.21	1.67	
A32 Walls Above Grade	0.980	98 m <sup>2</sup>	62,159.99	6,091,679	60,916.79		80.84	70.10	869.00	1.15	
A33 Windows and Entrances	0.130	13 no.	207,876.92	2,702,400	27,024.00		35.86	46.10	586.20	0.78	
A34 Roof Coverings	1.400	140 m <sup>2</sup>	24,550.00	3,437,000	34,370.00		45.61	46.80	734.40	0.97	
A35 Projections	0.250	25 m <sup>2</sup>	46,434.00	1,160,850	11,608.50		15.40	16.65	697.21	0.93	
<b>A4 HOUSE FRAMING (LABOUR)</b>				<b>3,300,000</b>	<b>33,000.00</b>	<b>4.1</b>	<b>43.79</b>	<b>60.00</b>	<b>550.00</b>	<b>0.73</b>	
A41 House Framing Labour	1.000	100 m <sup>2</sup>	33,000.00	3,300,000	33,000.00		43.79	60.00	550.00	0.73	
<b>B INTERIORS</b>				<b>17,377,236</b>	<b>173,772.36</b>	<b>21.4</b>	<b>230.60</b>	<b>217.15</b>	<b>800.25</b>	<b>1.06</b>	
<b>B1 PARTITIONS &amp; DOORS</b>				<b>3,454,092</b>	<b>34,540.92</b>	<b>4.3</b>	<b>45.84</b>	<b>44.86</b>	<b>769.97</b>	<b>1.02</b>	
B11 Partitions	2.050	205 m <sup>2</sup>	11,968.74	2,453,592	24,535.92		32.56	34.45	712.22	0.95	
B12 Doors	0.110	11 no.	90,954.55	1,000,500	10,005.00		13.28	10.41	961.10	1.28	
<b>B2 FINISHES</b>				<b>6,708,000</b>	<b>67,080.00</b>	<b>8.3</b>	<b>89.02</b>	<b>68.18</b>	<b>983.85</b>	<b>1.31</b>	
B21 Floor Finishes	1.000	100 m <sup>2</sup>	32,580.00	3,258,000	32,580.00		43.23	43.56	748.00	0.99	
B22 Ceiling Finishes	1.000	100 m <sup>2</sup>	12,000.00	1,200,000	12,000.00		15.92	10.00	1,200.00	1.59	
B23 Wall Finishes	4.160	416 m <sup>2</sup>	5,408.65	2,250,000	22,500.00		29.86	14.63	1,538.46	2.04	
<b>B3 FITTINGS &amp; EQUIPMENT</b>				<b>7,215,144</b>	<b>72,151.44</b>	<b>8.9</b>	<b>95.74</b>	<b>104.11</b>	<b>693.05</b>	<b>0.92</b>	
B31 Fittings & Fixtures	1.000	100 m <sup>2</sup>	54,551.44	5,455,144	54,551.44		72.39	68.36	798.03	1.06	
B32 Equipment	1.000	100 m <sup>2</sup>	17,600.00	1,760,000	17,600.00		23.36	35.75	492.31	0.65	
<b>C SERVICES</b>				<b>14,342,000</b>	<b>143,420.00</b>	<b>17.7</b>	<b>190.32</b>	<b>98.50</b>	<b>1,456.04</b>	<b>1.93</b>	
<b>C1 MECHANICAL</b>				<b>10,585,000</b>	<b>105,850.00</b>	<b>13.1</b>	<b>140.46</b>	<b>65.00</b>	<b>1,628.46</b>	<b>2.16</b>	
C11 Mechanical	1.000	100 m <sup>2</sup>	105,850.00	10,585,000	105,850.00		140.46	65.00	1,628.46	2.16	
<b>C2 ELECTRICAL</b>				<b>3,757,000</b>	<b>37,570.00</b>	<b>4.6</b>	<b>49.86</b>	<b>33.50</b>	<b>1,121.49</b>	<b>1.49</b>	
C21 Electrical	1.000	100 m <sup>2</sup>	37,570.00	3,757,000	37,570.00		49.86	33.50	1,121.49	1.49	
<b>NET BUILDING COST - EXCLUDING SITE</b>				<b>68,642,017</b>	<b>686,420.17</b>	<b>84.7</b>	<b>910.88</b>	<b>731.83</b>	<b>937.95</b>	<b>1.24</b>	
<b>D1 SITE WORK</b>				<b>3,518,200</b>	<b>35,182.00</b>	<b>4.3</b>	<b>46.69</b>	<b>50.44</b>	<b>697.50</b>	<b>0.93</b>	
D11 Site Development	0.010	1 sum	3,518,200	3,518,200	3,518,200		46.69	50.44	697.50	0.93	
<b>NET BUILDING COST - INCLUDING SITE</b>				<b>72,160,217</b>	<b>721,602.17</b>	<b>89.1</b>	<b>987.57</b>	<b>782.27</b>	<b>922.45</b>	<b>1.22</b>	
<b>Z1 GENERAL REQUIREMENTS &amp; FEE</b>				<b>8,854,059</b>	<b>88,540.59</b>	<b>4.6</b>	<b>117.49</b>	<b>70.40</b>	<b>1,257.61</b>	<b>1.67</b>	
Z11 General Requirements							64,944.19	86.18	922.45	1.22	
Z12 Fee							2,359,639	31.31	-	N/A	
<b>TOTAL EXCLUDING CONTINGENCIES</b>				<b>81,014,275</b>	<b>810,142.75</b>	<b>100.0</b>	<b>1,075.06</b>	<b>852.67</b>	<b>950.12</b>	<b>1.26</b>	

(1) (2) (3)

Project : CMHC HOUSING STUDY : COMPARISON OF TRADE COSTS Location : SOUTH KOREA		CANADA vs. SOUTH KOREA (IN CAD)						Costing Date: August 2000 Report Date: February 25, 2003 Per GFA of: 100 m <sup>2</sup>				
Trade Description		Canada Wood Frame			South Korea			Seoul Wood Frame		Pusan Wood Frame Total \$ CAD/CAD	1.080 CAD/CAD	Potential Export Opportunity
		Total \$ CAD/CAD	CAD/CAD	Total \$	Traditional: \$/100m <sup>2</sup> CAD/CAD	Total \$ CAD/CAD	Wood Frame Total \$ CAD/CAD					
1. Excavate, Backfill, Gravel	2,138	1.00				6,054	2.83	6,538	3.06			
2. Concrete Steel & Formwork	9,505	1.00				12,121	1.28	13,091	1.38			
3. Dampproofing	902	1.00				3,009	3.34	3,250	3.60			
4a. Rough Carpentry (Materials Only)												
- Lumber	3,335	1.00				4,266	1.28	4,608	1.38			
- Plywood	2,526	1.00				3,002	1.19	3,242	1.28			
- Trusses	2,190	1.00				2,674	1.22	2,888	1.32			
- Stairs	768	1.00				414	0.54	447	0.58			
- Deck	1,717	1.00				1,387	0.81	1,498	0.87			
<b>Subtotal Rough Carpentry (Materials)</b>	<b>10,535</b>	<b>1.00</b>				<b>11,743</b>	<b>1.11</b>	<b>12,682</b>	<b>1.20</b>			
4b. Rough Carpentry (Framing Labour)	7,650	1.00				6,171	0.81	6,664	0.87			
4c. Masonry - Exterior / Interior	0	N/A				0	N/A	0	N/A			
5. Roofing	2,660	1.00				2,787	1.05	3,010	1.13			
6a. Windows (Materials Only)	3,085	1.00				2,354	0.76	2,542	0.82			
6b. Doors	1,260	1.00				1,035	0.82	1,118	0.89			
7. Exterior Cladding/Roof Elements	6,685	1.00				6,882	1.03	7,432	1.11			
8. Plumbing	3,000	1.00				4,326	1.44	4,672	1.56			
9. Electrical	3,350	1.00				4,986	1.49	5,384	1.61			
10. Heating	3,500	1.00				9,720	2.78	10,498	3.00			
11. Specialty Items	3,615	1.00				2,389	0.66	2,580	0.71			
12. Drywall, Insulation, Caulking	6,270	1.00				6,212	0.99	6,709	1.07			
13. Cabinets & Vanities												
- Material	3,450	1.00				4,342	1.26	4,689	1.36			
- Labour	700	1.00				0	0.00	0	0.00			
<b>Subtotal Cabinet &amp; Vanities</b>	<b>4,150</b>	<b>1.00</b>				<b>4,342</b>	<b>1.05</b>	<b>4,689</b>	<b>1.13</b>			
14. Painting, Stain, Lacquer	2,040	1.00				3,345	1.64	3,613	1.77			
15. Interior Finishing												
- Doors	820	1.00				1,123	1.37	1,213	1.48			
- Casing, Trims, Handrails	1,724	1.00				1,935	1.12	2,090	1.21			
- Door Hardware	346	1.00				298	0.86	321	0.93			
- Bathroom Accessories	802	1.00				707	0.88	764	0.95			
<b>Subtotal Interior Finishing</b>	<b>3,692</b>	<b>1.00</b>				<b>4,063</b>	<b>1.10</b>	<b>4,388</b>	<b>1.19</b>			
16. Floor Coverings	4,190	1.00				4,220	1.01	4,557	1.09			
17. Miscellaneous & Fees	7,040	1.00				11,749	1.67	12,689	1.80			
<b>Total Wood Frame House Cost:</b>	<b>85,267</b>	<b>1.00</b>	<b>109,200</b>	<b>1.28</b>	<b>107,506</b>	<b>1.26</b>	<b>116,106</b>	<b>1.36</b>				
<b>Cost per m<sup>2</sup>:</b>	<b>853</b>	<b>1.00</b>	<b>1,092</b>	<b>1.28</b>	<b>1,075</b>	<b>1.26</b>	<b>1,161</b>	<b>1.36</b>				

Project : CMHC HOUSING STUDY		CANADA vs. SOUTH KOREA (IN CAD)						Costing Date: August 2000	
: COMPARISON OF ELEMENTAL COSTS		Currency Rate: 0.0013270 CAD/KRW						Report Date: February 25, 2003	
Location : SOUTH KOREA		Canada			South Korea		Seoul		Pusan
Element		Wood Frame	Total \$ CAD/CAD	Total \$	Traditional: \$/100m2 CAD/CAD	Total \$ CAD/CAD	Wood Frame CAD/CAD	Total \$ CAD/CAD	Wood Frame CAD/CAD
		Total \$ CAD/CAD	1.00						
<b>A SHELL</b>		<b>41,618</b>	<b>1.00</b>		<b>48,997</b>	<b>1.18</b>	<b>52,916</b>	<b>1.27</b>	
<b>A1 SUBSTRUCTURE</b>		<b>3,379</b>	<b>1.00</b>		<b>7,634</b>	<b>2.26</b>	<b>8,245</b>	<b>2.44</b>	
A11 Foundations	1,681	1.00			1,854	1.10	2,002	1.19	
A12 Basement Excavations	1,698	1.00			5,780	3.40	6,243	3.68	
<b>A2 STRUCTURE</b>		<b>7,678</b>	<b>1.00</b>		<b>8,182</b>	<b>1.07</b>	<b>8,837</b>	<b>1.15</b>	
A21 Lowest Floor Construction	1,140	1.00			924	0.81	997	0.87	
A22 Upper Floor Construction	3,208	1.00			3,231	1.01	3,489	1.09	
A23 Roof Construction	3,330	1.00			4,027	1.21	4,350	1.31	
<b>A3 EXTERIOR CLADDING</b>		<b>24,561</b>	<b>1.00</b>		<b>28,801</b>	<b>1.17</b>	<b>31,105</b>	<b>1.27</b>	
A31 Walls Below Grade	6,596	1.00			11,030	1.67	11,913	1.81	
A32 Walls Above Grade	7,010	1.00			8,084	1.15	8,730	1.25	
A33 Windows and Entrances	4,610	1.00			3,586	0.78	3,873	0.84	
A34 Roof Coverings	4,680	1.00			4,561	0.97	4,926	1.05	
A35 Projections	1,665	1.00			1,540	0.93	1,664	1.00	
<b>A4 HOUSE FRAMING (LABOUR)</b>		<b>6,000</b>	<b>1.00</b>		<b>4,379</b>	<b>0.73</b>	<b>4,729</b>	<b>0.79</b>	
A41 House Framing Labour	6,000	1.00			4,379	0.73	4,729	0.79	
<b>B INTERIORS</b>		<b>21,715</b>	<b>1.00</b>		<b>23,060</b>	<b>1.06</b>	<b>24,904</b>	<b>1.15</b>	
<b>B1 PARTITIONS &amp; DOORS</b>		<b>4,486</b>	<b>1.00</b>		<b>4,584</b>	<b>1.02</b>	<b>4,950</b>	<b>1.10</b>	
B11 Partitions	3,445	1.00			3,256	0.95	3,516	1.02	
B12 Doors	1,041	1.00			1,328	1.28	1,434	1.38	
<b>B2 FINISHES</b>		<b>6,818</b>	<b>1.00</b>		<b>8,902</b>	<b>1.31</b>	<b>9,614</b>	<b>1.41</b>	
B21 Floor Finishes	4,356	1.00			4,323	0.99	4,669	1.07	
B22 Ceiling Finishes	1,000	1.00			1,592	1.59	1,720	1.72	
B23 Wall Finishes	1,463	1.00			2,986	2.04	3,225	2.20	
<b>B3 FITTINGS &amp; EQUIPMENT</b>		<b>10,411</b>	<b>1.00</b>		<b>9,574</b>	<b>0.92</b>	<b>10,340</b>	<b>0.99</b>	
B31 Fittings & Fixtures	6,836	1.00			7,239	1.06	7,818	1.14	
B32 Equipment	3,575	1.00			2,336	0.65	2,522	0.71	
<b>C SERVICES</b>		<b>9,850</b>	<b>1.00</b>		<b>19,032</b>	<b>1.93</b>	<b>20,554</b>	<b>2.09</b>	
<b>C1 MECHANICAL</b>		<b>6,500</b>	<b>1.00</b>		<b>14,046</b>	<b>2.16</b>	<b>15,170</b>	<b>2.33</b>	
C11 Mechanical	6,500	1.00			14,046	2.16	15,170	2.33	
<b>C2 ELECTRICAL</b>		<b>3,350</b>	<b>1.00</b>		<b>4,986</b>	<b>1.49</b>	<b>5,384</b>	<b>1.61</b>	
C21 Electrical	3,350	1.00			4,986	1.49	5,384	1.61	
<b>EXCLUDING SITE</b>		<b>73,183</b>	<b>1.00</b>		<b>91,088</b>	<b>1.24</b>	<b>98,375</b>	<b>1.34</b>	
<b>D1 SITE WORK</b>		<b>5,044</b>	<b>1.00</b>		<b>4,669</b>	<b>0.93</b>	<b>5,042</b>	<b>1.00</b>	
D11 Site Development	5,044	1.00			4,669	0.93	5,042	1.00	
<b>INCLUDING SITE</b>		<b>78,227</b>	<b>1.00</b>		<b>95,757</b>	<b>1.22</b>	<b>103,417</b>	<b>1.32</b>	
<b>Z1 GENERAL REQUESTS &amp; FEE</b>		<b>7,040</b>	<b>1.00</b>		<b>11,749</b>	<b>1.67</b>	<b>12,689</b>	<b>1.80</b>	
Z11 General Requirements	7,040	1.00			8,618	1.22	9,308	1.32	
Z12 Fee	0	N/A			3,131	N/A	3,382	N/A	
<b>TOTAL</b>		<b>85,267</b>	<b>1.00</b>	<b>109,200</b>	<b>1.28</b>	<b>107,506</b>	<b>1.26</b>	<b>116,106</b>	<b>1.36</b>
<b>Cost per m2:</b>		<b>853</b>	<b>1.00</b>	<b>1,092</b>	<b>1.28</b>	<b>1,075</b>	<b>1.26</b>	<b>1,161</b>	<b>1.36</b>

