

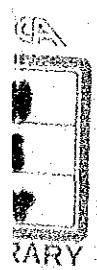
無償資金協力案件の事業費積算に  
関する基礎調査報告書

(別冊 スリランカ編)

昭和62年3月

国際協力事業団

無計計
SC
87-46'



国際協力事業団

受入 月日	'87. 6. 22	000
登録 No.	16565	36
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## スリランカ資料

無償施設案件におけるより適正な事業費積算を図る上で、当該国におけるコストデータ、つまり現地における正確なコスト情報の蓄積・整備が今後の重要な鍵となる。

下記に、スリランカ国における現地調査で得た資料を基に、当該国ジェネラル・コストデータベースの形に要約した。

今後、他の国においても同様なコストデータベースを整備し、常時最新情報が蓄積されるようメンテナンス処理を施すことの意義は極めて大きいと考えられる。

### 1. ジェネラル・コストデータベース項目の内容

現地調査にて入手した資料を、次ページ(表-1)に挙げる主要項目に従って分類し、スリランカにおけるジェネラル・コストデータベースの概要として次ページ以降にまとめた。

表-1 ジェネラル・コストデータベース項目

A.	現地国一般建設コストデータ	
A. A	概要	当該国の建設コストにおける特徴、傾向、特性等現行データを常にメンテナンスした最新データ (インフレ率、為替レート等)
A. B	指数	当該国の建築コストインデックス、建築コスト指数、値動きの状況
A. C	労務	建設産業における、建設工事労務費、労務時間、労務契約状況、労務に関する保険、税金、歩掛データ
A. D	資材及び建設機械	主要資材価格及び建設産業に使用されるプラント機械の値段の動き、材料の歩掛りデータ
A. E	工法	当該国の建設工法の特徴及び作業方法
A. F	法律	建設産業に影響を及ぼす、法律、法令の概要
A. G	統計及び経済指数	当該国の建設産業に係わる、投資額、就業率、経済状況等の統計、経済指標データ
A. H - A. K (空欄)		
A. L	地域差	当該国内での地域差によるコスト指数の違いと傾向性
A. M	予定価格	予定価格及び予算算出指標計画一覧表
A. N	コンサルタントへの報酬額と業務内容	コンサルタント業務報酬額に関する資料及び業務範囲
B.	現地建設事情についての刊行物の概要	建築のコスト面に関連する出版刊行物の概要
C - E (空欄)		
F.	実績コスト調査	実績プロジェクト概要コストを分析し、企画時における予算算出、概略予算に利用できるよりにまとめたもの。
G.	詳細コスト分析	実績詳細コストデータであり、予算価格の作成、もしくは、審査における有効なデータ情報システム
H.	現行ローカル市場価格及び複合単価	現行の流通している材料費、労務費そして建設工事複合単価積み上げの根拠データ
K - Y (空欄)		
Z.	参照用索引	このデータベース内での検索用として整理した参照用、索引累積一覧表

## 2. 現地国一般建設コストデータ (A)

### 2-1 概要

#### (1) 為替レートの変動

#### EXCHANGE RATES

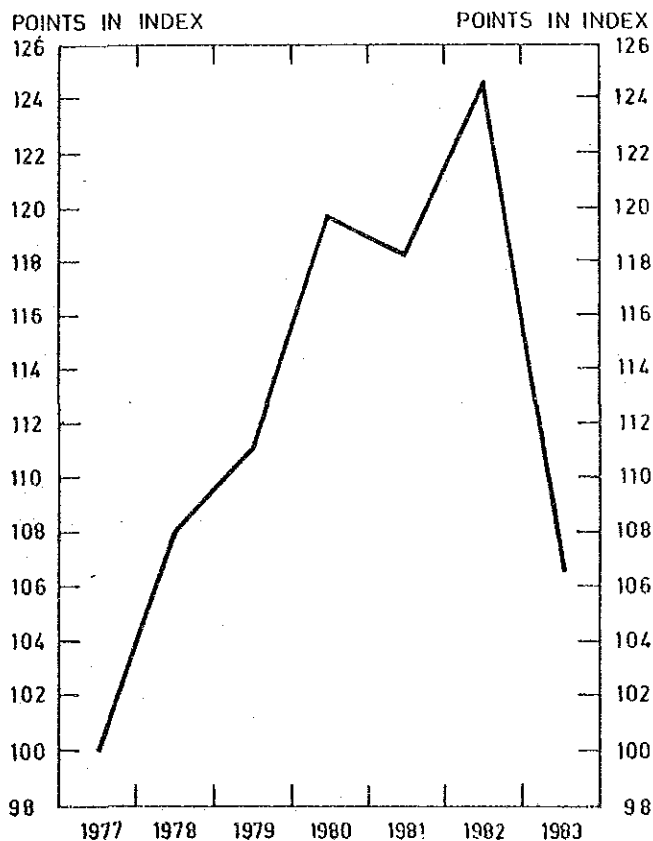
(Sri Lanka Rupees per Unit of Foreign Currency)

Country	Currency	Nov. 15 1977*	1977*	1985	April 1986
1. Australia	Dollar	9.5542	17.7462	18.6905	20.5815
2. Canada	Dollar	7.6783	14.2125	19.6048	20.2359
3. Denmark	Krone	1.3930	2.6945	3.0394	4.1642
4. Federal Republic of Germany	Deutsche Mark	3.7692	7.4250	11.1074	12.7926
5. France	Franc	1.7601	3.3220	3.6167	4.0157
6. Hongkong	Dollar	1.8162	3.3698	3.5097	3.5756
7. India	Rupee	1.0214	1.8500	2.2575	2.2711
8. Japan	Yen	0.0341	0.0649	0.1360	0.1656
9. Kuwait	Dinar	30.0030	30.5219	94.2973	94.1246
10. Netherlands	Guilder	3.5126	6.8698	9.8606	11.3405
11. New Zealand	Dollar	8.4049	5.9784	13.7175	16.2302
12. Pakistan	Rupee	0.8658	1.5879	1.7147	1.7120
13. Saudi Arabia	Riyal	2.4320	4.4483	7.5080	7.6377
14. Singapore	Dollar	3.5617	6.6724	12.9586	12.7080
15. Switzerland	Franc	3.8160	7.7625	13.1672	15.2886
16. United Kingdom	Pound	15.5255	29.8525	39.5764	43.0390
17. U. S. A.	Dollar	8.9990	15.5600	27.4075	27.8750
18. United Arab Emirates	Dirham	2.1959	3.9897	7.4629	7.5902

\* From 16th November 1977, the Sri Lanka Rupee was allowed to float and daily buying and selling rates of major currencies for telegraphic transfers by commercial Banks were announced by the Central Bank of Sri Lanka.

#### (2) インフレ率

#### INDEX OF INDUSTRIAL PRODUCTION OF THE PUBLIC SECTOR\*



2-2 指数 (A·B)

(1) コストインデックス

Cost Indices for Selected Building Materials and Different Construction Activities (1969=100)

Item	1979	1980	1981	1982	1983	
					1st half	2nd half
1. Cement	292	636	723	814	824	n.a.
2. Steel (MS. Bars)	458	504	572	573	573	n.a.
3. Bricks (Hand Moulded)	285	393	388	442	456	n.a.
4. Asbestos Sheet (corrugated)	411	607	627	706	767	n.a.
5. Timber (Sawn)	378	634	814	814	827	n.a.
6. Metal (½")	533	617	551	557	597	n.a.
7. P. V. C. Pipes (½")	459	520	520	520	520	n.a.
8. Housing Construction	347	519	617	645	673	n.a.
9. Non-Residential Buildings	320	463	548	586	611	n.a.
10. Other Construction Works	278	386	457	493	514	n.a.
11. All Construction Activities	327	469	558	592	618	n.a.