Project : CMHC HOUSING STUDY		CANADA vs. SOUTH KOREA		Costing Date: August 2000
Location : SOUTH KOREA				Report Date: February 25, 2003
Element		Canada Wood Frame	South Korea Wood Frame	Per GFA of: 100 m2
<b>A SHELL</b>				South Korea Traditional House
<b>A1 SUBSTRUCTURE</b>		Concrete, plastic weeping tile Full basement	Concrete Full basement	Concrete No basement
A21 Lowest Floor Construction	A11 Foundations	100mm concrete slab on grade 38mm x 235mm K.D. floor joist	100mm concrete slab on grade 38mm x 235mm floor joist	Concrete slab on grade Reinforced concrete slab
A22 Upper Floor Construction	A12 Basement Excavations	Engineered wood trusses	Engineered wood trusses	Pitched wood roof
<b>A3 EXTERIOR CLADDING</b>		200mm concrete w/ asphaltic emulsion 38mm x 140mm K.D. brick/vinyl siding	200mm concrete w/ asphaltic emulsion 38mm x 140mm studs, brick/vinyl siding Vinyl clad wood framed window	N/A Concrete with brick exterior Sliding aluminum sashes
A31 Walls Below Grade	A32 Walls Above Grade	Vinyl clad wood framed window	25-year asphalt shingles	Asphalt shingles
A33 Windows and Entrances	A34 Roof Coverings	25-year asphalt shingles	Pre-finished aluminum soffit, pipe, fascia	Soffit, pipe, fascia
<b>A4 HOUSE FRAMING (LABOUR)</b>		Lump sum framing labour	Lump sum framing labour	
A41 House Framing Labour				
<b>B INTERIORS</b>				
<b>B1 PARTITIONS &amp; DOORS</b>		38mm x 89mm K.D. wood framing Hollow core wood door (painted)	38mm x 89mm studs wood framing Hollow core wood door (painted)	Gypsum board walls Hollow core wood
B11 Partitions	B12 Doors			
<b>B2 FINISHES</b>		35 oz. carpet, sheet vinyl, wood Textured gypsum board Painted gypsum board	35 oz. Carpet, sheet vinyl, wood Textured gypsum board Painted gypsum board	VCT and Porcelain tile Vinyl covering Painting/ tile/ vinyl wall covering
B21 Floor Finishes	B22 Ceiling Finishes			
B23 Wall finishes				
<b>B3 FITTINGS &amp; EQUIPMENT</b>		Melamine w/ arborite counter top Wood burning fireplace	Melamine w/ arborite counter top Wood burning fireplace	Kitchen cabinet & vanities
B31 Fittings & Fixtures	B32 Equipment	No air-conditioning	No air-conditioning	No air-conditioning
<b>C SERVICES</b>		Gas fired forced air heating	Gas fired forced air heating	Panel heating
<b>C1 MECHANICAL</b>	C11 Mechanical	One 4-piece bathroom	One 4-piece bathroom	South Korea standard
<b>C2 ELECTRICAL</b>	C21 Electrical	100 amps main service 110 volts, Canadian standard	South Korea standard	South Korea standard
<b>EXCLUDING SITE</b>				
<b>D1 SITE WORK</b>		Site services incl w/ land price Not included, except deck	Not included, except deck	
D11 Site Development				
<b>INCLUDING SITE</b>				
<b>Z1 GENERAL REQUESTS &amp; FEE</b>				
Z11 General Requirements	Z12 Fee			
<b>TOTAL</b>		<b>GFA: 100 m2</b>	<b>GFA: 100 m2</b>	<b>GFA: 110 m2</b>

## 10. SPAIN

**Hanscom**  
**CMHC HOUSING STUDY**  
**100M2 HOUSE TIMBER FRAMED**  
**SPAIN**

**TRADE SUMMARY**

Costing Date: August 2000  
 Currency Rate: (CAD/ESP) 0.0078510  
 Report Date: February 19, 2003 R

Description	Amount as Priced ESP	Converted to Canadian \$	CAD Amount IN CANADA	Ratios to Canada ESP/CAD CAD/CAD	Remarks
1. Excavate, Backfill, Gravel	436,529 ESP	3,427 CAD	2,138 CAD	204.18	1.60
2. Concrete Steel & Formwork	868,610 ESP	6,819 CAD	9,505 CAD	91.39	0.72
3. Dampproofing	403,440 ESP	3,167 CAD	902 CAD	447.27	3.51
4a. Rough Carpentry (Materials Only)					
- Lumber	895,200 ESP	7,028 CAD	3,335 CAD	268.43	2.11
- Plywood	1,138,847 ESP	8,941 CAD	2,526 CAD	450.92	3.54
- Trusses	1,504,712 ESP	11,813 CAD	2,190 CAD	687.08	5.39
- Stairs	76,350 ESP	599 CAD	768 CAD	99.41	0.78
- Deck	298,812 ESP	2,346 CAD	1,717 CAD	174.08	1.37
<b>Subtotal Rough Carpentry (Materials)</b>	<b>3,913,920 ESP</b>	<b>30,728 CAD</b>	<b>10,535 CAD</b>	<b>371.51</b>	<b>2.92</b>
4b. Rough Carpentry (Framing Labour)					
5. Roofing	1,038,825 ESP	8,156 CAD	7,650 CAD	135.79	1.07
5. Roofing	546,000 ESP	4,287 CAD	2,660 CAD	205.26	1.61
6a. Windows (Materials Only)	436,000 ESP	3,423 CAD	3,085 CAD	141.33	1.11
6b. Doors	239,900 ESP	1,883 CAD	1,260 CAD	190.40	1.49
7. Exterior Cladding/Roof Elements					
652,400 ESP	5,122 CAD	6,685 CAD	97.59	0.77	
434,000 ESP	3,407 CAD	3,000 CAD	144.67	1.14	
668,175 ESP	5,246 CAD	3,350 CAD	199.46	1.57	
375,000 ESP	2,944 CAD	3,500 CAD	107.14	0.84	
10. Heating					
359,000 ESP	2,819 CAD	3,615 CAD	99.31	0.78	
12. Drywall, Insulation, Caulking					
987,271 ESP	7,751 CAD	6,270 CAD	157.46	1.24	
13. Cabinets & Vanities					
- Material	330,000 ESP	2,591 CAD	3,450 CAD	95.65	0.75
- Labour	73,875 ESP	580 CAD	700 CAD	105.54	0.83
<b>Subtotal Cabinet &amp; Vanities</b>	<b>403,875 ESP</b>	<b>3,171 CAD</b>	<b>4,150 CAD</b>	<b>97.32</b>	<b>0.76</b>
14. Painting, Stain, Lacquer					
15. Interior Finishing					
- Doors	660,759 ESP	5,188 CAD	2,040 CAD	323.90	2.54
- Casings, Trims, Handrails	297,000 ESP	2,332 CAD	820 CAD	362.20	2.84
- Door Hardware	221,563 ESP	1,739 CAD	1,724 CAD	128.54	1.01
- Bathroom Accessories	31,400 ESP	247 CAD	346 CAD	90.75	0.71
- Washroom Accessories	257,750 ESP	2,024 CAD	802 CAD	321.38	2.52
<b>Subtotal Interior Finishing</b>	<b>807,713 ESP</b>	<b>6,341 CAD</b>	<b>3,692 CAD</b>	<b>218.79</b>	<b>1.72</b>
16. Floor Coverings					
500,000 ESP	3,926 CAD	4,190 CAD	119.33	0.94	
1,120,484 ESP	8,797 CAD	7,040 CAD	159.16	1.25	
17. Miscellaneous & Fees					
<b>Total Wood Frame House Cost:</b>	<b>14,851,901 ESP</b>	<b>116,602 CAD</b>	<b>85,267 CAD</b>	<b>174.18</b>	<b>1.37</b>
<b>Cost per m2:</b>	<b>148,519.01 ESP</b>	<b>1,166.02 CAD</b>	<b>852.67 CAD</b>	<b>174.18</b>	<b>1.37</b>
	(1)	(2)	(3)		

Project : CMHC HOUSING STUDY		ELEMENTAL COST SUMMARY						Costing Date: August 2000		Report Date: February 19, 2003 R	
Location : SPAIN		Currency Rate: 0.0078510		CAD/ESP				GFA: 100 m2			
Element	Ratio to GFA	Elemental Cost	Elemental Unit rate	ESP	Rate per m2 ESP	%	Converted to Canadian \$	Rate per m2 IN CANADA	ESP/CAD	CAD/CAD	Ratios to Canada
<b>A SHELL</b>				<b>8,274,914</b>	<b>82,749.14</b>	<b>55.7</b>	<b>649.66</b>	<b>416.18</b>	<b>198.83</b>	<b>1.56</b>	
<b>A1 SUBSTRUCTURE</b>				<b>613,220</b>	<b>6,132.20</b>	<b>4.1</b>	<b>48.14</b>	<b>33.79</b>	<b>181.48</b>	<b>1.42</b>	
A11 Foundations	1.000	100 m2	2,406.91	240,691	2,406.91	1.12	18.90	16.81	143.18	1.12	
A12 Basement Excavations	3.000	300 m3	1,241.76	372,529	3,725.29	2.95	29.25	16.98	22.9.39	1.72	
<b>A2 STRUCTURE</b>				<b>3,457,404</b>	<b>34,574.04</b>	<b>23.3</b>	<b>271.44</b>	<b>76.78</b>	<b>450.30</b>	<b>3.54</b>	
A21 Lowest Floor Construction	1.000	100 m2	1,514.34	151,434	1,514.34	1.12	11.89	11.40	132.84	1.04	
A22 Upper Floor Construction	1.000	100 m2	14,679.50	1,467,950	14,679.50	1.12	115.25	32.08	457.59	3.59	
A23 Roof Construction	1.000	100 m2	18,380.20	1,838,020	18,380.20	1.12	144.30	33.30	551.96	4.33	
<b>A3 EXTERIOR CLADDING</b>				<b>3,373,230</b>	<b>33,732.30</b>	<b>22.7</b>	<b>264.83</b>	<b>245.61</b>	<b>137.34</b>	<b>1.08</b>	
A31 Walls Below Grade	0.980	98 m2	8,815.55	863,924	8,639.24	1.12	67.83	65.96	130.98	1.03	
A32 Walls Above Grade	0.980	98 m2	4,615.66	452,334	4,523.34	1.12	35.51	70.10	64.53	0.51	
A33 Windows and Entrances	0.130	13 no.	54,338.46	706,400	7,064.00	1.12	55.46	46.10	153.23	1.20	
A34 Roof Coverings	1.400	140 m2	5,731.22	802,371	8,023.71	1.12	62.99	46.80	171.45	1.35	
A35 Projections	0.250	25 m2	21,928.00	548,200	5,482.00	1.12	43.04	16.65	329.25	2.58	
<b>A4 HOUSE FRAMING (LABOUR)</b>				<b>831,060</b>	<b>8,310.60</b>	<b>5.6</b>	<b>65.6</b>	<b>60.00</b>	<b>138.51</b>	<b>1.09</b>	
A41 House Framing Labour	1.000	100 m2	8,310.60	831,060	8,310.60	1.12	65.25	60.00	138.51	1.09	
<b>B INTERIORS</b>				<b>3,367,895</b>	<b>33,678.95</b>	<b>22.7</b>	<b>264.41</b>	<b>217.15</b>	<b>155.10</b>	<b>1.22</b>	
<b>B1 PARTITIONS &amp; DOORS</b>				<b>900,850</b>	<b>9,008.50</b>	<b>6.1</b>	<b>70.73</b>	<b>44.86</b>	<b>200.81</b>	<b>1.58</b>	
B11 Partitions	2.050	205 m2	2,863.17	586,950	5,869.50	1.12	46.08	34.45	170.38	1.34	
B12 Doors	0.110	11 no.	28,536.36	313,900	3,139.00	1.12	24.64	10.41	301.54	2.37	
<b>B2 FINISHES</b>				<b>1,152,207</b>	<b>11,522.07</b>	<b>7.8</b>	<b>90.46</b>	<b>68.18</b>	<b>168.99</b>	<b>1.33</b>	
B21 Floor Finishes	1.000	100 m2	5,172.07	517,207	5,172.07	1.12	40.61	43.56	118.75	0.93	
B22 Ceiling Finishes	1.000	100 m2	1,400.00	140,000	1,400.00	1.12	10.99	10.00	140.00	1.10	
B23 Wall Finishes	4.160	416 m2	1,189.90	495,000	4,950.00	1.12	38.86	14.63	338.46	2.66	
<b>B3 FITTINGS &amp; EQUIPMENT</b>				<b>1,314,838</b>	<b>13,148.38</b>	<b>8.9</b>	<b>103.23</b>	<b>104.11</b>	<b>126.30</b>	<b>0.99</b>	
B31 Fittings & Fixtures	1.000	100 m2	9,648.38	964,838	9,648.38	1.12	75.75	68.36	141.15	1.11	
B32 Equipment	1.000	100 m2	3,500.00	350,000	3,500.00	1.12	27.48	35.75	97.90	0.77	
<b>C SERVICES</b>				<b>1,477,175</b>	<b>14,771.75</b>	<b>9.9</b>	<b>115.97</b>	<b>98.50</b>	<b>149.97</b>	<b>1.18</b>	
<b>C1 MECHANICAL</b>				<b>809,000</b>	<b>8,090.00</b>	<b>5.4</b>	<b>63.51</b>	<b>65.00</b>	<b>124.46</b>	<b>0.98</b>	
C11 Mechanical	1.000	100 m2	8,090.00	809,000	8,090.00	1.12	63.51	65.00	124.46	0.98	
<b>C2 ELECTRICAL</b>				<b>668,175</b>	<b>6,681.75</b>	<b>4.5</b>	<b>52.46</b>	<b>33.50</b>	<b>199.46</b>	<b>1.57</b>	
C21 Electrical	1.000	100 m2	6,681.75	668,175	6,681.75	1.12	52.46	33.50	199.46	1.57	
<b>NET BUILDING COST - EXCLUDING SITE</b>						<b>13,119.984</b>	<b>88.3</b>	<b>1,030.05</b>	<b>731.83</b>	<b>179.28</b>	<b>1.41</b>
<b>D1 SITE WORK</b>				<b>611,433</b>	<b>6,114.33</b>	<b>4.1</b>	<b>48.00</b>	<b>50.44</b>	<b>121.22</b>	<b>0.95</b>	
D11 Site Development	0.010	1 sum	611,433	611,433	6,114.33	1.12	48.00	50.44	121.22	0.95	
<b>NET BUILDING COST - INCLUDING SITE</b>						<b>13,731.417</b>	<b>92.5</b>	<b>1,078.05</b>	<b>782.27</b>	<b>175.53</b>	<b>1.38</b>
<b>Z1 GENERAL REQUIREMENTS &amp; FEE</b>				<b>1,120,484</b>	<b>11,204.84</b>	<b>9.9</b>	<b>87.97</b>	<b>70.40</b>	<b>159.15</b>	<b>1.25</b>	
Z11 General Requirements	4.0%			549,257	5,492.57	4.0%	43.12	70.40	78.02	0.61	
Z12 Fee	4.0%			571,227	5,712.27	4.0%	44.85	-	N/A	N/A	
<b>TOTAL EXCLUDING CONTINGENCIES</b>						<b>14,851,901</b>	<b>148,519.01</b>	<b>100.0</b>	<b>1,166.02</b>	<b>852.67</b>	<b>174.18</b>
(1)	(2)	(3)									

Project : CMHC HOUSING STUDY Location : SPAIN		CANADA vs. SPAIN (IN CAD)						Costing Date: August 2000 Report Date: February 25, 2003 Per GFA of: 100 m <sup>2</sup>		
Trade Description		Currency Rate: 0.0078510 CAD/ESP			Spain			Barcelona 1,000 Wood Frame		
		Canada Wood Frame Total \$ CAD/CAD	Total \$ CAD/CAD	Traditional: \$/100m <sup>2</sup> CAD/CAD	Wood Frame Total \$ CAD/CAD	Madrid Wood Frame CAD/CAD	Wood Frame Total \$ CAD/CAD	Potential Export Opportunity		
1. Excavate, Backfill, Gravel	2,138	1.00			3,427	1.60	3,427	1.60		
2. Concrete Steel & Formwork	9,505	1.00			6,819	0.72	6,819	0.72		
3. Dampproofing	902	1.00			3,167	3.51	3,167	3.51		
4a. Rough Carpentry (Materials Only)										
- Lumber	3,335	1.00			7,028	2.11	7,028	2.11		
- Plywood	2,526	1.00			8,941	3.54	8,941	3.54		
- Trusses	2,190	1.00			11,813	5.39	11,813	5.39		
- Stairs	768	1.00			599	0.78	599	0.78		
- Deck	1,717	1.00			2,346	1.37	2,346	1.37		
<b>Subtotal Rough Carpentry (Materials)</b>	<b>10,535</b>	<b>1.00</b>			<b>30,728</b>	<b>2.92</b>	<b>30,728</b>	<b>2.92</b>		
4b. Rough Carpentry (Framing Labour)	7,650	1.00			8,156	1.07	8,156	1.07		
4c. Masonry - Exterior / Interior	0	N/A			0	N/A	0	N/A		
5. Roofing	2,660	1.00			4,287	1.61	4,287	1.61		
6a. Windows (Materials Only)	3,085	1.00			3,423	1.11	3,423	1.11		
6b. Doors	1,260	1.00			1,883	1.49	1,883	1.49		
7. Exterior Cladding/Roof Elements	6,685	1.00			5,122	0.77	5,122	0.77		
8. Plumbing	3,000	1.00			3,407	1.14	3,407	1.14		
9. Electrical	3,350	1.00			5,246	1.57	5,246	1.57		
10. Heating	3,500	1.00			2,944	0.84	2,944	0.84		
11. Specialty Items	3,615	1.00			2,819	0.78	2,819	0.78		
12. Drywall, Insulation, Caulking	6,270	1.00			7,751	1.24	7,751	1.24		
13. Cabinets & Vanities										
- Material	3,450	1.00			2,591	0.75	2,591	0.75		
- Labour	700	1.00			580	0.83	580	0.83		
<b>Subtotal Cabinet &amp; Vanities</b>	<b>4,150</b>	<b>1.00</b>			<b>3,171</b>	<b>0.76</b>	<b>3,171</b>	<b>0.76</b>		
14. Painting, Stain, Lacquer	2,040	1.00			5,188	2.54	5,188	2.54		
15. Interior Finishing										
- Doors	820	1.00			2,332	2.84	2,332	2.84		
- Casing, Trims, Handrails	1,724	1.00			1,739	1.01	1,739	1.01		
- Door Hardware	346	1.00			247	0.71	247	0.71		
- Bathroom Accessories	802	1.00			2,024	2.52	2,024	2.52		
<b>Subtotal Interior Finishing</b>	<b>3,692</b>	<b>1.00</b>			<b>6,341</b>	<b>1.72</b>	<b>6,341</b>	<b>1.72</b>		
16. Floor Coverings	4,190	1.00			3,926	0.94	3,926	0.94		
17. Miscellaneous & Fees	7,040	1.00			8,797	1.25	8,797	1.25		
<b>Total Wood Frame House Cost:</b>	<b>85,267</b>	<b>1.00</b>	<b>50,385</b>	<b>0.59</b>	<b>116,602</b>	<b>1.37</b>	<b>116,602</b>	<b>1.37</b>		
<b>Cost per m<sup>2</sup>:</b>	<b>853</b>	<b>1.00</b>	<b>504</b>	<b>0.59</b>	<b>1,166</b>	<b>1.37</b>	<b>1,166</b>	<b>1.37</b>		

Project : CMHC HOUSING STUDY		CANADA vs. SPAIN (IN CAD)						Costing Date: August 2000	
Location : SPAIN		Currency Rate: 0.0078510 CAD/ESP						Report Date: February 25, 2003	
		Canada			Spain			Per GFA of:	
Element		Total \$	CAD/CAD	Wood Frame	Total \$	CAD/CAD	Wood Frame	Madrid	Barcelona
		Total \$	CAD/CAD	Wood Frame	Total \$	CAD/CAD	Wood Frame	Madrid	Barcelona
<b>A SHELL</b>		<b>41,618</b>	<b>1.00</b>		<b>64,966</b>	<b>1.56</b>	<b>64,966</b>	<b>1.56</b>	<b>1.000</b>
<b>A1 SUBSTRUCTURE</b>		<b>3,379</b>	<b>1.00</b>		<b>4,814</b>	<b>1.42</b>	<b>4,814</b>	<b>1.42</b>	<b>Potential Export Opportunity</b>
A11 Foundations	1,681	1.00			1,890	1.12	1,890	1.12	
A12 Basement Excavations	1,698	1.00			2,925	1.72	2,925	1.72	
<b>A2 STRUCTURE</b>		<b>7,678</b>	<b>1.00</b>		<b>27,144</b>	<b>3.54</b>	<b>27,144</b>	<b>3.54</b>	
A21 Lowest Floor Construction	1,140	1.00			1,189	1.04	1,189	1.04	
A22 Upper Floor Construction	3,208	1.00			11,525	3.59	11,525	3.59	
A23 Roof Construction	3,330	1.00			14,430	4.33	14,430	4.33	
<b>A3 EXTERIOR CLADDING</b>		<b>24,561</b>	<b>1.00</b>		<b>26,483</b>	<b>1.08</b>	<b>26,483</b>	<b>1.08</b>	
A31 Walls Below Grade	6,596	1.00			6,783	1.03	6,783	1.03	
A32 Walls Above Grade	7,010	1.00			3,551	0.51	3,551	0.51	
A33 Windows and Entrances	4,610	1.00			5,546	1.20	5,546	1.20	
A34 Roof Coverings	4,680	1.00			6,299	1.35	6,299	1.35	
A35 Projections	1,665	1.00			4,304	2.58	4,304	2.58	
<b>A4 HOUSE FRAMING (LABOUR)</b>		<b>6,000</b>	<b>1.00</b>		<b>6,525</b>	<b>1.09</b>	<b>6,525</b>	<b>1.09</b>	
A41 House Framing Labour	6,000	1.00			6,525	1.09	6,525	1.09	
<b>B INTERIORS</b>		<b>21,715</b>	<b>1.00</b>		<b>26,441</b>	<b>1.22</b>	<b>26,441</b>	<b>1.22</b>	
<b>B1 PARTITIONS &amp; DOORS</b>		<b>4,486</b>	<b>1.00</b>		<b>7,073</b>	<b>1.58</b>	<b>7,073</b>	<b>1.58</b>	
B11 Partitions	3,445	1.00			4,608	1.34	4,608	1.34	
B12 Doors	1,041	1.00			2,464	2.37	2,464	2.37	
<b>B2 FINISHES</b>		<b>6,818</b>	<b>1.00</b>		<b>9,046</b>	<b>1.33</b>	<b>9,046</b>	<b>1.33</b>	
B21 Floor Finishes	4,356	1.00			4,061	0.93	4,061	0.93	
B22 Ceiling Finishes	1,000	1.00			1,099	1.10	1,099	1.10	
B23 Wall Finishes	1,463	1.00			3,886	2.66	3,886	2.66	
<b>B3 FITTINGS &amp; EQUIPMENT</b>		<b>10,411</b>	<b>1.00</b>		<b>10,323</b>	<b>0.99</b>	<b>10,323</b>	<b>0.99</b>	
B31 Fittings & Fixtures	6,836	1.00			7,575	1.11	7,575	1.11	
B32 Equipment	3,575	1.00			2,748	0.77	2,748	0.77	
<b>C SERVICES</b>		<b>9,850</b>	<b>1.00</b>		<b>11,597</b>	<b>1.18</b>	<b>11,597</b>	<b>1.18</b>	
<b>C1 MECHANICAL</b>		<b>6,500</b>	<b>1.00</b>		<b>6,351</b>	<b>0.98</b>	<b>6,351</b>	<b>0.98</b>	
C11 Mechanical	6,500	1.00			6,351	0.98	6,351	0.98	
<b>C2 ELECTRICAL</b>		<b>3,350</b>	<b>1.00</b>		<b>5,246</b>	<b>1.57</b>	<b>5,246</b>	<b>1.57</b>	
C21 Electrical	3,350	1.00			5,246	1.57	5,246	1.57	
<b>EXCLUDING SITE</b>		<b>73,183</b>	<b>1.00</b>		<b>103,005</b>	<b>1.41</b>	<b>103,005</b>	<b>1.41</b>	
<b>D1 SITE WORK</b>		<b>5,044</b>	<b>1.00</b>		<b>4,800</b>	<b>0.95</b>	<b>4,800</b>	<b>0.95</b>	
D11 Site Development	5,044	1.00			4,800	0.95	4,800	0.95	
<b>INCLUDING SITE</b>		<b>78,227</b>	<b>1.00</b>		<b>107,805</b>	<b>1.38</b>	<b>107,805</b>	<b>1.38</b>	
<b>Z1 GENERAL REQUESTS &amp; FEE</b>		<b>7,040</b>	<b>1.00</b>		<b>8,797</b>	<b>1.25</b>	<b>8,797</b>	<b>1.25</b>	
Z11 General Requirements	7,040	1.00			4,312	0.61	4,312	0.61	
Z12 Fee	0	N/A			4,485	N/A	4,485	N/A	
<b>TOTAL</b>		<b>85,267</b>	<b>1.00</b>		<b>50,385</b>	<b>0.59</b>	<b>116,602</b>	<b>1.37</b>	<b>116,602</b>
<b>Cost per m2:</b>		<b>853</b>	<b>1.00</b>		<b>504</b>	<b>0.59</b>	<b>1,166</b>	<b>1.37</b>	<b>1,166</b>

CANADA vs. SPAIN			Costing Date: August 2000
			Report Date: February 25, 2003
			Per GFA of: 100 m <sup>2</sup>
Element	Canada Wood Frame	Spain Wood Frame	Spain Traditional House
<b>A SHELL</b>			
<b>A1 SUBSTRUCTURE</b>	Concrete, plastic weeping tile Full basement	Concrete Full basement	Concrete strip foundations No basement
A21 Lowest Floor Construction	100mm concrete slab on grade 38mm x 235mm K.D. floor joist Engineered wood trusses	100mm concrete slab on grade 38mm x 235mm floor joist Engineered wood trusses	Concrete slab on grade Pre-fabricated concrete slabs Wood structure w/ insulation
A22 Upper Floor Construction			
A23 Roof Construction			
<b>A3 EXTERIOR CLADDING</b>			
A31 Walls Below Grade	200mm concrete w/ asphaltic emulsion 38mm x 140mm K.D. brick/vinyl siding Vinyl clad wood framed window 25-year asphalt shingles	200mm concrete w/ asphaltic emulsion 38mm x 140mm studs, brick/vinyl siding PVC or aluminum double glazed 25-year asphalt shingles	Load bearing concrete block w/ brick PVC or aluminum, double glazed Tiled roof Soffit, pipe, fascia
A32 Walls Above Grade			
A33 Windows and Entrances			
A34 Roof Coverings			
A35 Projections			
<b>A4 HOUSE FRAMING (LABOUR)</b>			
A41 House Framing Labour	Lump sum framing labour	Lump sum framing labour	Lump sum framing labour
<b>B INTERIORS</b>			
<b>B1 PARTITIONS &amp; DOORS</b>			
B11 Partitions	38mm x 89mm K.D. wood framing Hollow core wood door (painted)	38mm x 89mm studs wood framing Hollow core wood door (painted)	Load bearing concrete block wall
B12 Doors			
<b>B2 FINISHES</b>			
B21 Floor Finishes	35 oz. carpet, sheet vinyl, wood Textured gypsum board Painted gypsum board	35 oz. Carpet, sheet vinyl, wood Textured gypsum board Painted gypsum board	Painted suspended ceiling Painted plastered walls
B22 Ceiling Finishes			
B23 Wall finishes			
<b>B3 FITTINGS &amp; EQUIPMENT</b>			
B31 Fittings & Fixtures	Melamine w/ arborite counter top Wood burning fireplace	Melamine w/ arborite counter top Wood burning fireplace	
B32 Equipment	No air-conditioning	No air-conditioning	
<b>C SERVICES</b>			
<b>C1 MECHANICAL</b>	Gas fired forced air heating One 4-piece bathroom	Gas or diesel furnace One 4-piece bathroom	Oil fired boiler for hot water and heating Two bathrooms, kitchen
C11 Mechanical			
<b>C2 ELECTRICAL</b>			
C21 Electrical	100 amps main service 110 volts, Canadian standard	100 amps main service Spain standard	7-7kW low tension standard Spain standard
<b>EXCLUDING SITE</b>			
<b>D1 SITE WORK</b>	Site services incl w/ land price Not included, except deck	Site services incl w/ land price Not included, except deck	Site services incl w/ land price Not included, except deck
<b>Z1 GENERAL REQUESTS &amp; FEE</b>			
Z11 General Requirements			
Z12 Fee			
<b>TOTAL</b>	<b>GFA: 100 m<sup>2</sup></b>	<b>GFA: 100 m<sup>2</sup></b>	<b>GFA: 160 m<sup>2</sup></b>

## 11. UNITED KINGDOM

**Hanscom**  
**CMHC HOUSING STUDY**  
**100M2 HOUSE TIMBER FRAMED**  
**UNITED KINGDOM**

**TRADE SUMMARY**

Costing Date: August 2000  
 Currency Rate: (CAD/GBP) 2.1319090  
 Report Date: January 20, 2003 R