Sources: Ministry of Local Government, Housing and Construction.

Colombo Consumers' Price Index (1952=100)

Year	All Items	Commodity - Wise					Sector - Wise		
		Food	Clothing	Fuel & Light	Rent	Miscellaneous	Domestic Group	Import Group	Export Group
Weights	100.0	61.9	9.4	4.3	5.7	18.7	60.0	35.0	5.0
1977 Average	203.2	203.3	223.8	257.5	109.8	208.4	200.6	195.6	317.5
1978 Average	227.8	237.5	226.2	262.1	109.8	224.8	228.8	243.8	358.2
1979 Average	252.3	263.3	231.2	328.5	109.8	252.4	249.3	283.7	385.2
1980 Average	318.2	339.7	239.9	563.9	109.8	293.8	288.9	417.7	438.1
1981 Average	375.4	399.6	257.8	767.9	109.8	345.7	341.4	493.1	522.2
1982 Average	416.1	450.4	273.8	816.4	109.8	377.1	383.9	532.9	536.5
1st Quarter	407.0	440.7	267.0	803.7	109.8	366.9	370.1	529.2	579.8
2nd Quarter	414.5	448.4	271.8	811.8	109.8	377.9	381.0	535.4	502.9
3rd Quarter	419.0	453.4	276.1	815.5	109.8	382.3	389.1	533.5	503.6
4th Quarter	423.7	459.1	280.1	834.5	109.8	381.2	395.0	533.6	559.8
1983 Average	474.2	506.3	291.1	1,087.6	109.8	433.7	433.0	583.4	772.2
1st Quarter	438.0	471.2	286.5	901.6	109.8	400.5	405.1	548.9	619.2
2nd Quarter	466.5	500.1	291.0	1,027.6	109.8	426.6	433.6	574.1	645.2
3rd Quarter	482.9	511.7	291.8	1,180.0	109.8	441.7	437.9	600.3	742.6
4th Quarter	509.3	542.1	295.1	1,241.1	109.8	466.0	455.5	610.0	1,081.8
Percentage change									
1982 over 1981	10.8	12.7	6.2	6.3	—	9.1	12.5	8.1	2.7
1983 over 1982	14.0	12.4	6.3	33.2	—	15.0	12.8	9.5	43.9

Sources: Department of Census & Statistics, and Central Bank of Ceylon.



## 2-3 勞務 (A·C)

### (1) 勞務賃金

All Island Daily Wage Rates in Building Construction

Activity	Type of Labour	In Rupees					
		1982		1983		Percentage Change 1983 over 1982	
		Nominal Wage Rate	Real* Wage Rate	Nominal Wage Rate	Real* Wage Rate	Nominal Wage Rate	Real Wage Rate
Carpentry	Master Carpenter	53.81	41.15	59.95	40.23	+ 11	- 2
	Skilled Helper	36.26	27.72	41.85	28.08	+ 15	+ 1
	Unskilled Helper	26.54	20.30	30.75	20.63	+ 16	+ 2
Masonry	Master Mason	52.42	40.09	58.31	39.13	+ 11	- 2
	Skilled Helper	35.65	27.26	39.98	26.83	+ 12	- 2
	Unskilled Helper	26.34	20.14	30.11	20.20	+ 14	-

Source: Central Bank of Ceylon,  
Country Wide Data Collection System.

\* The year 1980 was taken as the base for computation.

All Island Average Daily Wages in Building Construction - 1979 to 1982

Activity	Type of Labour	1979 Rs. Cts.	1980 Rs. Cts.	1981 Rs. Cts.	1982 Rs. Cts.	Percentage Change			
						1979 to 1980	1980 to 1981	1981 to 1982	1979 to 1982
Carpentry	Master Carpenter	27.51	36.95	46.85	53.81	34.3	26.8	14.9	95.6
	Skilled Helper	19.23	25.44	32.26	36.26	32.3	26.8	12.4	88.6
	Unskilled Helper	14.27	19.17	23.87	26.54	34.3	24.5	11.2	86.0
Masonry	Master Mason	27.08	35.85	45.90	52.42	32.4	28.0	14.2	93.6
	Skilled Helper	19.07	25.00	31.53	35.65	31.1	26.1	13.1	86.9
	Unskilled Helper	14.21	18.80	23.82	26.34	32.3	26.7	10.6	85.4

Note:—These wage rates represent payments in cash without meals.

(2) 工事保険

: 現地聴き取り調査による。調査対象は p. 35 参照。

Construction Insurance

It is assumed that this construction site is located in the central area of the city and the total floor area is 3,000 m<sup>2</sup>.

No.	ITEM	UNIT	A(L)	B(L)	H(GOV'T)
1.	Building construction insurance: (What percent of the total contract price do you allow?)	%	25%		
2.	Liability insurance: (What percent of the total contract price do you allow?)	%	.05%	Based on Insurance Corporation Quota-tion	Contractor's Responsibility and Governed by Labour Regulations of Dept. of Labour.
3.	Worker's liability compensation insurance: (What percent of the total wage do you allow?)	%	1.5%		
4.	Automobile insurance: (What percent of the insured amount do you allow?)	%	2.0%		Contractor's Responsibility and depends on quantum of Machinery and duration.

\*Note: C(M), D(M), E(M), F(S), G(ICTAD) did not respond to these questions.

2-4 資材及び建設機械 (A・D)