Description	Amount as Priced GBP	Converted to Canadian \$	CAD Amount IN CANADA	Ratios to Canada GBP/CAD	CAD/CAD	Remarks
1. Excavate, Backfill, Gravel	4,939 GBP	10,529 CAD	2,138 CAD	2.31	4.92	
2. Concrete Steel & Formwork	10,994 GBP	23,437 CAD	9,505 CAD	1.16	2.47	
3. Dampproofing	1,269 GBP	2,704 CAD	902 CAD	1.41	3.00	
4a. Rough Carpentry (Materials Only)						
- Lumber	2,556 GBP	5,448 CAD	3,335 CAD	0.77	1.63	
- Plywood	3,944 GBP	8,409 CAD	2,526 CAD	1.56	3.33	
- Trusses	985 GBP	2,100 CAD	2,190 CAD	0.45	0.96	
- Stairs	371 GBP	791 CAD	768 CAD	0.48	1.03	
- Deck	1,052 GBP	2,242 CAD	1,717 CAD	0.61	1.31	
Subtotal Rough Carpentry (Materials)	8,908 GBP	18,990 CAD	10,535 CAD	0.85	1.80	
4b. Rough Carpentry (Framing Labour)						
5. Roofing	7,000 GBP	14,923 CAD	7,650 CAD	0.92	1.95	
2,520 GBP	5,372 CAD	2,660 CAD	0.95	2.02		
6a. Windows (Materials Only)	1,892 GBP	4,034 CAD	3,085 CAD	0.61	1.31	
6b. Doors	1,607 GBP	3,426 CAD	1,260 CAD	1.28	2.72	
7. Exterior Cladding/Roof Elements	7,126 GBP	15,191 CAD	6,685 CAD	1.07	2.27	
8. Plumbing	3,750 GBP	7,995 CAD	3,000 CAD	1.25	2.66	
9. Electrical	6,250 GBP	13,324 CAD	3,350 CAD	1.87	3.98	
10. Heating	5,500 GBP	11,725 CAD	3,500 CAD	1.57	3.35	
11. Specialty Items	1,779 GBP	3,792 CAD	3,615 CAD	0.49	1.05	
12. Drywall, Insulation, Caulking	5,175 GBP	11,033 CAD	6,270 CAD	0.83	1.76	
13. Cabinets & Vanities						
- Material	2,465 GBP	5,255 CAD	3,450 CAD	0.71	1.52	
- Labour	240 GBP	512 CAD	700 CAD	0.34	0.73	
Subtotal Cabinet & Vanities	2,705 GBP	5,767 CAD	4,150 CAD	0.65	1.39	
14. Painting, Stain, Lacquer						
15. Interior Finishing						
- Doors	1,963 GBP	4,185 CAD	820 CAD	2.39	5.10	
- Casings, Trims, Handrails	1,474 GBP	3,142 CAD	1,724 CAD	0.85	1.82	
- Door Hardware	377 GBP	804 CAD	346 CAD	1.09	2.32	
- Bathroom Accessories	589 GBP	1,256 CAD	802 CAD	0.73	1.57	
Subtotal Interior Finishing	4,403 GBP	9,387 CAD	3,692 CAD	1.19	2.54	
16. Floor Coverings	2,730 GBP	5,820 CAD	4,190 CAD	0.65	1.39	
17. Miscellaneous & Fees	12,141 GBP	25,884 CAD	7,040 CAD	1.72	3.68	
<b>Total Wood Frame House Cost:</b>	<b>93,084 GBP</b>	<b>198,447 CAD</b>	<b>85,267 CAD</b>	<b>1.09</b>	<b>2.33</b>	
<b>Cost per m2:</b>	<b>930.84 GBP</b>	<b>1,984.47 CAD</b>	<b>852.67 CAD</b>	<b>1.09</b>	<b>2.33</b>	
	(1)	(2)	(3)			

Project : CMHC HOUSING STUDY		ELEMENTAL COST SUMMARY						Costing Date: August 2000		Report Date: January 20, 2003 R	
Location : UNITED KINGDOM		Currency Rate: 2.1319090 CAD/GBP			Elemental Cost			Converted to Canadian \$ IN CANADA GBP/CAD			GFA: 100 m2
Element	Ratio to GFA	Quantity	Elemental Cost	Elemental GBP	Rate per m2 GBP	%	Canadian \$	Rate per m2	Canadian \$	Rate per m2 GBP/CAD	Ratios to Canada GBP/CAD
<b>A SHELL</b>		100 m2	<b>45,585</b>	<b>45,585</b>	<b>49.0</b>	<b>6.4</b>	<b>971.83</b>	<b>416.18</b>	<b>1.10</b>	<b>2.34</b>	
<b>A1 SUBSTRUCTURE</b>			<b>5,928</b>	<b>59.28</b>	<b>6.4</b>		<b>126.38</b>	<b>33.79</b>	<b>1.75</b>	<b>3.74</b>	
A11 Foundations	1.000	100 m2	16,74	1,674	16.74		35.69	16.81	1.00	2.12	
A12 Basement Excavations	3.000	300 m3	14,18	4,254	42.54		90.69	16.98	2.51	5.34	
<b>A2 STRUCTURE</b>			<b>7,424</b>	<b>74.24</b>	<b>8.0</b>		<b>158.28</b>	<b>76.78</b>	<b>0.97</b>	<b>2.06</b>	
A21 Lowest Floor Construction	1.000	100 m2	12,52	1,252	12.52		26.68	11.40	1.10	2.34	
A22 Upper Floor Construction	1.000	100 m2	35,34	3,534	35.34		75.34	32.08	1.10	2.35	
A23 Roof Construction	1.000	100 m2	26,39	2,639	26.39		56.26	33.30	0.79	1.69	
<b>A3 EXTERIOR CLADDING</b>			<b>25,732</b>	<b>257.32</b>	<b>27.6</b>		<b>548.59</b>	<b>245.61</b>	<b>1.05</b>	<b>2.23</b>	
A31 Walls Below Grade	98	m2	89,90	8,810	88.10		187.83	65.96	1.34	2.85	
A32 Walls Above Grade	98	m2	71,79	7,035	70.35		149.99	70.10	1.00	2.14	
A33 Windows and Entrances	13 no.		289,28	3,761	37.61		80.17	46.10	0.82	1.74	
A34 Roof Coverings	140 m2		30,64	4,290	42.90		91.46	46.80	0.92	1.95	
A35 Projections	25 m2		73,45	1,836	18.36		39.15	16.65	1.10	2.35	
<b>A4 HOUSE FRAMING (LABOUR)</b>			<b>6,500</b>	<b>65.00</b>	<b>7.0</b>		<b>138.57</b>	<b>60.00</b>	<b>1.08</b>	<b>2.31</b>	
A41 House Framing Labour	1.000	100 m2	65,00	6,500	65.00		138.57	60.00	1.08	2.31	
<b>B INTERIORS</b>			<b>17,392</b>	<b>173.92</b>	<b>18.7</b>		<b>370.79</b>	<b>217.15</b>	<b>0.80</b>	<b>1.71</b>	
<b>B1 PARTITIONS &amp; DOORS</b>			<b>5,344</b>	<b>53.44</b>	<b>5.7</b>		<b>113.92</b>	<b>44.86</b>	<b>1.19</b>	<b>2.54</b>	
B11 Partitions	2,050	205 m2	15,24	3,124	31.24		66.60	34.45	0.91	1.93	
B12 Doors	0,110	11 no.	201,82	2,220	22.20		47.33	10.41	2.13	4.55	
<b>B2 FINISHES</b>			<b>5,259</b>	<b>52.59</b>	<b>5.6</b>		<b>112.11</b>	<b>68.18</b>	<b>0.77</b>	<b>1.64</b>	
B21 Floor Finishes	1,000	100 m2	28,62	2,862	28.62		61.02	43.56	0.66	1.40	
B22 Ceiling Finishes	1,000	100 m2	3,22	322	3.22		6.86	10.00	0.32	0.69	
B23 Wall Finishes	4,160	416 m2	4,99	2,075	20.75		44.23	14.63	1.42	3.02	
<b>B3 FITTINGS &amp; EQUIPMENT</b>			<b>6,790</b>	<b>67.90</b>	<b>7.3</b>		<b>144.76</b>	<b>104.11</b>	<b>0.65</b>	<b>1.39</b>	
B31 Fittings & Fixtures	1,000	100 m2	50,40	5,040	50.40		107.45	68.36	0.74	1.57	
B32 Equipment	1,000	100 m2	17,50	1,750	17.50		37.31	35.75	0.49	1.04	
<b>C SERVICES</b>			<b>15,500</b>	<b>155.00</b>	<b>16.7</b>		<b>330.45</b>	<b>98.50</b>	<b>1.57</b>	<b>3.35</b>	
<b>C1 MECHANICAL</b>			<b>9,250</b>	<b>92.50</b>	<b>9.9</b>		<b>197.20</b>	<b>65.00</b>	<b>1.42</b>	<b>3.03</b>	
C11 Mechanical	1,000	100 m2	92,50	9,250	92.50		197.20	65.00	1.42	3.03	
<b>C2 ELECTRICAL</b>			<b>6,250</b>	<b>62.50</b>	<b>6.7</b>		<b>133.24</b>	<b>33.50</b>	<b>1.87</b>	<b>3.98</b>	
C21 Electrical	1,000	100 m2	62,50	6,250	62.50		133.24	33.50	1.87	3.98	
<b>NET BUILDING COST - EXCLUDING SITE</b>			<b>78,477</b>	<b>784.77</b>	<b>84.3</b>		<b>1,673.06</b>	<b>731.83</b>	<b>1.07</b>	<b>2.29</b>	
<b>D1 SITE WORK</b>			<b>2,466</b>	<b>24.66</b>	<b>2.6</b>		<b>52.57</b>	<b>50.44</b>	<b>0.49</b>	<b>1.04</b>	
D11 Site Development	0,010	1 sum	2,466	2,466	24.66		52.57	50.44	0.49	1.04	
<b>NET BUILDING COST - INCLUDING SITE</b>			<b>80,943</b>	<b>809.43</b>	<b>87.0</b>		<b>1,725.63</b>	<b>782.27</b>	<b>1.03</b>	<b>2.21</b>	
<b>Z1 GENERAL REQUIREMENTS &amp; FEE</b>			<b>12,141</b>	<b>121.41</b>	<b>12.141</b>		<b>258.84</b>	<b>70.40</b>	<b>1.72</b>	<b>3.68</b>	
Z11 General Requirements	15.0%		12,141	0	0.00		258.84	70.40	1.72	3.68	
Z12 Fee	0.0%						0.00	-	N/A	N/A	
<b>TOTAL EXCLUDING CONTINGENCIES</b>			<b>93,084</b>	<b>930.84</b>	<b>100.0</b>		<b>1,984.47</b>	<b>852.67</b>	<b>1.09</b>	<b>2.33</b>	

(1) (2) (3)

Project : CMHC HOUSING STUDY		CANADA vs. UNITED KINGDOM (IN CAD)						Costing Date: August 2000	
: COMPARISON OF TRADE COSTS		Currency Rate: 2.1319090 CAD/GBP						Report Date: February 25, 2003	
Location : UNITED KINGDOM		Canada Wood Frame			United Kingdom Traditional: \$/100m2 CAD/CAD			London Wood Frame CAD/CAD	
Trade Description	Total \$ CAD/CAD	Total \$ CAD/CAD	Total \$ CAD/CAD	Total \$ CAD/CAD	Total \$ CAD/CAD	Total \$ CAD/CAD	Total \$ CAD/CAD	Total \$ CAD/CAD	CAD/CAD
1. Excavate, Backfill, Gravel	2,138	1.00			10,529	4.92	8,423	3.94	
2. Concrete Steel & Formwork	9,505	1.00			23,437	2.47	18,750	1.97	
3. Dampproofing	902	1.00			2,704	3.00	2,164	2.40	
4a. Rough Carpentry (Materials Only)									
- Lumber	3,335	1.00			5,448	1.63	4,358	1.31	
- Plywood	2,526	1.00			8,409	3.33	6,727	2.66	
- Trusses	2,190	1.00			2,100	0.96	1,680	0.77	
- Stairs	768	1.00			791	1.03	633	0.82	
- Deck	1,717	1.00			2,242	1.31	1,794	1.04	
<b>Subtotal Rough Carpentry (Materials)</b>	<b>10,535</b>	<b>1.00</b>			<b>18,990</b>	<b>1.80</b>	<b>15,192</b>	<b>1.44</b>	
4b. Rough Carpentry (Framing Labour)	7,650	1.00			14,923	1.95	11,939	1.56	
4c. Masonry - Exterior / Interior	0	N/A			0	N/A	0	N/A	
5. Roofing	2,660	1.00			5,372	2.02	4,298	1.62	
6a. Windows (Materials Only)	3,085	1.00			4,034	1.31	3,227	1.05	
6b. Doors	1,260	1.00			3,426	2.72	2,741	2.18	
7. Exterior Cladding/Roof Elements	6,685	1.00			15,191	2.27	12,153	1.82	
8. Plumbing	3,000	1.00			7,995	2.66	6,396	2.13	
9. Electrical	3,350	1.00			13,324	3.98	10,660	3.18	
10. Heating	3,500	1.00			11,725	3.35	9,380	2.68	
11. Specialty Items	3,615	1.00			3,792	1.05	3,034	0.84	
12. Drywall, Insulation, Caulking	6,270	1.00			11,033	1.76	8,826	1.41	
13. Cabinets & Vanities									
- Material	3,450	1.00			5,255	1.52	4,204	1.22	
- Labour	700	1.00			512	0.73	409	0.58	
<b>Subtotal Cabinet &amp; Vanities</b>	<b>4,150</b>	<b>1.00</b>			<b>5,767</b>	<b>1.39</b>	<b>4,613</b>	<b>1.11</b>	
14. Painting, Stain, Lacquer	2,040	1.00			5,113	2.51	4,090	2.01	
15. Interior Finishing									
- Doors	820	1.00			4,185	5.10	3,348	4.08	
- Casing, Trims, Handrails	1,724	1.00			3,142	1.82	2,513	1.46	
- Door Hardware	346	1.00			804	2.32	643	1.86	
- Bathroom Accessories	802	1.00			1,256	1.57	1,005	1.25	
<b>Subtotal Interior Finishing</b>	<b>3,692</b>	<b>1.00</b>			<b>9,387</b>	<b>2.54</b>	<b>7,509</b>	<b>2.03</b>	
16. Floor Coverings	4,190	1.00			5,820	1.39	4,656	1.11	
17. Miscellaneous & Fees	7,040	1.00			25,884	3.68	20,707	2.94	
<b>Total Wood Frame House Cost:</b>	<b>85,267</b>	<b>1.00</b>	<b>158,242</b>	<b>1.86</b>	<b>198,447</b>	<b>2.33</b>	<b>158,757</b>	<b>1.86</b>	
<b>Cost per m2:</b>	<b>853</b>	<b>1.00</b>	<b>1,582</b>	<b>1.86</b>	<b>1,984</b>	<b>2.33</b>	<b>1,588</b>	<b>1.86</b>	

Project : CMHC HOUSING STUDY		CANADA vs. UNITED KINGDOM (IN CAD)						Costing Date: August 2000		Report Date: February 25, 2003	
Location : UNITED KINGDOM		Currency Rate: 2.1319090 CAD/GBP						Per GFA of: 100 m <sup>2</sup>			
Element		Canada Wood Frame	United Kingdom Traditional: \$/100m <sup>2</sup>	London Wood Frame	Birmingham Wood Frame	Total \$	CAD/CAD	Total \$	CAD/CAD	Potential Export Opportunity	
<b>A SHELL</b>		<b>41,618</b>	<b>1.00</b>	<b>97,183</b>	<b>2.34</b>	<b>77,746</b>	<b>1.87</b>				
<b>A1 SUBSTRUCTURE</b>		<b>3,379</b>	<b>1.00</b>	<b>12,638</b>	<b>3.74</b>	<b>10,110</b>	<b>2.99</b>				
A11 Foundations	1,681	1.00		3,569	2.12	2,855	1.70				
A12 Basement Excavations	1,698	1.00		9,069	5.34	7,255	4.27				
<b>A2 STRUCTURE</b>		<b>7,678</b>	<b>1.00</b>	<b>15,828</b>	<b>2.06</b>	<b>12,662</b>	<b>1.65</b>				
A21 Lowest Floor Construction	1,140	1.00		2,668	2.34	2,135	1.87				
A22 Upper Floor Construction	3,208	1.00		7,534	2.35	6,027	1.88				
A23 Roof Construction	3,330	1.00		5,626	1.69	4,500	1.35				
<b>A3 EXTERIOR CLADDING</b>		<b>24,561</b>	<b>1.00</b>	<b>54,859</b>	<b>2.23</b>	<b>43,887</b>	<b>1.79</b>				
A31 Walls Below Grade	6,596	1.00		18,783	2.85	15,026	2.28				
A32 Walls Above Grade	7,010	1.00		14,999	2.14	11,999	1.71				
A33 Windows and Entrances	4,610	1.00		8,017	1.74	6,414	1.39				
A34 Roof Coverings	4,680	1.00		9,146	1.95	7,317	1.56				
A35 Projections	1,665	1.00		3,915	2.35	3,132	1.88				
<b>A4 HOUSE FRAMING (LABOUR)</b>		<b>6,000</b>	<b>1.00</b>	<b>13,857</b>	<b>2.31</b>	<b>11,086</b>	<b>1.85</b>				
A41 House Framing Labour	6,000	1.00		13,857	2.31	11,086	1.85				
<b>B INTERIORS</b>		<b>21,715</b>	<b>1.00</b>	<b>37,079</b>	<b>1.71</b>	<b>29,663</b>	<b>1.37</b>				
<b>B1 PARTITIONS &amp; DOORS</b>		<b>4,486</b>	<b>1.00</b>	<b>11,392</b>	<b>2.54</b>	<b>9,114</b>	<b>2.03</b>				
B11 Partitions	3,445	1.00		6,660	1.93	5,328	1.55				
B12 Doors	1,041	1.00		4,733	4.55	3,786	3.64				
<b>B2 FINISHES</b>		<b>6,818</b>	<b>1.00</b>	<b>11,211</b>	<b>1.64</b>	<b>8,969</b>	<b>1.32</b>				
B21 Floor Finishes	4,356	1.00		6,102	1.40	4,881	1.12				
B22 Ceiling Finishes	1,000	1.00		686	0.69	549	0.55				
B23 Wall Finishes	1,463	1.00		4,423	3.02	3,538	2.42				
<b>B3 FITTINGS &amp; EQUIPMENT</b>		<b>10,411</b>	<b>1.00</b>	<b>14,476</b>	<b>1.39</b>	<b>11,580</b>	<b>1.11</b>				
B31 Fittings & Fixtures	6,836	1.00		10,745	1.57	8,596	1.26				
B32 Equipment	3,575	1.00		3,731	1.04	2,985	0.83				
<b>C SERVICES</b>		<b>9,850</b>	<b>1.00</b>	<b>33,045</b>	<b>3.35</b>	<b>26,436</b>	<b>2.68</b>				
<b>C1 MECHANICAL</b>		<b>6,500</b>	<b>1.00</b>	<b>19,720</b>	<b>3.03</b>	<b>15,776</b>	<b>2.43</b>				
C11 Mechanical	6,500	1.00		19,720	3.03	15,776	2.43				
<b>C2 ELECTRICAL</b>		<b>3,350</b>	<b>1.00</b>	<b>13,324</b>	<b>3.98</b>	<b>10,660</b>	<b>3.18</b>				
C21 Electrical	3,350	1.00		13,324	3.98	10,660	3.18				
<b>EXCLUDING SITE</b>		<b>73,183</b>	<b>1.00</b>	<b>167,306</b>	<b>2.29</b>	<b>133,845</b>	<b>1.83</b>				
<b>D1 SITE WORK</b>		<b>5,044</b>	<b>1.00</b>	<b>5,257</b>	<b>1.04</b>	<b>4,206</b>	<b>0.83</b>				
D11 Site Development	5,044	1.00		5,257	1.04	4,206	0.83				
<b>INCLUDING SITE</b>		<b>78,227</b>	<b>1.00</b>	<b>172,563</b>	<b>2.21</b>	<b>138,050</b>	<b>1.76</b>				
<b>Z1 GENERAL REQUESTS &amp; FEE</b>		<b>7,040</b>	<b>1.00</b>	<b>25,884</b>	<b>3.68</b>	<b>20,708</b>	<b>2.94</b>				
Z11 General Requirements	7,040	1.00	N/A	25,884	3.68	20,708	2.94				
Z12 Fee	0			0	N/A	0	N/A				
<b>TOTAL</b>		<b>85,267</b>	<b>1.00</b>	<b>158,242</b>	<b>1.86</b>	<b>158,758</b>	<b>1.86</b>				
<b>Cost per m<sup>2</sup>:</b>		<b>853</b>	<b>1.00</b>	<b>1,582</b>	<b>1.86</b>	<b>1,984</b>	<b>1.86</b>				
						<b>1,588</b>	<b>1.86</b>				

CANADA vs. UNITED KINGDOM			Costing Date: August 2000	Report Date: February 25, 2003
Element	Canada Wood Frame	United Kingdom Wood Frame	Per GFA of: 100 m2	United Kingdom Traditional House
<b>A SHELL</b>				
<b>A1 SUBSTRUCTURE</b>	Concrete, plastic weeping tile Full basement	Concrete, clay weeping tiles Full basement		Concrete No basement
A21 Lowest Floor Construction	100mm concrete slab on grade 38mm x 235mm K.D. floor joist	150mm concrete slab on grade 50mm x 225 mm floor joist (treated)	150 mm concrete slab on grade 38mm x 175mm floor joist (treated)	
A22 Upper Floor Construction	Engineered wood trusses	22.5 degree trussed rafter	35 degree - 50 x 100mm rafters	
<b>A3 EXTERIOR CLADDING</b>		Polymer d.p.c.		Not normal practice in U.K. Masonry cavity wall with insulation
A31 Walls Below Grade	200mm concrete w/ asphaltic emulsion	200mm concrete w/ polymer d.p.c.		Hardwood double glazed casement window
A32 Walls Above Grade	38mm x 140mm K.D. brick/vinyl siding	38mm x 140mm wide, brick veneer		Interlocking concrete tiles
A33 Windows and Entrances	Vinyl clad wood framed window	Softwood single glazed windows		PVC eaves trough and down pipe
A34 Roof Coverings	25-year asphalt shingles	Cement slates		
A35 Projections	Pre-finished aluminum soffit, pipe, fascia	PVC eaves trough and down pipe		
<b>A4 HOUSE FRAMING (LABOUR)</b>		Lump sum framing labour		Labour with items priced
A41 House Framing Labour	Lump sum framing labour			
<b>B INTERIORS</b>				
<b>B1 PARTITIONS &amp; DOORS</b>				
B11 Partitions	38mm x 89mm K.D. wood framing	38mm x 100mm treated wood	L/w concrete block, 75mm wood	
B12 Doors	Hollow core wood door (painted)	Painted softwood door	Softwood standard glazed door	
<b>B2 FINISHES</b>				
B21 Floor Finishes	35 oz. carpet, sheet vinyl, wood	Carpet, sheet vinyl, wood	Ceramic tile kitchen & baths	
B22 Ceiling Finishes	Textured gypsum board	Plasterboard w/ skim coat plaster	Plasterboard w/ skim coat plaster	
B23 Wall finishes	Painted gypsum board	Plasterboard w/ skim coat plaster	Plasterboard w/ skim coat plaster	
<b>B3 FITTINGS &amp; EQUIPMENT</b>				
B31 Fittings & Fixtures	Melamine w/ arborite counter top	Wood burning fireplace	Kitchen cabinets w/ plastic laminate	
B32 Equipment	Wood burning fireplace	No air-conditioning	Gas fireplace	
<b>C SERVICES</b>				No air-conditioning
<b>C1 MECHANICAL</b>	Gas fired forced air heating	Gas fired hot water radiator	Gas fired hot water radiator	
C11 Mechanical	One 4-piece bathroom	One 4-piece bathroom	2 1/2 bathrooms	
<b>C2 ELECTRICAL</b>				
C21 Electrical	100 amps main service	220 volts, UK standard	220 volts UK standard	
	110 volts, Canadian standard			
<b>EXCLUDING SITE</b>				
<b>D1 SITE WORK</b>				
D11 Site Development	Site services incl w/ land price	Site services excluded		
	Not included, except deck	Treated softwood deck	Deck unusual feature in UK	
<b>Z1 GENERAL REQUESTS &amp; FEE</b>				
Z11 General Requirements				
Z12 Fee				
<b>TOTAL</b>	<b>GFA: 100 m2</b>	<b>GFA: 100 m2</b>	<b>GFA: 122 m2</b>	<b>GFA: 122 m2</b>

## 12. UNITED STATES OF AMERICA



**CMHC HOUSING STUDY  
100M2 HOUSE TIMBER FRAMED  
UNITED STATES OF AMERICA**

**TRADE SUMMARY**

Costing Date: August 2000  
Currency Rate: (CAD/USD) 1.47/15000  
Report Date: January 11, 2003 R

Description	Amount as Priced USD	Converted to Canadian \$	CAD Amount IN CANADA	Ratios to Canada USD/CAD CAD/CAD	Remarks
1. Excavate, Backfill, Gravel	3,806 USD	5,600 CAD	2,138 CAD	1.78	2.62
2. Concrete Steel & Formwork	10,478 USD	15,419 CAD	9,505 CAD	1.10	1.62
3. Dampproofing	1,524 USD	2,243 CAD	902 CAD	1.69	2.49
4a. Rough Carpentry (Materials Only)					
- Lumber	2,342 USD	3,446 CAD	3,335 CAD	0.70	1.03
- Plywood	1,350 USD	1,987 CAD	2,526 CAD	0.53	0.79
- Trusses	1,785 USD	2,626 CAD	2,190 CAD	0.81	1.20
- Stairs	198 USD	292 CAD	768 CAD	0.26	0.38
- Deck	637 USD	937 CAD	1,717 CAD	0.37	0.55
<b>Subtotal Rough Carpentry (Materials)</b>	<b>6,312 USD</b>	<b>9,288 CAD</b>	<b>10,535 CAD</b>	<b>0.60</b>	<b>0.88</b>
4b. Rough Carpentry (Framing Labour)	5,925 USD	8,719 CAD	7,650 CAD	0.77	1.14
5. Roofing	2,026 USD	2,981 CAD	2,660 CAD	0.76	1.12
6a. Windows (Materials Only)	3,033 USD	4,463 CAD	3,085 CAD	0.98	1.45
6b. Doors	1,206 USD	1,775 CAD	1,260 CAD	0.96	1.41
7. Exterior Cladding/Roof Elements	5,247 USD	7,721 CAD	6,685 CAD	0.78	1.15
8. Plumbing	3,373 USD	4,963 CAD	3,000 CAD	1.12	1.65
9. Electrical	4,425 USD	6,511 CAD	3,350 CAD	1.32	1.94
10. Heating	5,423 USD	7,980 CAD	3,500 CAD	1.55	2.28
11. Specialty Items	2,560 USD	3,767 CAD	3,615 CAD	0.71	1.04
12. Drywall, Insulation, Caulking	5,024 USD	7,393 CAD	6,270 CAD	0.80	1.18
13. Cabinets & Vanities					
- Material	1,580 USD	2,325 CAD	3,450 CAD	0.46	0.67
- Labour	190 USD	280 CAD	700 CAD	0.27	0.40
<b>Subtotal Cabinet &amp; Vanities</b>	<b>1,770 USD</b>	<b>2,605 CAD</b>	<b>4,150 CAD</b>	<b>0.43</b>	<b>0.63</b>
14. Painting, Stain, Lacquer	1,746 USD	2,569 CAD	2,040 CAD	0.86	1.26
15. Interior Finishing					
- Doors	1,642 USD	2,416 CAD	820 CAD	2.00	2.95
- Casings, Trims, Handrails	1,445 USD	2,127 CAD	1,724 CAD	0.84	1.23
- Door Hardware	348 USD	512 CAD	346 CAD	1.01	1.48
- Bathroom Accessories	993 USD	1,460 CAD	802 CAD	1.24	1.82
<b>Subtotal Interior Finishing</b>	<b>4,427 USD</b>	<b>6,515 CAD</b>	<b>3,692 CAD</b>	<b>1.20</b>	<b>1.76</b>
16. Floor Coverings	3,372 USD	4,962 CAD	4,190 CAD	0.80	1.18
17. Miscellaneous & Fees	7,168 USD	10,548 CAD	7,040 CAD	1.02	1.50
<b>Total Wood Frame House Cost:</b>	<b>78,846 USD</b>	<b>116,022 CAD</b>	<b>85,267 CAD</b>	<b>0.92</b>	<b>1.36</b>
<b>Cost per m2:</b>	<b>783.46 USD</b>	<b>1,160.22 CAD</b>	<b>852.67 CAD</b>	<b>0.92</b>	<b>1.36</b>
	(1)	(2)	(3)		