(1) 資材費

CEMENT

Item	Unit	1972	1973	1974	1975	1976	1977	1978	1979						
									Jan.	Feb.	Mar.	Apr.	May	June	
1.0 Installed Capacity	M/T'000	275	275	275	275	275	275	275	275	275	275	275	275	275	275
1.1 Kankesan	"	220	440	440	440	440	440	440	440	440	440	440	440	440	440
1.2 Puttalam	"	100	100	100	100	100	100	100	100	100	100	100	100	100	100
1.3 Galle	"														
2.0 Actual Utilization	"	215	220	202	218	189	77	215	15.9	12.9	24.5	23.9	19.9	17.8	17.8
2.1 Kankesan	"	130	180	363	192	165	49	340	6.2	31.5	37.6	31.8	32.7	35.1	35.1
2.2 Puttalam	"	43	55	50	49	36	35	62							
2.3 Galle	"														
3.0 Percentage Utilization	%	79	80	73	79	69	51	78	69.2	56.4	106.8	104.1	87.0	77.6	77.6
3.1 Kankesan	"	59	41	60	44	42	30	77	16.8	91.2	102.5	96.8	89.3	95.7	95.7
3.2 Puttalam	"	43	55	50	49	36	35	62							
3.3 Galle	"														
4.0 Production of Portland Cement	M/T'000	383.0	423.4	475.4	394.4	437.2	352.8	475.0	30.6	55.1	63.5	55.2	53.1	47.7	47.7
4.1 Kankesan	"	180.5	185.6	190.4	167.0	200.1	102.5	191.9	23.3	17.3	18.7	22.0	21.1	15.2	15.2
4.2 Puttalam	"	139.9	181.5	234.1	177.0	190.4	168.3	331.4	2.5	36.1	39.9	31.9	30.1	30.0	30.0
4.3 Galle	"	64.1	56.0	50.9	50.4	36.7	37.0	61.7	4.8	1.7	1.9	4.3	1.9	2.5	2.5
5.0 Production of Masonry Cement	M/T'000	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5.1 Kankesan	"	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5.2 Puttalam	"	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5.3 Galle	"	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6.0 Sales—Total (Portland & Masonry Cement)	M/T'000	381.5	422.3	453.5	388.8	420.3	342.5	567.6	44.9	59.5	58.2	53.3	67.5	53.8	53.8
7.0 Price per Ton (Portland Cement)	Rs.	210	240	300	370	370	370	440	440	440	440	440	440	440	575
7.1 Kankesan	"	225	250	300	370	370	370	440	440	440	440	440	440	440	575
7.2 Puttalam	"	240	260	300	370	370	370	440	440	440	440	440	440	440	633
7.3 Galle	"														
8.0 Price per Ton (Masonry Cement)	Rs.	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8.1 Kankesan	"	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8.2 Puttalam	"	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8.3 Galle	"	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9.0 Cost of Production per Ton (Portland Cement)	Rs.	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9.1 Kankesan	"	—	—	—	221	306	—	370	353	353	353	353	353	353	353
9.2 Puttalam	"	—	—	—	361	392	—	367	390	390	390	390	390	390	390
9.3 Galle	"	—	—	—	280	365	—	361	569	569	569	569	569	569	569
10.0 Cost of Production per Ton (Masonry Cement)	Rs.	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10.1 Kankesan	"	—	—	—	—	—	—	—	244	244	244	244	244	244	244
10.2 Puttalam	"	—	—	—	—	—	—	—	486	486	486	486	486	486	486
10.3 Galle	"	—	—	—	—	—	—	—	—	—	—	—	—	—	—
11.0 Exports	M/T	31	5,202	41,326	20,914	917	306	—	—	—	—	—	—	—	—
11.1 Quantity	"	—	563	12,500	5,213	368	—	—	—	—	—	—	—	—	—
11.2 Value	Rs. '000	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Source: Ceylon Cement Corporation

STEEL

Item	Unit	1975	1976	1977	1978	1979					
						Jan.	Feb.	Mar.	Apr.	May	June
1.0 Production	M/T	21,243	28,295	24,558	33,110	3,238	4,797	4,569	1,487	6,286	3,925
1.1 Rolling Mill	"	11,670	25,253	18,412	27,403	2,592	2,443	4,569	1,487	4,777	1
1.1.1 Rounds	"	4,675	—	2,777	2,221	—	—	—	—	1,509	—
1.1.2 Flats	"	4,898	3,042	3,369	3,486	646	2,354	—	—	—	3,924
1.1.3 Angles	"	7,477	8,443	9,586	13,280	1,508	1,323	1,490	1,306	1,607	223
1.1.4 Ribbed Steel (Tor. Steel)	"										
1.2 Wire Mill	"	7,042	5,963	5,496	9,491	653	635	735	308	778	672
1.2.1 Wire drawing	"	1,876	2,145	1,530	2,930	235	149	114	49	249	72
1.2.2 Annealing and Galvanising	"	635	234	177	670	30	17	10	—	04	01
1.2.3 Barbed Wire	"	598	678	400	981	89	73	32	14	29	50
1.2.4 Welded Mesh	"	6	22	14	—	—	—	—	—	—	—
1.2.5 Hexagonal Mesh	"										
1.3 Foundry	"	171	125	30	83	09	06	06	13	17	11
1.3.1 Grinding Media	"	64	108	149	189	25	16	20	10	18	20
1.3.2 General Casting	"	—	177	478	360	24	87	72	30	66	27
1.3.3 Pig Iron	"										
2.0 Capacity Utilization	%	32	39	40	49	53	78	81	41	73	48
2.1 Rolling Mill	"	59	50	46	79	69	64	74	31	78	67
2.2 Wire Mill	"	—	41	66	63	39	73	65	35	67	39
2.3 Foundry	"										
3.0 Cost of Production per Metric Ton	Rs.	3,519	3,249	3,683	4,030	3,786	4,473	3,929	3,183	4,204	3,612
3.1 Rolling Mill	"	4,592	4,224	4,640	4,839	5,363	6,262	6,315	6,941	6,483	6,978
3.2 Wire Mill Process I	"	11,523	9,097	6,067	8,081	7,671	4,764	4,818	7,822	5,619	9,107
3.3 Foundry	"										
4.0 Personnel Strength	No.	1,256	1,361	1,790	2,118	2,115	2,144	2,147	2,146	2,158	2,149

Source: Ceylon Steel Corporation

(2) 建設機械

：現地聴き取り調査による。調査対象は P.35 参照。

Machinery Hired by Contractor

It is assumed that this machinery is acquired on a lease basis.

No.	ITEM	COST / DAY			G (IC/AD)	H (GOV'T)
		A (L)	B (L)	C (L)		
1.	Motor lorry, not exceeding 5 tons	750 /day (fuel exp. to hire)	1,750 /day	1,250 /day -1,450 (barricat)	3,000 /day	
2.	Concrete mixer 10/7	650 /day	1,000 /day	800 /day	750 /day	
3.	Bar machine hand operated	50 /day	150 /day	100 /day	200 /day	
4.	Mechanical excavator with single equipment	5,000 /day	6,000 /day	3,000 /day	5,000 /day	
5.	Crane	8,000 /day (10 ton)	5,000 /day	8x650 /day (5 ton)	7,500 /day	

\*Note: C(M), D(M), E(M), F(S) companies did not respond to these questions.

## 2-5 工 法 (A・E)

### (1) 建築工法

: 現取聴き取り調査による。調査対象は p. 35 参照。

#### METHODS OF CONSTRUCTION:

#### 1) Can you point out any special information which is crucial to designing a building for this country?

G(ICTAD) - No.

- H(GOV'T) - a) Standard Building Codes (British and Sri Lankan) are adopted for Building design.  
b) Information regarding cyclonic & wind forces, landslide effects, flooding may be advantageous for adoption of the above codes for design.  
c) Special information is necessary on the use of recent building products and their effects on the environment.

- I(L) - 1) U.D.A.  
2) Fire department  
3) C.E.B. (electricity)  
4) Water supply & drainage

#### 2) What is the main structure for the following buildings? (R.C., Steel, Brick, etc.)

##### a) Housing -

- G(ICTAD) - Brick.  
H(GOV'T) - Bricks and block work.  
I(L) - Bricks.

##### b) Major Public Works Departmental Buildings -

- G(ICTAD) - R.C. & brick work.  
H(GOV'T) - R.C., brick work and block work.  
I(L) - R.C.

METHODS OF CONSTRUCTION: (cont'd)

3) What is the general construction method for each of the following trades?  
(ie. What equipment, labour, technology and materials are utilized?)

a) Scaffolding

G(ICTAD) - Bamboo.  
H(GOV'T) - Bamboos are used and upright and timber planks are used in working platforms. Steel scaffoldings are used in large constructions.

b) Excavating

G(ICTAD) - Manually.  
H(GOV'T) - Manual excavation by using ordinary hand tools. Machinery used in larger constructions.

c) Concrete work

G(ICTAD) - Cone mixer.  
H(GOV'T) - Manual mixing of concrete is done in smaller worksites and concrete mixers are used in medium and major construction sites.

d) Form work

G(ICTAD) - Timber.  
H(GOV'T) - Timber planks and props are used for normal formwork and in very large sites steel formwork is used.

e) Reinforcement steel

G(ICTAD) - Local high tension.  
H(GOV'T) - Manual fabrication adopted in most sites, and in some large sites special machinery for bending and assembly of bars is used.