Project : CMHC HOUSING STUDY		ELEMENTAL COST SUMMARY						Costing Date: August 2000		Report Date: January 11, 2003 R	
Location : UNITED STATES OF AMERICA		Currency Rate: 1.4715000 CAD/USD						GFA: 100 m <sup>2</sup>		GFA: 100 m <sup>2</sup>	
Element	Ratio to GFA	Elemental Cost	Elemental USD	Rate per m <sup>2</sup> USD	%	Converted to Canadian \$	Rate per m <sup>2</sup> IN CANADA	USD/CAD	Ratios to Canada	CAD/CAD	
<b>A SHELL</b>											
<b>A1 SUBSTRUCTURE</b>											
A11 Foundations	1.000	100 m <sup>2</sup>	21.16	5,462	6.9	80.38	33.79	1.62	2.38	0.90	
A12 Basement Excavations	3.000	300 m <sup>3</sup>	11.15	2,116	21.16	31.14	16.81	1.26	1.85	416.18	
A13 Roof Construction	1.000	100 m <sup>2</sup>	24.01	3,346	33.46	49.24	16.98	1.97	2.90	552.82	
<b>A2 STRUCTURE</b>											
A21 Lowest Floor Construction	1.000	100 m <sup>2</sup>	11.59	5,251	6.7	77.28	76.78	0.68	1.01	1.33	
A22 Upper Floor Construction	1.000	100 m <sup>2</sup>	16.91	1,159	11.59	17.06	11.40	1.02	1.50	416.18	
A23 Roof Construction	1.000	100 m <sup>2</sup>	24.01	1,691	16.91	24.88	32.08	0.53	0.78	33.30	
<b>A3 EXTERIOR CLADDING</b>											
A31 Walls Below Grade	0.980	98 m <sup>2</sup>	81.04	22,804	28.9	335.57	245.61	0.93	1.37	65.96	
A32 Walls Above Grade	0.980	98 m <sup>2</sup>	50.96	7,942	79.42	73.48	70.10	0.71	1.77	49.94	
A33 Windows and Entrances	0.130	13 no.	348.05	4,525	45.25	66.58	46.10	0.98	1.05	45.25	
A34 Roof Coverings	1.400	140 m <sup>2</sup>	25.76	3,607	36.07	53.07	46.80	0.77	1.44	17.37	
A35 Projections	0.250	25 m <sup>2</sup>	69.49	1,737	17.37	25.56	16.65	1.04	1.13	40.50	
<b>A4 HOUSE FRAMING (LABOUR)</b>											
A41 House Framing Labour	1.000	100 m <sup>2</sup>	40.50	4,050	5.1	59.60	60.00	0.68	0.99	59.60	
<b>B INTERIORS</b>											
<b>B1 PARTITIONS &amp; DOORS</b>											
B11 Partitions	2.050	205 m <sup>2</sup>	13.88	4,719	6.0	69.44	44.86	1.05	1.55	41.87	
B12 Doors	0.110	11 no.	170.32	1,873	18.73	27.57	34.45	0.83	1.22	10.41	
<b>B2 FINISHES</b>											
B21 Floor Finishes	1.000	100 m <sup>2</sup>	34.53	5,552	7.0	81.69	68.18	0.81	1.20	50.80	
B22 Ceiling Finishes	1.000	100 m <sup>2</sup>	5.51	3,453	34.53	8.11	43.56	0.79	1.17	36.57	
B23 Wall Finishes	4.160	416 m <sup>2</sup>	3.72	1,548	5.51	22.78	10.00	0.55	0.81	129.43	
<b>B3 FITTINGS &amp; EQUIPMENT</b>											
B31 Fittings & Fixtures	1.000	100 m <sup>2</sup>	44.13	6,898	8.7	101.50	104.11	0.66	0.97	64.94	
B32 Equipment	1.000	100 m <sup>2</sup>	24.85	4,413	44.13	68.36	68.36	0.65	0.95	24.85	
<b>C SERVICES</b>											
<b>C1 MECHANICAL</b>											
C11 Mechanical	1.000	100 m <sup>2</sup>	87.96	13,221	16.8	194.55	98.50	1.34	1.98	129.43	
<b>C2 ELECTRICAL</b>											
C21 Electrical	1.000	100 m <sup>2</sup>	44.25	4,425	44.25	65.11	33.50	1.35	1.99	44.25	
<b>NET BUILDING COST - EXCLUDING SITE</b>											
D1 SITE WORK											
D11 Site Development	0.010	1 sum	3,720	3,720	4.7	54.74	50.44	0.74	1.09	54.74	
<b>NET BUILDING COST - INCLUDING SITE</b>											
Z1 GENERAL REQUIREMENTS & FEE											
Z11 General Requirements	10.0%										
Z12 Fee	0.0%										
<b>TOTAL EXCLUDING CONTINGENCIES</b>											
(1)											
(2)											
(3)											

Project : CMHC HOUSING STUDY		CANADA vs. UNITED STATES OF AMERICA (IN CAD)						Costing Date: August 2000	
: COMPARISON OF TRADE COSTS		Currency Rate: 1.4715000 CAD/USD						Report Date: February 25, 2003	
Location : UNITED STATES OF AMERICA		Canada			USA			Atlanta	
Trade Description		Wood Frame			Wood Frame			Chicago	
Total \$		CAD/CAD	Total \$	CAD/CAD	Total \$	CAD/CAD	Total \$	CAD/CAD	Potential Export Opportunity
1. Excavate, Backfill, Gravel	2,138	1.00			5,600	2.62	6,720	3.14	
2. Concrete Steel & Formwork	9,505	1.00			15,419	1.62	18,503	1.95	
3. Dampproofing	902	1.00			2,243	2.49	2,692	2.98	
4a. Rough Carpentry (Materials Only)									
- Lumber	3,335	1.00			3,446	1.03	4,136	1.24	
- Plywood	2,526	1.00			1,987	0.79	2,385	0.94	
- Trusses	2,190	1.00			2,626	1.20	3,151	1.44	
- Stairs	768	1.00			292	0.38	350	0.46	
- Deck	1,717	1.00			937	0.55	1,125	0.66	
<b>Subtotal Rough Carpentry (Materials)</b>	<b>10,535</b>	<b>1.00</b>			<b>9,288</b>	<b>0.88</b>	<b>11,146</b>	<b>1.06</b>	
4b. Rough Carpentry (Framing Labour)	7,650	1.00			8,719	1.14	10,462	1.37	
4c. Masonry - Exterior / Interior	0	N/A	0		0	N/A	0	N/A	
5. Roofing	2,660	1.00			2,981	1.12	3,577	1.34	
6a. Windows (Materials Only)	3,085	1.00			4,463	1.45	5,356	1.74	
6b. Doors	1,260	1.00			1,775	1.41	2,130	1.69	
7. Exterior Cladding/Roof Elements	6,685	1.00			7,721	1.15	9,265	1.39	
8. Plumbing	3,000	1.00			4,963	1.65	5,956	1.99	
9. Electrical	3,350	1.00			6,511	1.94	7,814	2.33	
10. Heating	3,500	1.00			7,980	2.28	9,576	2.74	
11. Specialty Items	3,615	1.00			3,767	1.04	4,521	1.25	
12. Drywall, Insulation, Caulking	6,270	1.00			7,393	1.18	8,872	1.41	
13. Cabinets & Vanities									
- Material	3,450	1.00			2,325	0.67	2,790	0.81	
- Labour	700	1.00			280	0.40	336	0.48	
<b>Subtotal Cabinet &amp; Vanities</b>	<b>4,150</b>	<b>1.00</b>			<b>2,605</b>	<b>0.63</b>	<b>3,125</b>	<b>0.75</b>	
14. Painting, Stain, Lacquer	2,040	1.00			2,569	1.26	3,083	1.51	
15. Interior Finishing									
- Doors	820	1.00			2,416	2.95	2,899	3.54	
- Casing, Trims, Handrails	1,724	1.00			2,127	1.23	2,552	1.48	
- Door Hardware	346	1.00			512	1.48	614	1.77	
- Bathroom Accessories	802	1.00			1,460	1.82	1,753	2.19	
<b>Subtotal Interior Finishing</b>	<b>3,692</b>	<b>1.00</b>			<b>6,515</b>	<b>1.76</b>	<b>7,818</b>	<b>2.12</b>	
16. Floor Coverings	4,190	1.00			4,962	1.18	5,954	1.42	
17. Miscellaneous & Fees	7,040	1.00			10,548	1.50	12,657	1.80	
<b>Total Wood Frame House Cost:</b>	<b>85,267</b>	<b>1.00</b>	<b>93,253</b>	<b>1.09</b>	<b>116,022</b>	<b>1.36</b>	<b>139,226</b>	<b>1.63</b>	
<b>Cost per m<sup>2</sup>:</b>	<b>853</b>	<b>1.00</b>	<b>933</b>	<b>1.09</b>	<b>1,160</b>	<b>1.36</b>	<b>1,392</b>	<b>1.63</b>	

Project : CMHC HOUSING STUDY		CANADA vs. UNITED STATES OF AMERICA (IN CAD)				Costing Date: August 2000	
: COMPARISON OF ELEMENTAL COSTS		Currency Rate: 1.4715000 CAD/USD				Report Date: February 25, 2003	
Location : UNITED STATES OF AMERICA		Canada		USA		Atlanta	
Element		Wood Frame	Total \$ CAD/CAD	Traditional: \$/100m2	Total \$ CAD/CAD	Wood Frame	Chicago 1.200 Wood Frame
	Total \$ CAD/CAD	Total \$	CAD/CAD	Total \$ CAD/CAD	Total \$ CAD/CAD	CAD/CAD	Potential Export Opportunity
<b>A SHELL</b>		<b>41,618</b>	<b>1.00</b>		<b>55,282</b>	<b>1.33</b>	<b>66,338</b>
<b>A1 SUBSTRUCTURE</b>		<b>3,379</b>	<b>1.00</b>		<b>8,038</b>	<b>2.38</b>	<b>9,646</b>
A11 Foundations	1,681	1.00		3,114	1.85	3,737	<b>2.85</b>
A12 Basement Excavations	1,698	1.00		4,924	2.90	5,909	2.22
<b>A2 STRUCTURE</b>		<b>7,678</b>	<b>1.00</b>		<b>7,728</b>	<b>1.01</b>	<b>9,273</b>
A21 Lowest Floor Construction	1,140	1.00		1,706	1.50	2,047	1.21
A22 Upper Floor Construction	3,208	1.00		2,488	0.78	2,986	0.93
A23 Roof Construction	3,330	1.00		3,533	1.06	4,240	1.27
<b>A3 EXTERIOR CLADDING</b>		<b>24,561</b>	<b>1.00</b>		<b>33,557</b>	<b>1.37</b>	<b>40,268</b>
A31 Walls Below Grade	6,596	1.00		11,687	1.77	14,024	<b>1.64</b>
A32 Walls Above Grade	7,010	1.00		7,348	1.05	8,818	2.13
A33 Windows and Entrances	4,610	1.00		6,658	1.44	7,990	1.26
A34 Roof Coverings	4,680	1.00		5,307	1.13	6,369	1.73
A35 Projections	1,665	1.00		2,556	1.54	3,067	1.36
<b>A4 HOUSE FRAMING (LABOUR)</b>		<b>6,000</b>	<b>1.00</b>		<b>5,960</b>	<b>0.99</b>	<b>7,151</b>
A41 House Framing Labour	6,000	1.00		5,960	0.99	7,151	1.19
<b>B INTERIORS</b>		<b>21,715</b>	<b>1.00</b>		<b>25,263</b>	<b>1.16</b>	<b>30,316</b>
<b>B1 PARTITIONS &amp; DOORS</b>		<b>4,486</b>	<b>1.00</b>		<b>6,944</b>	<b>1.55</b>	<b>8,333</b>
B11 Partitions	3,445	1.00		4,187	1.22	5,024	<b>1.86</b>
B12 Doors	1,041	1.00		2,757	2.65	3,308	1.46
<b>B2 FINISHES</b>		<b>6,818</b>	<b>1.00</b>		<b>8,169</b>	<b>1.20</b>	<b>9,803</b>
B21 Floor Finishes	4,356	1.00		5,080	1.17	6,096	<b>1.44</b>
B22 Ceiling Finishes	1,000	1.00		811	0.81	973	1.40
B23 Wall Finishes	1,463	1.00		2,278	1.56	2,733	0.97
<b>B3 FITTINGS &amp; EQUIPMENT</b>		<b>10,411</b>	<b>1.00</b>		<b>10,150</b>	<b>0.97</b>	<b>12,181</b>
B31 Fittings & Fixtures	6,836	1.00		6,494	0.95	7,793	1.17
B32 Equipment	3,575	1.00		3,657	1.02	4,388	1.23
<b>C SERVICES</b>		<b>9,850</b>	<b>1.00</b>		<b>19,455</b>	<b>1.98</b>	<b>23,346</b>
<b>C1 MECHANICAL</b>		<b>6,500</b>	<b>1.00</b>		<b>12,943</b>	<b>1.99</b>	<b>15,532</b>
C11 Mechanical	6,500	1.00		12,943	1.99	15,532	<b>2.39</b>
<b>C2 ELECTRICAL</b>		<b>3,350</b>	<b>1.00</b>		<b>6,511</b>	<b>1.94</b>	<b>7,814</b>
C21 Electrical	3,350	1.00		6,511	1.94	7,814	2.33
<b>EXCLUDING SITE</b>		<b>73,183</b>	<b>1.00</b>		<b>100,000</b>	<b>1.37</b>	<b>120,000</b>
<b>D1 SITE WORK</b>		<b>5,044</b>	<b>1.00</b>		<b>5,474</b>	<b>1.09</b>	<b>6,569</b>
D11 Site Development	5,044	1.00		5,474	1.09	6,569	1.30
<b>INCLUDING SITE</b>		<b>78,227</b>	<b>1.00</b>		<b>105,474</b>	<b>1.35</b>	<b>126,569</b>
<b>Z1 GENERAL REQUESTS &amp; FEE</b>		<b>7,040</b>	<b>1.00</b>		<b>10,547</b>	<b>1.50</b>	<b>12,657</b>
Z11 General Requirements	7,040	1.00	N/A	10,547	1.50	12,657	1.80
Z12 Fee	0			0	N/A	0	N/A
<b>TOTAL</b>		<b>85,267</b>	<b>1.00</b>	<b>93,253</b>	<b>1.09</b>	<b>116,021</b>	<b>1.36</b>
<b>Cost per m2:</b>		<b>853</b>	<b>1.00</b>	<b>933</b>	<b>1.09</b>	<b>1,160</b>	<b>1.36</b>
							<b>1,392</b>
							<b>1.63</b>

Project : CMHC HOUSING STUDY		CANADA vs. UNITED STATES OF AMERICA		Costing Date: August 2000
Location : UNITED STATES OF AMERICA				Report Date: February 25, 2003
Element		Canada Wood Frame	United States Of America Wood Frame	Per GFA of: 100 m2
<b>A SHELL</b>				United States Of America Traditional House
<b>A1 SUBSTRUCTURE</b>		Concrete, plastic weeping tile Full basement	Concrete, plastic weeping tile Full basement	Concrete, plastic weeping tile No basement
A21 Foundations	A11 Foundations	100mm concrete slab on grade 38mm x 235mm K.D. floor joist Engineered wood trusses	75mm concrete slab on grade 38mm x 235 mm K.D. floor joist Engineered wood trusses	Concrete slab on grade 38mm x 235mm K.D. floor joist Custom wood trusses
A22 Upper Floor Construction	A12 Basement Excavations			
A23 Roof Construction	A13 Roof Coverings			
<b>A3 EXTERIOR CLADDING</b>		200mm concrete w/ asphaltic emulsion 38mm x 140mm K.D. brick/vinyl siding Vinyl clad wood framed window 25-year asphalt shingles	200mm concrete w/ asphaltic emulsion 38mm x 140mm K.D. brick/vinyl siding Vinyl clad wood framed window 25-year asphalt shingles	200mm concrete w/ asphaltic emulsion 38mm x 140mm K.D. stucco/vinyl siding Hollow metal framed glass windows Asphalt shingles Pre-finished aluminum soffit fascia
A31 Walls Below Grade	A32 Walls Above Grade			
A33 Windows and Entrances	A34 Roof Coverings			
A35 Projections	A36 Projections			
<b>A4 HOUSE FRAMING (LABOUR)</b>		Pre-finished aluminum soffit, pipe, fascia Lump sum framing labour	Lump sum framing labour	
A41 House Framing Labour	A42 House Framing Labour			
<b>B INTERIORS</b>				
<b>B1 PARTITIONS &amp; DOORS</b>		38mm x 89mm K.D. wood framing Hollow core wood door (painted)	38mm x 89mm K.D. wood framing Hollow core wood door (painted)	38mm x 89mm K.D. wood framing Solid core wood door
B11 Partitions	B12 Doors			
<b>B2 FINISHES</b>		35 oz. carpet, sheet vinyl, wood Textured gypsum board Painted gypsum board	32 oz. Carpet, sheet vinyl, wood Textured gypsum board Painted gypsum board	Carpet, sheet vinyl Textured gypsum board Painted gypsum board
B21 Floor Finishes	B22 Ceiling Finishes			
B23 Wall finishes	B24 Wall finishes			
<b>B3 FITTINGS &amp; EQUIPMENT</b>		Melamine w/ arborite counter top Wood burning fireplace	Melamine w/ arborite counter top Wood burning fireplace	Standard kitchen cabinets, vanities Fireplace, mantle, chimney
B31 Fittings & Fixtures	B32 Equipment	No air-conditioning	No air-conditioning	Electric air-conditioning
<b>C SERVICES</b>		Gas fired forced air heating One 4-piece bathroom	Gas fired forced air heating One 4-piece bathroom	Gas heating Typical residential fixture
<b>C1 MECHANICAL</b>	C11 Mechanical	100 amps main service	100 amps main service	Typical residential installation
<b>C2 ELECTRICAL</b>	C21 Electrical	110 volts, Canadian standard	110 volts, US standard	
<b>EXCLUDING SITE</b>				
<b>D1 SITE WORK</b>		Site services incl w/ land price Not included, except deck	Site services incl w/ land price Not included, except deck	Not included, except deck
D11 Site Development	D12 Site Development			
<b>Z1 GENERAL REQUESTS &amp; FEE</b>				
Z11 General Requirements	Z12 Fee			
<b>TOTAL</b>		<b>GFA: 100 m2</b>	<b>GFA: 100 m2</b>	<b>GFA: 169 m2</b>