## METHODS OF CONSTRUCTION: (cont'd)

### f) Brick work

- G(ICTAD) - Local cottage bricks.  
H(GOV'T) - Bricks made locally are used with cement and sand and lime mortar. Concrete and sand cement blocks are used in some sites.

### g) Roofing

- G(ICTAD) - Asbestos - calicut tile.  
H(GOV'T) - Calicut tiles or asbestos sheets are fixed to timber or steel framework.

### h) Internal finishes

- G(ICTAD) - Cement lime plaster.  
H(GOV'T) - Walls plastered with cement, sand, lime mortar in appropriate proportions and finished with lime putty. This surface is suitably treated and depending on requirements either plain colour washed or emulsion paint applied.

### j) Electricity

- G(ICTAD) - 23 - 50 v.  
H(GOV'T) - Wiring within conduiting according to electrical specifications of this country.

### k) Plumbing

- G(ICTAD) - P.V.C.  
H(GOV'T) - PVC pipes are used for water supply lines and sewerage supply lines in most cases. The water pipes are generally concealed in walls or below. All plumbing are according to specifications of the local authority.

### l) Air-conditioning

- G(ICTAD) - Not in normal use.  
H(GOV'T) - Air-conditioning plants are laid according to the specifications.

## 2-6 法律 (A・F)

: 現地踏査取り調査による。調査対象は p. 35 参照。

### (1) 入札及び契約

#### TENDERING AND CONTRACTING PROCEDURE:

#### 1) What is the basic method of tendering and contracting for a public service project?

G(ICTAD) - Open tenders. Pre-qualification procedures adopted for large works.

H(GOV'T) - 1) Open tender method. The administration of contracts are governed by the Contract documents comprising of:

a) Specifications

1. Standard specifications - buildings
2. General specifications on water supply & sewerage
3. Electrical Installations, fittings, materials & accessories.

b) Contract documents

1. Conditions of Tender
2. Agreement
3. Letter of Guarantee
4. Bill of Quantity
5. Drawings.

I(L) - List of Contractors registered in Building Department.

#### 2) What is the standard method of tendering? (ie. selective or open tendering)

G(ICTAD) - Both open & selective.

H(GOV'T) - Open tenders subject to financial regulations.

I(L) - Open tender - public sector  
Selective tender - private sector



TENDERING AND CONTRACTING PROCEDURE: (cont'd)

- 3) Who acts as the Contract Manager in the case of a public service contract? (ie the contractor or a public servant)

G(ICTAD) - N/R

H(GOV'T) - The public servant, generally an Engineer or an Architect.

I(L) - Engineer.

**For the Public Works Department:**

- 1) Could you please provide us with an organizational chart of the Public Works Department, including descriptions of the individual positions and the number of staff involved.

H(GOV'T) - Annexed.

- 2) What is the overall budget for the department for one years term?

H(GOV'T) - Approximately Rs. 400 Million.

What is the amount of the workload (ie. number of projects)?

H(GOV'T) - About 750 items varying from Rs. 25,000 to 165 million.

Note: N/R = Not Replied

2-7 統計及び経済指数 (A・G)

(1) 経済状況

COMPOSITION OF NATIONAL INCOME 1982-1985 (New Series)

Item	1982*	1983*	1984*	1985*
1.0 GDP at Constant (1982) Factor Cost Prices (%)	100.00	100.00	100.00	100.00
1.1 Agriculture, Forestry, Hunting and Fishing	26.37	26.37	25.01	25.89
1.2 Manufacturing	14.37	13.79	14.74	14.78
1.3 Services	4.86	4.52	4.44	4.03
1.4 Wholesale and Retail Trade	20.80	20.37	21.10	20.92
1.5 Transport, Storage and Communications	11.27	11.35	11.91	11.83
1.6 Construction	8.41	8.09	7.69	7.37
1.7 Public Administration and Defence	3.05	3.81	3.99	4.04
1.8 Ownership of Dwellings	3.43	3.34	3.24	3.13
1.9 Banking, Insurance and Real Estate	3.92	4.16	4.34	4.54
1.10 Mining and Quarrying	2.36	2.43	2.35	2.27
1.11 Electricity, Gas, Water and Sanitary Services	1.15	1.17	1.19	1.20
2.0 GDP, Market Price by Expenditure (%)	100.00	100.00	100.00	100.00
2.1 Private Consumption	79.83	78.08	72.35	77.07
2.2 Public Consumption	8.31	8.13	7.76	9.21
2.3 Gross Domestic Fixed Capital Formation	30.51	29.06	25.73	25.73
2.3.1 Private Sector and Public Corporations	25.61	24.16	21.13	18.84
2.3.2 Public Sector	4.90	4.90	4.60	6.89
2.4 Changes in Stocks	0.25	0.17	0.10	0.14
2.5 Exports of Goods & Non-Factor Services	27.36	26.33	28.80	26.33
2.6 Less: Imports of Goods and Non-Factor Services	46.26	41.43	34.74	38.48

\* Provisional.

Source: Central Bank of Sri Lanka.

TABLE 78--SUMMARY INDICATORS OF NATIONAL PRODUCT INCOME AND EXPENDITURE AT CURRENT PRICES

	Values					
	1975	1981	1982	1983	1984 <sup>(1)</sup>	1985 <sup>(1)</sup>
1. Gross National Product at Current Market Prices (Rs. million)	26,827.5	82,658.6	95,493.1	116,037.7	143,694.9	154,808.3
2. National Income at Market Prices (Rs. Million)	---	---	---	---	---	---
3. Gross Domestic Expenditure (Rs. million)	27,040.5	84,526.6	97,527.5	119,201.5	147,095.8	158,160.2
4. Private Consumption Expenditure (Rs. million)	21,678.5	64,581.4	77,309.5	93,074.9	107,739.7	119,916.1
5. Public Consumption Expenditure (Rs. Million)	2,696.7	7,456.1	10,407.4	12,726.9	15,442.4	19,242.8
6. Gross Fixed Capital Formation (Rs. million)	3,539.8	23,955.3	27,925.7	31,583.8	34,262.1	36,234.6
7. Gross National Product per Capita at Market Prices (Rupees)	1,987.8	5,515.0	6,287.0	7,527.1	9,211.2	9,775.1
8. National Income per Capita at Market Prices (Rupees)	---	---	---	---	---	---

2-8 地域差 (A·L)

(1) 資材価格の地域差

DISTRICT AND ALL ISLAND PRODUCER PRICES—QUARTERLY AVERAGES—1982

Item	Unit	Matale District					Nuwara Eliya District					Badulla District				
		1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Annual Average	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Annual Average	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Annual Average
		Rs. Cts.	Rs. Cts.	Rs. Cts.	Rs. Cts.	Rs. Cts.	Rs. Cts.	Rs. Cts.	Rs. Cts.	Rs. Cts.	Rs. Cts.	Rs. Cts.	Rs. Cts.	Rs. Cts.	Rs. Cts.	Rs. Cts.
(17) Building Materials																
Bricks	1000	275.93	275.00	275.00	272.22	274.54	375.00	358.33	316.67	350.00	350.00	345.05	353.40	360.97	373.26	358.17
Sand	Cube	39.59	40.00	43.34	42.09	41.26	60.00	60.00	63.75	65.00	62.19	79.22	71.95	76.67	75.63	75.87
Rubble 6" x 9"	"	130.56	112.09	110.63	120.00	118.32	255.21	365.97	303.89	302.50	306.89	166.89	165.83	151.11	163.06	161.72
Metal 2"	"	234.70	246.67	413.34	308.34	300.76	365.65	365.97	380.47	388.89	375.25	298.28	293.47	281.53	294.24	291.88
Metal 3/4"	"	362.50	362.50	370.00	431.25	381.56	383.70	389.59	418.00	406.72	399.50	414.93	406.83	472.22	484.93	444.73
(18) Others																
Coffee (Seeds)	Kg.	—	—	—	26.50	26.50	18.00	—	—	22.50	20.25	21.33	23.33	25.75	27.44	24.46
Cocoa	"	26.22	35.00	27.00	25.00	28.31	18.00	20.50	—	12.00	16.83	—	—	—	—	—
Tea Leaves	"	—	—	—	—	—	2.53	2.61	2.63	3.02	2.70	2.37	2.71	2.70	2.94	2.68
Ground Nuts	"	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Chewing Tobacco (Jaffna)	50Kgs.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Gingelly oil	750Ml.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Brooms (Tin Bound)	100	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

DISTRICT AND ALL ISLAND PRODUCER PRICES—QUARTERLY AVERAGES—1982

Item	Unit	Mannar District					Amuradhapura District					Polonnaruwa District				
		1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Annual Average	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Annual Average	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Annual Average
		Rs. Cts.	Rs. Cts.	Rs. Cts.	Rs. Cts.	Rs. Cts.	Rs. Cts.	Rs. Cts.	Rs. Cts.	Rs. Cts.	Rs. Cts.	Rs. Cts.	Rs. Cts.	Rs. Cts.	Rs. Cts.	Rs. Cts.
(17) Building Materials																
Bricks	100	—	—	—	—	—	269.67	245.83	245.83	250.00	252.83	281.95	275.00	270.84	312.19	285.00
Sand	Cube	—	75.00	55.83	75.00	68.61	—	176.00	140.00	170.00	161.94	100.00	106.25	103.75	112.50	105.63
Rubble 6" X 9"	"	—	—	75.83	125.00	100.42	187.08	129.00	163.33	166.00	161.35	142.09	138.75	139.17	135.00	131.25
Metal 2"	"	—	—	260.00	—	260.00	298.65	245.83	235.83	245.83	259.04	222.78	224.17	237.50	225.00	227.36
Metal 3/4"	"	—	—	440.00	—	440.00	474.01	450.00	339.17	445.83	452.25	561.25	554.17	540.09	528.75	546.04
(18) Others																
Coffee (Seeds)	Kg.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cocoa	"	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tea Leaves	"	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ground Nuts	"	—	6.00	6.33	6.55	6.29	5.99	—	—	8.00	7.00	—	—	—	—	—
Chewing Tobacco (Jaffna)	50Kgs.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Gingelly Oil	750Ml.	—	—	—	—	—	21.83	22.00	21.33	22.00	21.79	—	—	—	—	—
Brooms (Tin Bound)	100	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

### 3. 現地建設事情についての刊行物の概要(B)

#### (1) 出版刊行物リスト

##### I 統計書資料

1. Statistical Pocket Book of the DEM.S.P, Sri Lanka 1986, (Dept. of Census and Staistics and Ministry of Plan Implementation)
2. Census of Population and Housing (Vol. 3) 1981 General Report (D.C.S.)
3. Price and Wage Statistics 1982 (Retail, Producer and Input Prices and Wages Statistics Dept Central Bank of Ceylon)
4. " 1983
5. " 1984
6. Economic & Social Statistics of Sri Lanka, Vol.I No. 2, 1978 (Statistics Dept. of C.B.C.)
7. " Vol. II No. 1, 1979
8. " Vol. II No. 2, 1979
9. " Vol. III No. 1, 1989
10. " Vol. III No. 2, 1980
11. " Vol. VIII, 1985 (C.B.S.)
12. Sri Lanka Socio-Economic Data 1986 (C.B.S.) Statistics Dept. of Central Bank of Sri Lanka

## II 調查報告資料

1. Public Investment 1986-1990 (National Planning Division (NPD) of Ministry of Finance & Planning)
2. Performance (Jan.- Sept. 1986) Ministry of Plan Implementation
3. Resource Development 1978-1982, Ministry of Lands & Land Development
4. The Architect in National Development
5. World Economic Survey 1985 (United Nations)
6. Report on Consumer Finances & Socio-Economic Survey 1981/82 Sri Lanka Part I (Statistics Dept. of C.B.C.)
7. Report on Consumer Finances & Socio-Economic Survey 1981/82 Sri Lanka Part II (Statistics Dept. of C.B.C.)
8. Central Bank of Ceylon - Review of Economy 1983 (C.B.C.)
9. Central Bank of Ceylon - Bulletin - 1986.11 (C.B.S. Publications)
10. Survey Analysis Series No. 1 1986.8 (Dept. of Statistics C.B.S.)

III 地図・法規

1. Pictorial Tourist Map of Colombo (Lake House Printers & Publishers LTD)
2. Pictorial Tourist map of Sri Lanka
3. Wages Boards Ordinance (1956 Revision)
4. Wages Board (Amendment) Act, No. 10 of 1980
5. Gazette Extraordinary, No. 423/16 1986.10.16
6. Subsidiary Legislation Under the Shop and Offices Employees (Regulation of Employment and Remuneration) Act 1956 Revision
7. Legislative Enactments - Workmen's Compensation Ordinance 1956 Revision
8. Employee's Provident Fund Act, No. 15 of 1958
9. Termination of Employment Workmen (Special Provisions) Act, No. 45 of 1971
10. Industrial Disputes (Amendment) Act, No. 39 of 1968
11. Industrial Disputes Act (Chapter 131) 1970
12. Termination of Employment of Workmen (Special Provisions) (Amendment) Law, No. 4 of 1976 of the National State Asswmbly (Certified on 29th March 1976)
13. Employee's Trust Fund Act, No. 46 of 1980
14. Employee's Trust Fund (Amendment) Act No. 3 of 1982
15. Payemnt of Gratuity Act, No. 12 of 1983
16. Urban Development Authority (Amendment) Act, No. 4 of 1982

IV 現地政府公共工事発注機関による資料

1. ICTAD Guidelines for Tender Procedures - Sri Lanka (two pieces)
2. ICTAD Conditions of Contract for Works of Building & Civil Engineering - Sri Lanka (two pieces)
3. ICTAD Specifications for Building Works - Sri Lanka (two pieces)
4. CITP Basic Course Carpentry Hand Book
5. CITP Advance Course Carpentry Hand Book
6. Survey Report of Third Tracer Study on Former Trainees Trained by "Construction Industry Training Project" (CITP) 1985.11
7. (CITP) Assessment of Training Needs in the Construction Industry, 1985.12 (Nat'l Inst. of Business Management)
8. *Introduction to Conditions of Contract tender Procedures and Specifications*, E.I. Munashinha
9. Output of Trainees CITP (P2)
10. Construction Industry Development Division - Quantity Surveying Unit - (Inst. for Construction Training & Development)
11. Construction Industry National Skill Standards for Masons
12. " Carpenters
13. " Electrical Wiremen
14. " Plumbers