# APPENDIX A

A - Base Case 'Bill of Quantities'; Plans & Specification

**CANADA MORTGAGE AND HOUSING CORPORATION**  
**Request for Proposal - TABLE OF CONTENTS**

power		
site shack		
fencing & security		
<b>1. Excavation Backfill &amp; Gravel</b>		
excavate for basement, wall footings and bases	288	m3
backfill to basement walls, footings and bases	96	m3
150 mm gravel or sand bed under slab	16	m3
remove surplus excavated material	150	m3
<b>Total - Excavation &amp; Backfill</b>		m2
<b>2. Concrete, Steel &amp; Formwork</b>		
Concrete (20 Mpa) concrete in footings, bases and basement walls (material only)	26	m3
200 mm reinforced concrete wall, 200x450 mm reinforced concrete footing		
reinforcing steel in footings and basement walls (material only)	284	kg
teleposts - 73 mm x 2.4 mm long including 6.35 mm steel plate	3	No.
form, place rebar & concrete in footing, base and basement walls (labour only)	41	m
75 mm concrete (20 Mpa) basement slab on grade	87	m2
precast concrete steps w/supports, 3 risers, supporting brackets 1 - size 1.5 x 1.5 x .6 m, 3 risers 1 - size 1.2 x 1.68 x .6 m, 3 risers	2	No.
parging to concrete walls	19	m2
<b>Sub Total - Concrete, Rebar, Formwork</b>		m2
<b>Damproofing</b>		
two coats asphaltic emulsion on concrete walls	164	m2
100 mm perforated plastic weeping	41	m

**CANADA MORTGAGE AND HOUSING CORPORATION**  
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tile in crushed gravel surround			
SubTotal - Damproofing		m2	
<b>3. Rough Carpentry</b>			
Lumber			
framing material only (#2 grade spruce or better)			
exterior wall (38x140 mm) & cw plates	400	m	
interior stud wall (38x89 mm) cw plates	400	m	
floor joists (38x235 mm)	300	m	
cross bridging (38x38 mm)	50	m	
strapping to basement walls, (38x89 mm) full height	250	m	
roof framing (38x89 mm)	100	m	
fascia board (19x140 mm)	50	m	
material only - panel boards			
Plywood			
10mm subfloor underlay (K3 or equal)	6.	shts	
16 mm fir plywood subfloor t&g	35	shts	
10 mm roof sheathing, exterior grade	55	shts	
8 mm OSB wall sheathing	40	shts	
Sub Total - Framing Materials		m2	
<b>Engineered Trusses</b>			
material only - engineered trusses 600mm oc 38x89 mm #2 grade fir or better			
Howe 3/12, 8.5m (27.8') span	22	No.	
Howe 3/12 gable, 6.1 m (20') span	2	No.	
Sub Total - Engineered Trusses		m2	
<b>Stairs</b>			
stair - 13 risers			
38x235 mm stringers	7	m	
38x235 mm treads	12	m	
6.4 mm fir plywood in risers	13	m	
Sub Total - Stair Material		m2	

**CANADA MORTGAGE AND HOUSING CORPORATION**  
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<b>Deck Material</b>		
decking 38x89 mm	196	m
joists 38x235	40	m
stringers 38x286	5	m
treads 38x140	12	m
posts 100x100	3	m
handrail 38x140	16	m
balustrade	132	m
<b>Sub Total Deck Material</b>		m2
Labour only - complete house framing incl. trusses and window installation.	100	m2
labour only - complete construction of cedar deck including balustrade 1.2 m high handrail and support posts	14	m2
<b>Total - Rough Carpentry</b>		m2
<b>Roofing</b>		
ashpalt shingles, mineral granular surfaced 10.27 kg/m <sup>2</sup> (210lb/100 sq.ft.) and flashing	140 ✓	m2
<b>Total - Roofing</b>		m2
<b>Windows &amp; Doors</b>		
wood fixed window, insulated sealed unit 2.4x1.5 m, in two panels cw natural fir casings, screen & hardware	1	No.
vinyl clad wood framed basement window with vinyl sliders 900x450 m double glazed cw screen & hardware	4	No.
vinyl clad wood framed sealed unit vinyl slider window 1500x900 mm cw screen & hardware	3	No.
vinyl clad wood framed sealed unit vinyl slider window 900x450 mm cw screen & hardware	1	No.
wood casement window two panel	2	No.

**CANADA MORTGAGE AND HOUSING CORPORATION**  
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sealed units 900x1550 mm cw natural fir casings, screen & hardware		
Sub total - Windows		m2
exterior insulated pattern metal door panel 915x2085x35 mm incl. paint grade fir frame	1	No.
exterior patio door c/w screen and prefinished cladding for frames and casings, 1800x2085x35mm	1	No.
Sub total - Exteror Doors & Screens		m2
Total - Windows & Doors		m2
<b>Exterior Cladding Roofing?</b>		
100 mm vinyl siding (back & sides) including building paper	100	m2
brick facing (front elevation)	20	m2
prefinished perforated aluminum soffit	25	m2
prefinished aluminum fascia	45	m
Sub total - Exterior Cladding		m2
eavestrough and downspouts, prefinished aluminum fittings	35	m
parging to concrete walls	15	m2
Total - Exterior Cladding		m2
<b>Plumbing</b>		
complete plumbing rough-in & finishing	1	house
complete plumbing fixtures including:		
water closet	1	No.
lavatory basin	1	No.
fibreglas tub/shower unit	1	No.
laundry tub	1	No.
kitchen s/s double kitchen sink	1	No.
dishwasher rough-in	1	No.

**CANADA MORTGAGE AND HOUSING CORPORATION**  
**Request for Proposal - TABLE OF CONTENTS**

hot water heater (33 imp gal 152 litre)	1	No.
outside hose bibs	2	No.
basement rough-in waste & vent	1	No.
Total - Plumbing	m2	
<b>Electrical</b>		
complete electrical installation, excluding supply of fixtures and including		
100A main supply	1	No.
32 breaker electrical panel	1	No.
duplex receptacles	30	
stove receptacle	1	
dryer receptacle	1	
switches	15	
TV and telephone wiring and outlets	3	
vent fans	2	
range hood	1	
door bell with two presses	1	
smoke detector	2	
lighting fixtures	10	
Total - Electrical	22.8 5	m2
<b>Heating</b>		
oil-fired, 70% efficient furnace c/w filter, wallmount thermostat	1	house
supply and return air ductwork system including:		
main ducts		
branch supply ducts	8	No.
75x250 mm supply registers	8	No.
125mm dia combustion air duct		
Total - Heating		m2
<b>Speciality Items</b>		
feature fireplace in family room including dual metal construction extensions and elbows, cap, hearth, finishing, brickwork to hearth and	1	No.

**CANADA MORTGAGE AND HOUSING CORPORATION**  
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full height of wall by 2.4m wide including laminated cedar mantle		
vacuum system - rough-in	1	house
mail box	1	set
house numbers	1	set
Total - Specialty Items		m2
<b>Drywall, Insulation &amp; Caulking</b>		
gypsum wallboard (13 mm standard) on walls, ceilings, and around stair openings, including corner beads, taping and sanding:		
walls	170	m2
stair openings	25	m2
ceilings (ceiling board)	100	m2
textured finish to ceilings incl. paint undercoat	100	m2
batt insulation (Rsi 3.5 R20) to walls	100	m2
loose fill (Rsi 6.0 R34) attic insulation	100	m2
batt insulation (Rsi 1.4 R8) basement	100	
6 mil polyethylene vapor barrier to external walls and ceilings	200	m2
6 mil polyethylene vapor barrier to external walls of basement	100	m2
caulking to exterior doors, windows, junction of siding and concrete	80	m
interior caulking to tubs and showers	5	m
Total - Drywall, Insulation, Caulking		
<b>Cabinets &amp; Vanities</b>		
vanities and base cabinets - supply only	6	m
kitchen wall cabinets - supply only	5	m
countertops - supply only	5	m
sub-total = Cabinetry Supply		m2
installation labour	1	house
Total - Cabinets & Vanities		
<b>Painting, Stain &amp; Lacquer</b>		

**CANADA MORTGAGE AND HOUSING CORPORATION**  
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interior work - prepare, prime, two coats of latex semi-gloss paint to drywall.	450	m2
prepare, prime, one coat semigloss paint on baseboards, shelving, trim handrail, balustrade, windows, doors	100	m
<b>Sub-Total - Interior Painting</b>		m2
exterior work - prepare, prime, two coats of enamel paint on windows, doors and trim	5	m2
<b>Sub-Total - Exterior Painting</b>		m2
stain finish to cedar deck	15	m2
stain finish to deck handrail & balustrade	15	m
<b>sub-total - Deck &amp; Handrail Finish</b>		m2
<b>Total - Painting &amp; Stain</b>		m2
<b>Interior Finishing</b>		
hollow core doors and frames, rotary cut mahogany face, pre-hung:		
450x2080 mm (18" - BC)	1	No.
711x2080 (28" - bath)	1	No.
762x2080 (30" - bedrms)	3	No.
800x2080 (48" - Mbed)	1	No.
bi-fold closet doors, mahogany face, c/w hardware		
600x2080 (24" - C&L)	2	No.
900x2080 (36" - bed)	2	No.
1200x2080 (48" - Mbed)	1	No.
<b>sub-total - Interior Doors</b>		m2
select grade fir/hemlock in handrail, 50mm dia., c/w brackets	4	m
hemlock wood railing c/w spindles, railingshoe, and newel posts	2	m
select grade fir/hemlock colonial window/door trim & base (62x12 mm)		
window trim	40	m

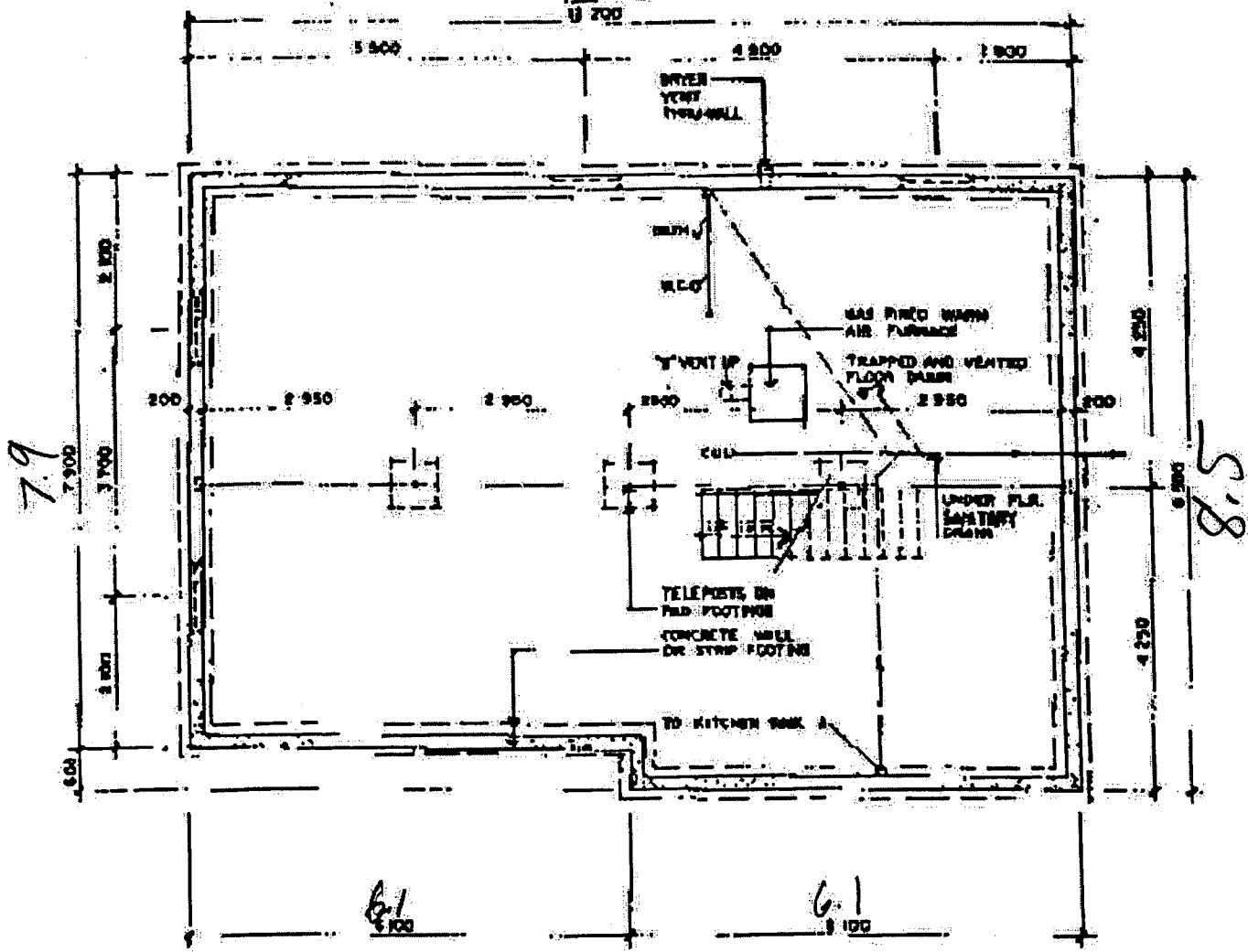
**CANADA MORTGAGE AND HOUSING CORPORATION**  
**Request for Proposal - TABLE OF CONTENTS**

door trim	125	m
base board	100	m
attic access hatch 610x610 mm	1	No.
sub-total - Casings, rims & Handrails		m2
lock sets to exterior front door	1	set
security deadbolt	1	No.
latch sets	5	sets
bathroom privacy latch sets	1	sets
door stops	6	No.
subtotal - Door Hardware		m2
washroom accessories		
toilet tissue holder	1	No.
soap dish	1	NO.
towel bar	1	No.
medicine cabinet	1	No.
25 mm chrome shower curtain rod	1	No.
18 mm chrome coat rods	5	No.
sub-total Washroom Accessories		m2
mirror	1	No.
shelving - douglas fir plywood, lipped one edge 450 mm wide	11	m
finishing labour	1	house
Total - Interior Finishing		m2
<b>Floor Coverings</b>		
32 oz, 100% nylon carpet with 6mm chip foam underlay	40	m2
sheet vinyl flooring 2.5 mm thick with adhesive to sub-floor	30	m2
pre-finished $\frac{3}{4}$ "x $2\frac{1}{2}$ " clear maple	30	m2
Total - Floor Coverings		m2
<b>Miscellaneous</b>		
garbage removal	1	house
cleaning	1	house
permits	1	house
Total - Miscellaneous		m2

**CANADA MORTGAGE AND HOUSING CORPORATION**  
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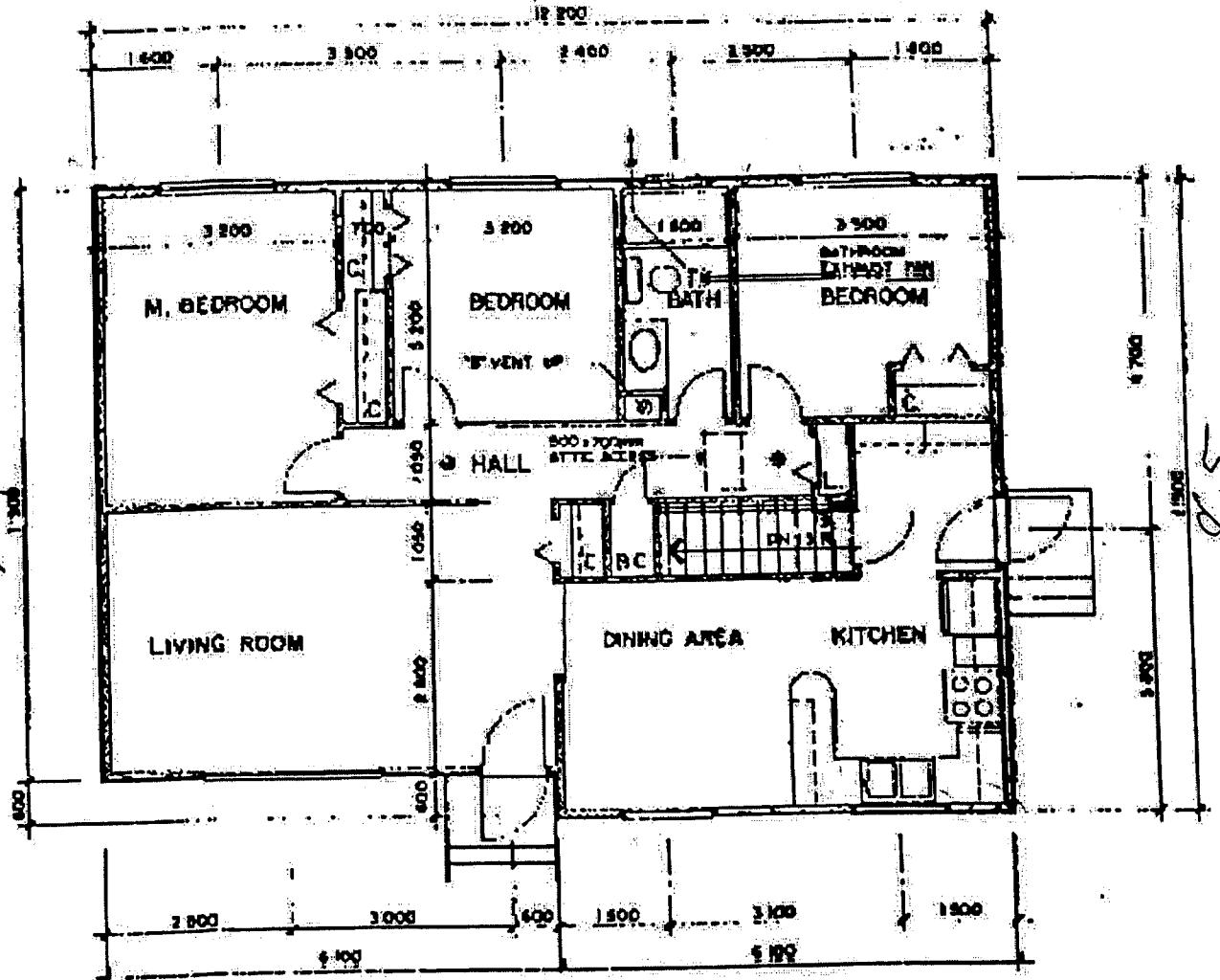
**APPENDIX B**

12.2



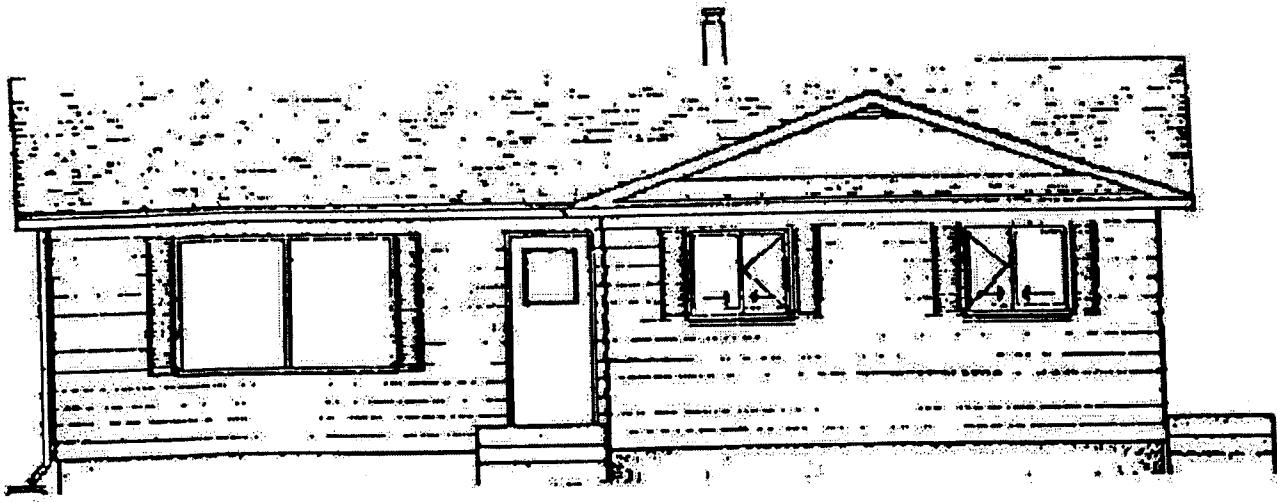
**BASEMENT / FOUNDATION PLAN**

NOTE SEE BUILDING SECTION FOR NOTES ON CONSTRUCTION ASSEMBLIES AND SIZES

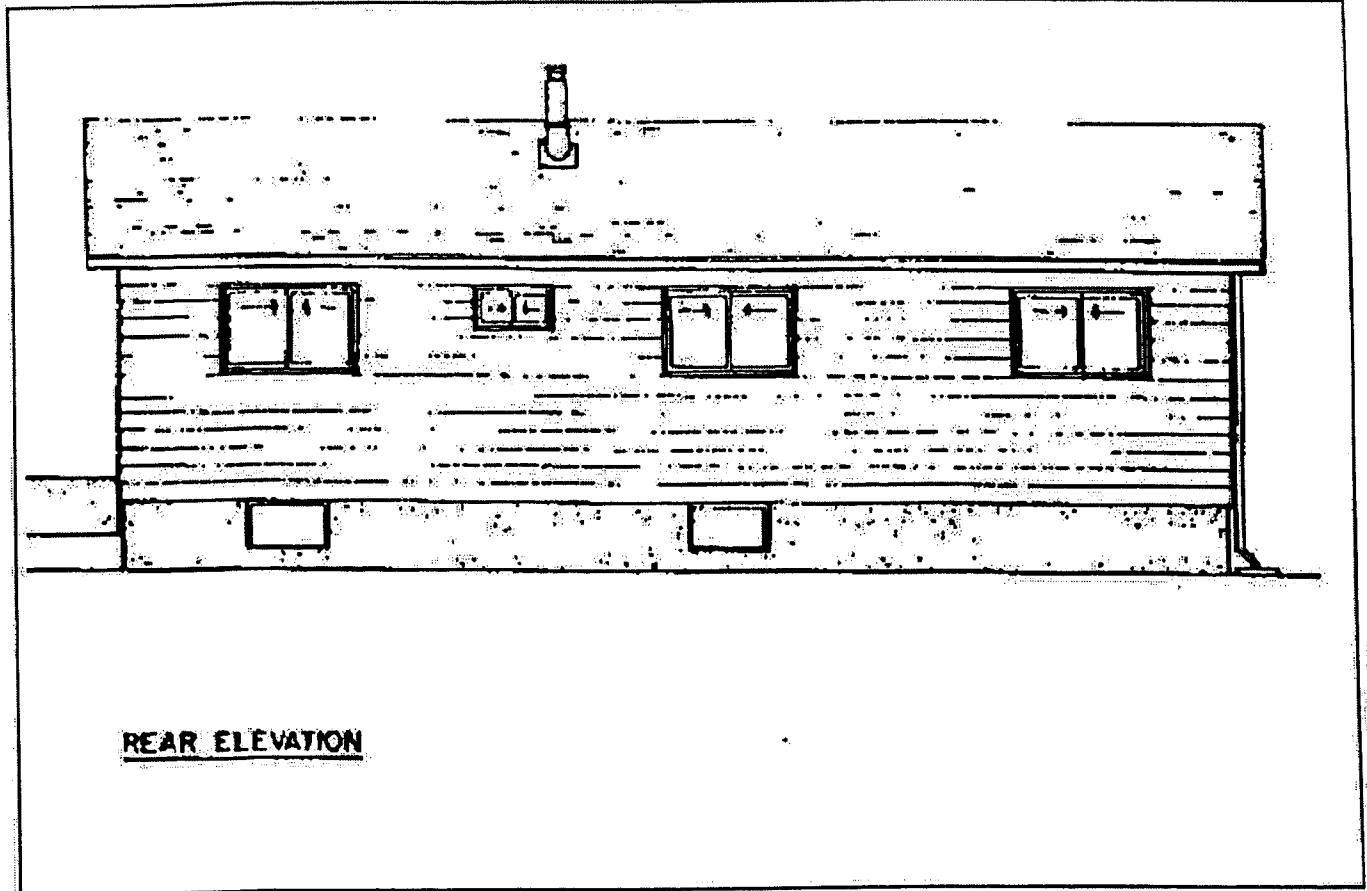


GROUND FLOOR PLAN

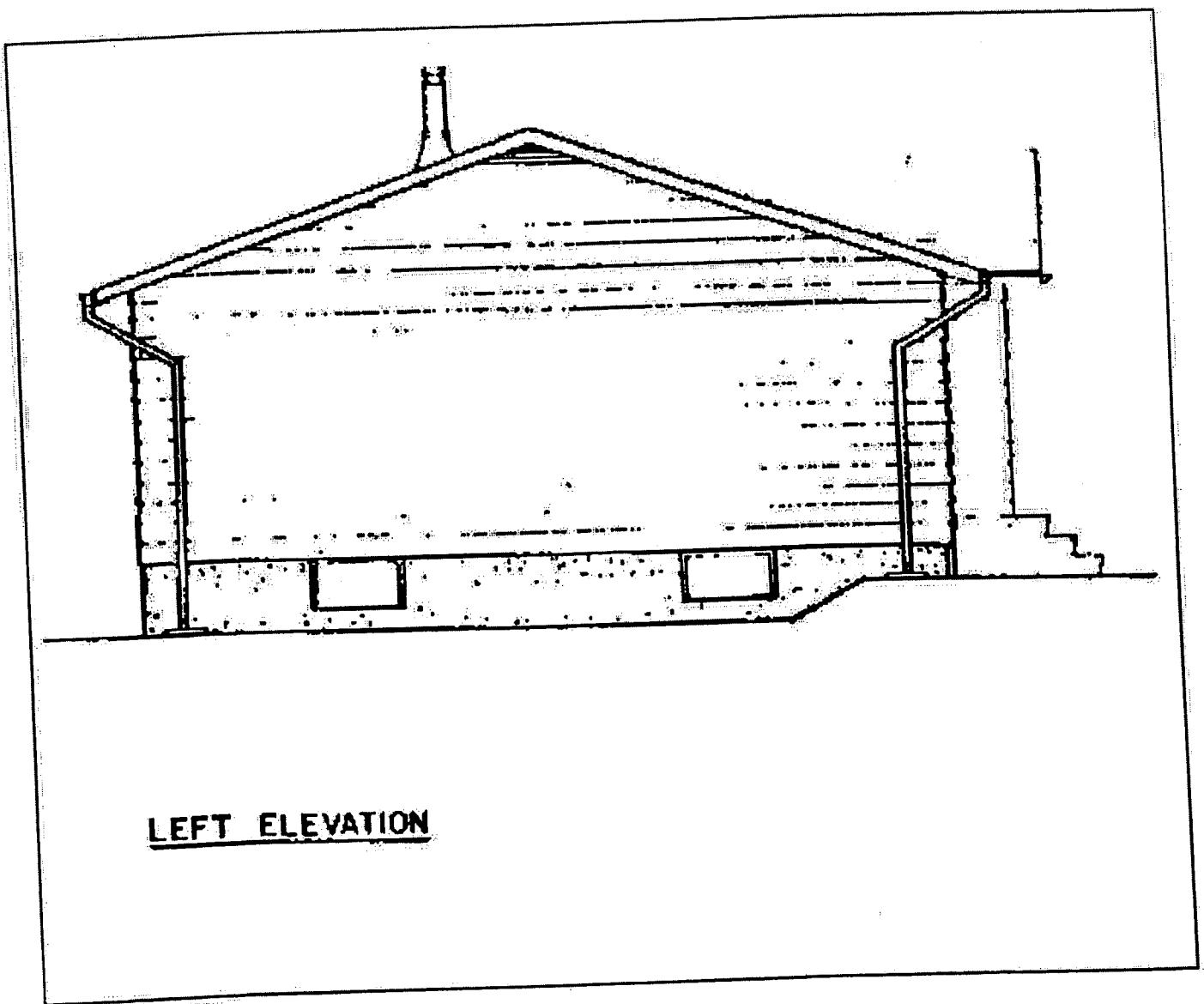
9 SMOKE ALARM  
SHALL BE INSTALLED BY A  
PERMANENT CONNECTION TO AN  
ELECTRICAL CIRCUIT



FRONT ELEVATION



**REAR ELEVATION**



LEFT ELEVATION