15. Construction Industry National Skill Standards for Steel Fixer/Bar Bender
16. " Construction Supervisor
17. " Equipment Mechanics Class I
18. " Equipment Mechanics Class II
19. " Equipment Mechanics Class III
20. " Heavy Earthmoving Equipment Operators
21. " Method of Measurement of Building Works (SLS 573, 1982)
22. Name & Address of the Members of Association of Contractors
23. Administration Reports Department of Buildings 1984/5
24. Organization Chart, Department of Buildings 1986
25. Building Schedule of Rates, Department of Buildings
  - a) Analysis
  - b) Maintenance items with list of prices of materials
26. Statistical Bulletin on Housing & Construction, Ministry of Local Government Housing & Construction
27. Standard Methods of Measurement of Building Works in Ceylon, Department of Building (Imperial Units)
28. Methods of Measurement of Building Works, Bureau of Ceylon Standards (Metric Units)
29. Documents on Contract Administration, Department of Buildings



V. その他資料

1. Survey Report on Construction Industry in Sri Lanka - Phase I, Michael Joachin
2. " Phase II
3. Conditions of Engagement of Consultants & Scales of Professional Fees or Works Estimated to Cost Below RS. 10 Million
4. Construction Industry Directory '86 (Sri Lanka Institute of Architects)
5. Questionnaire for the Public Service (1 & 2) and General Contractor

(2) 情報及び刊行物の入手方法

: 現地聴き取り調査による。調査対象は p. 35 参照。

WHERE CAN WE LOCATE THIS INFORMATION & PUBLICATIONS:

- 1) **General economic conditions statistical information.**  
(eg. Gross Domestic Product, Inflation, Exchange Rate, Employment Rate, Wage Rate, Interest Rate, Industrial Production Index, Consumer Price Index, etc.)  
  
G(ICTAD) - Central Bank  
Department of Census & Statistics  
  
H(GOV'T) - Central Bank Report  
  
I(L) - Central Bank
  
- 2) **Construction industry statistical information.**  
(eg. Ratio of Public/Private Construction Activities, Materials Prices, Employment in the Construction Industry, Wage Rates)  
  
G(ICTAD) - Central Bank  
Ministry of Housing & Construction  
ICTAD  
  
H(GOV'T) - Central Bank Report  
Annual Report Department of Census & Statistics  
Statistical Bulletin - Ministry of Local Government  
Housing & Construction  
  
I(L) - Central Bank
  
- 3) **Construction cost statistical information.**  
(eg. Past records of Construction Costs, Price Book)  
  
G(ICTAD) - No price books.  
  
H(GOV'T) - Same as (2).  
  
I(L) - Department of Buildings
  
- 4) **Publications of guidelines for procurement of public projects.**  
(eg. Standard Conditions of Contract, Standard Method of Measurement for Building Works, Public Service Standing Order.)  
  
G(ICTAD) - There is not any accepted standard.  
ICTAD (CIPP)  
Standard Bureau - SMM  
  
H(GOV'T) - These are outlined in the financial regulations and the manual of procedures available to various state sector organisations. The Contract documents of Buildings department comprises of 7 documents. The Contracts documents published by the construction industry training project comprises of 8 documents, etc.  
  
I(L) - ICTAD  
Department of Building

#### 4. 実績コスト調査 (F)

- (1) 延床面積当り建築単価及び工期  
: 現地聴き取り調査による。調査対象は p. 35 参照。

##### Local Construction Cost per m<sup>2</sup> & Estimated Construction Period

It is assumed that the construction methods and the buildings finishings are made according to local standards. The building is 1,000 m<sup>2</sup> in size and 2 stories in height. The building includes utilities, but excludes furnishings and air-conditioning.

No.	ITEM	STRUCTURE	COST/M <sup>2</sup> MONTH							E(GOV'T)
			A(L)	B(L)	C(ML)	D(M)	E(M)	F(S)	G(CTAD)	
1.	Office Building	R.C.	4,400 /m <sup>2</sup> 18 mo.	5,560 /m <sup>2</sup> --- mo.	40,000 /m <sup>2</sup> 18 mo.	650 /m <sup>2</sup> 10 mo.	2,691 /m <sup>2</sup> -2,960 /m <sup>2</sup> 10 mo.	70 /m <sup>2</sup> 10 mo.	320 /m <sup>2</sup> 6-9 mo.	3,225 /m <sup>2</sup> 18 mo.
"	"	Brick	4,100 /m <sup>2</sup> 16 mo.	--- /m <sup>2</sup> --- mo.	(R.C. and Brick combined Avg. quality)	450 /m <sup>2</sup> 10 mo.	2,153 /m <sup>2</sup> -2,422 /m <sup>2</sup> 10 mo.	120 /m <sup>2</sup> 10 mo.	280 /m <sup>2</sup> 7 mo.	2,700 /m <sup>2</sup> 15 mo.
"	"	Steel	--- /m <sup>2</sup> --- mo.	--- /m <sup>2</sup> --- mo.	35,000 /m <sup>2</sup> --- mo. (Factory)	500 /m <sup>2</sup> 10 mo.	--- /m <sup>2</sup> --- mo.	750 /MT 10 mo.	--- /m <sup>2</sup> --- mo.	5,400 /m <sup>2</sup> 15 mo.
2.	House	R.C. (non-luxury finishes)	4,000 /m <sup>2</sup> 18 mo.	--- /m <sup>2</sup> --- mo.	--- /m <sup>2</sup> --- mo.	600 /m <sup>2</sup> 10 mo.	--- /m <sup>2</sup> --- mo.	70 /m <sup>2</sup> 10 mo.	260 /m <sup>2</sup> 9 mo.	3,800 /m <sup>2</sup> 24 mo.
"	"	Brick	3,900 /m <sup>2</sup> 15 mo.	--- /m <sup>2</sup> --- mo.	5,500 /m <sup>2</sup> 12 mo.	400 /m <sup>2</sup> 10 mo.	--- /m <sup>2</sup> --- mo.	125 /m <sup>2</sup> 10 mo.	240 /m <sup>2</sup> 9 mo.	3,225 /m <sup>2</sup> 24 mo.
"	"	Wood	--- /m <sup>2</sup> --- mo.	--- /m <sup>2</sup> --- mo.	--- /m <sup>2</sup> --- mo.	600 /m <sup>2</sup> 10 mo.	--- /m <sup>2</sup> --- mo.	1,200 /m <sup>2</sup> 10 mo.	--- /m <sup>2</sup> --- mo.	2,700 /m <sup>2</sup> 18 mo.

Note: D(M) - Structural costs only. Does not include finishings and services cost.

## 5. 詳細コスト分析 (G)

: 現地聴き取り調査による。調査対象は p.35 参照。

### (1) 仮設設備価格

#### Site Facilities (Services)

No.	ITEM	APPLICATION	COST/UNIT A(L)	G(ICTAD)	H(GOV'T)
1.	Power Supply	basic monthly	--- /mo.	--- /mo.	5,000 /mo.
		cost/hour	1.80 /KWH	3.00 /unit	--- /KWH
2.	Water	basic monthly	--- /mo.	--- /mo.	4,500 /mo.
		cost/gallon	0.03 /gal	--- /gal	--- /gal
3.	Telephone	basic monthly	75.00 /mo.	--- /mo.	2,500 /mo.
		local/minute	0.90 /min	3.00 /15 sec.	--- /min
4.	Telex	basic monthly	--- /mo.	--- /mo.	5,000 /mo.
		installation to site office	--- inst	--- /inst	--- /inst

\*Note: B(L), C(ML), D(M), E(M), F(S) companies did not respond to these questions.

(2) 仮設建物及び敷地測量

Preliminaries

It is assumed that the project site is to be located in the central area of the city and the total floor area is 3,000 m<sup>2</sup>.

NO.	ITEM	COST/UNIT			
		A(L)	B(L)	G(ICT AD)	H(GOV'T)
1.	<u>Temporary Site Office</u> Temporary site office for the Contractor and Consultant's representatives (10m x 8m).	1,500 m <sup>2</sup>	1,185 /m <sup>2</sup>	100 /m <sup>2</sup>	850 /m <sup>2</sup>
2.	<u>Temporary Storage Shed</u> Temporary site storage shed for construction materials (6m x 10m).	1,100 m <sup>2</sup>	750 /m <sup>2</sup>	80 /m <sup>2</sup>	750 /m <sup>2</sup>
3.	<u>Temporary Enclosures</u> Barbed wire with wooden post H=1.8m at 1.8m intervals.	160 m	33 /m	19 /m	125 /m
4.	<u>Site Survey</u> The boundaries of the plot shall be determined and marked out.	1 m <sup>2</sup>	1,500 /day (1 day surveyor with his gang)	--- /m <sup>2</sup>	200 /m <sup>2</sup>

\*Note: C(ML), D(M), E(M), F(S) companies did not respond to these questions.

## 6. 現行通用価格及び複合単価\*(H)

: 現地聞き取り調査による。調査対象は p. 35 参照。

### (1) 資材単価

#### Construction Materials Cost

Assumption: These prices should include the delivery and unloading costs to the specific site.

No.	ITEM	APPLICATION	PRICE/UNIT A(L)	B(L)	C(DL)	D(M)	E(M)	F(S)	G(ICTAD)	H(GOV'T)
1.	Portland Cement.		2,400 /ton	2,160 /ton	110 /50kg	2,300 /ton	108 /50kg (+10 Rs. for transport)	2,200 /ton (local)	2,200 /ton	2,300 /ton
2.	Course aggregate	gravel	430 /m <sup>3</sup> (3/4"granite)	375 /m <sup>3</sup>	335 /m <sup>3</sup>	110 /m <sup>3</sup>	424 /m <sup>3</sup> (incl. 400 Rs. transport)	350 /m <sup>3</sup>	370 /m <sup>2</sup>	160 /m <sup>2</sup>
3.	Sand	river sand	120 /m <sup>3</sup>	125 /m <sup>2</sup>	115 /m <sup>3</sup>	105 /m <sup>3</sup>	141 /m <sup>3</sup> (incl. trans)	125 /m <sup>3</sup>	105 /m <sup>2</sup>	140 /m <sup>2</sup>
4.	Reinforcement steel bars	round bar 20φ	14,000 /ton	11,500 /ton	13,500 /ton (torsted)	20,000 /ton	13,000 /ton (high yield, excl. trans)	850 /ton	10,200 /ton (at site)	15,000 /ton
5.	"	ribbed bar 20φ	15,000 /ton	12,400 /ton	13,500 /ton	20,000 /ton	12,500 /ton (mild steel, incl. trans)	850 /ton	12,255 /ton	16,000 /ton
6.	Brick	common brick one-brick thick	600 /1000 pcs.	675 /1000 pcs.	600 /1000 pcs.	575 /1000 pcs.	675 /1000 -750 pcs. (incl. trans)	600 /1000 pcs.	550 /1000 pcs.	600 /1000 pcs.
7.	"	facing bricks one-brick thick	3,000 /1000 pcs.	1,950 /1000 pcs.	2,000 /1000 pcs.	4,700 /1000 pcs.	---	---	2,400 /1000 -3,500 pcs.	3,000 /1000 pcs.
8.	Timber	hardwood	18,000 /m <sup>3</sup>	12,400 /m <sup>3</sup>	11,500 /m <sup>3</sup> (class 1)	8,850 /m <sup>3</sup>	7,887 /m <sup>3</sup> (2"x4" excl. transport)	9,650 /m <sup>3</sup>	5,250 /m <sup>3</sup>	14,000 /m <sup>3</sup>
9.	Plywood		225 /m <sup>2</sup> (12mm thick)	190 /m <sup>2</sup> (12mm thick)	800 /pc. (9mm 8"x4")	100 /m <sup>2</sup> (6mm thick)	215 /m <sup>2</sup> (12mm thick)	165 /m <sup>2</sup>	140 /m <sup>2</sup> (3 ply)	100 /m <sup>2</sup>
10.	Plaster	finish plaster.	---	---	35 /kg (lime finish)	---	---	2.50 /m <sup>2</sup> (20mm thick)	45 /m <sup>2</sup> (20mm thick)	4 /kg
11.	Glazing	float glass	900 /m <sup>2</sup> (5mm)	275 /m <sup>2</sup>	100 /m <sup>2</sup> (clear Glass)	161 /m <sup>2</sup>	161 /m <sup>2</sup> -269 (import)	---	450 /m <sup>2</sup> (3/16" thick)	150 /m <sup>2</sup>
12.	Paint	emulsion paint	60 /l	65 /l	80 /l	70 /l	65 /l (local)	90 /l	80 /l	90 /l

(2) 資材状況

MATERIALS AND EQUIPMENT:

1) What is the standard method of procurement?

G(ICTAD) - N/R

H(GOV'T) - From open market, based on lowest quoted prices for specified items for small quantities or on tenders for larger quantities.

I(L) - Government controls prices.

2) What materials utilized in this country are usually imported? And from what countries are they imported?

G(ICTAD) - Sheet glass. Other materials produced locally and some are imported.

H(GOV'T) - Steel, cement, glass, timber, sanitary fittings, electrical items, special flooring materials, locks, etc.  
From Japan, Malaysia, U.K. and Western European countries.

I(L) - Steel - South Africa  
Cement - Japan and Indonesia  
Timber - Burma

3) Are main structural materials (such as, cement, aggregate, bricks, timber, etc.) available locally?

G(ICTAD) - Yes.

H(GOV'T) - Available.

I(L) - Yes, available locally.

Note: N/R = Not Replied

MATERIALS AND EQUIPMENT: (cont'd)

- 4) Are there shortages of any necessary materials within this country?  
If so, what do you suggest as an option?

G(ICTAD) - No.

H(GOV'T) - Other than aggregates and bricks most of the materials are  
in short supply, particularly timber, steel, cement, lime.

I(L) - If there is a shortage, import materials.

- 5) What standards for materials and equipment are prevailing in this  
country?

G(ICTAD) - To be obtained from the Sri Lanka Standards Institute.

H(GOV'T) - British Standards and Sri Lankan Standards.

I(L) - Standards Bureau.

- 6) Is there an index of the main structural materials for this country?  
If so, where can this index be acquired?

G(ICTAD) - N/R

H(GOV'T) - Yes. With the Bureau of Standards Sri Lanka.

I(L) - Cost index - Ministry L.G.H.C.  
Central Bank of Ceylon

Note: N/R = Not Replied



(3) - 1 勞務賃金

Situation of Labor Cost

1) "All in rates" labour items:

	B(L)	C(ML)	E(M)	F(S)	G(ICTAD)	H(GOV'T)
A) GUARANTEED MINIMUM WEEKLY EARNINGS						
1) Basic rate		Daily rate 30.00	Gov't rate 27.00/day	50.00	200.00	
2) Guaranteed minimum bonus (or Contractor's bonus allowance)	1 month salary			10% overhead		
B) ANNUAL EMOLUMENTS						
1) Inclement weather						Governed by Labour Regula- tions of the Department of Labour and Subject to Change
2) Non-productive overtime						
3) Sick pay						
4) Trade supervision						
5) Working rule agreement						
C) OVERHEADS IN EMPLOYING LABOUR						
1) C.I.T.B. Training contribution						As a main contractor, please contract Sri Lanka In- surance Corporation Employers Provident Fund, Employees Trust Trust Fund EPF- 12% ETF- 3%
2) National insurance contribution						
3) Annual holiday credit		25 - 40% add				
4) Public holiday credit						
5) Severance payments and sundry costs						
6) Employers liability						

Note \* "All in rates" - A compounded rate which includes payments to operatives and the costs which arise directly from the employment of labour. Variable costs, such as travelling time or abnormal overtime, are normally excluded.

\*\* A(L), D(X) did not respond to these questions.

(3) - 2 勞務賃金

Situation of Labor Cost (cont'd)

NO	ITEM	GRADE	RATING			WAGE / DAY			B(L)			C(M)			D(M)			E(M)			F(S)			G(ICTAD)			H(GOV'T)
			A(L)	B(L)	C(M)	D(M)	E(M)	F(S)	G(ICTAD)	H(GOV'T)	Normal Rate																
2)	Trade Name																										
1.	Common Labourer																										
	A	50.00 /day	48.00 /day	50.00 /day	50.00 /day	---	50.00 /day	---	50.00 /day	---	50.00 /day	---	50.00 /day	---	50.00 /day	---	50.00 /day	---	50.00 /day	---	50.00 /day	---	50.00 /day	---	50.00 /day	---	50.00 /day
	B	50.00 /day	---	45.00 /day	45.00 /day	45-50	45.00 /day	45-50	45.00 /day	45-50	45.00 /day	45-50	45.00 /day	45-50	45.00 /day	45-50	45.00 /day	45-50	45.00 /day	45-50	45.00 /day	45-50	45.00 /day	45-50	45.00 /day	45-50	45.00 /day
	C	45.00 /day	---	40.00 /day	40.00 /day	---	35.00 /day	---	35.00 /day	---	35.00 /day	---	35.00 /day	---	35.00 /day	---	35.00 /day	---	35.00 /day	---	35.00 /day	---	35.00 /day	---	35.00 /day	---	35.00 /day
2.	Carpentry																										
	A	100.00 /day	96.00 /day	110.00 /day	110.00 /day	90-100	125.00 /day	90-100	125.00 /day	90-100	125.00 /day	90-100	125.00 /day	90-100	125.00 /day	90-100	125.00 /day	90-100	125.00 /day	90-100	125.00 /day	90-100	125.00 /day	90-100	125.00 /day	90-100	125.00 /day
	B	70.00 /day	72.00 /day	70.00 /day	70.00 /day	65-70	75.00 /day	65-70	75.00 /day	65-70	75.00 /day	65-70	75.00 /day	65-70	75.00 /day	65-70	75.00 /day	65-70	75.00 /day	65-70	75.00 /day	65-70	75.00 /day	65-70	75.00 /day	65-70	75.00 /day
	C	50.00 /day	48.00 /day	50.00 /day	50.00 /day	45-50	65.00 /day	45-50	65.00 /day	45-50	65.00 /day	45-50	65.00 /day	45-50	65.00 /day	45-50	65.00 /day	45-50	65.00 /day	45-50	65.00 /day	45-50	65.00 /day	45-50	65.00 /day	45-50	65.00 /day
3.	Masonry																										
	A	100.00 /day	96.00 /day	110.00 /day	110.00 /day	90-100	125.00 /day	90-100	125.00 /day	90-100	125.00 /day	90-100	125.00 /day	90-100	125.00 /day	90-100	125.00 /day	90-100	125.00 /day	90-100	125.00 /day	90-100	125.00 /day	90-100	125.00 /day	90-100	125.00 /day
	B	70.00 /day	72.00 /day	70.00 /day	70.00 /day	65-70	75.00 /day	65-70	75.00 /day	65-70	75.00 /day	65-70	75.00 /day	65-70	75.00 /day	65-70	75.00 /day	65-70	75.00 /day	65-70	75.00 /day	65-70	75.00 /day	65-70	75.00 /day	65-70	75.00 /day
	C	50.00 /day	48.00 /day	50.00 /day	50.00 /day	45-50	65.00 /day	45-50	65.00 /day	45-50	65.00 /day	45-50	65.00 /day	45-50	65.00 /day	45-50	65.00 /day	45-50	65.00 /day	45-50	65.00 /day	45-50	65.00 /day	45-50	65.00 /day	45-50	65.00 /day
4.	Electrician																										
	A	150.00 /day	108.00 /day	110.00 /day	110.00 /day	100-125	125.00 /day	100-125	125.00 /day	100-125	125.00 /day	100-125	125.00 /day	100-125	125.00 /day	100-125	125.00 /day	100-125	125.00 /day	100-125	125.00 /day	100-125	125.00 /day	100-125	125.00 /day	100-125	125.00 /day
	B	90.00 /day	72.00 /day	70.00 /day	70.00 /day	---	75.00 /day	---	75.00 /day	---	75.00 /day	---	75.00 /day	---	75.00 /day	---	75.00 /day	---	75.00 /day	---	75.00 /day	---	75.00 /day	---	75.00 /day	---	75.00 /day
	C	60.00 /day	48.00 /day	50.00 /day	50.00 /day	---	65.00 /day	---	65.00 /day	---	65.00 /day	---	65.00 /day	---	65.00 /day	---	65.00 /day	---	65.00 /day	---	65.00 /day	---	65.00 /day	---	65.00 /day	---	65.00 /day

\*Note: G(ICTAD) - (A) Master Carpenter = normal carpenter  
 Carpentry (B) Skilled Helper = semi-skilled  
 Masonry (B) Skilled Helper = semi-skilled

Note: Comparative Rating of Worker's Skills and Wages

Above Average..... A

Average ..... B

Below Average ..... C

(4) 勞務狀況

CONSTRUCTION LABOUR:

1) How are the labour trades categorized? (ie. carpentry, electrician, etc.)

G(ICTAD) - Mason  
Carpenter  
Electrician  
Plumber  
Steel fixer  
Labourer

H(GOV'T) - Special Labour ) Masons, Carpenters, Plumbers,  
Skilled Labour ) Tilers, Fitters, Bar Benders,  
Unskilled Labour) Electricians, etc.

I(L) - Skilled - carpentry, electrician, etc.

2) What is the general method of labour procurement?

G(ICTAD) - Contractor - through labour contractors or direct  
engagement.  
Public sector - through advertisements.

H(GOV'T) - From the open labour market.

I(L) - For larger project - advertisements.

3) What is the wage differentiation for low versus high quality skilled labourers?

G(ICTAD) - Private sector - about 200% above  
Public sector - about 60% above

H(GOV'T) - High quality skilled labourers - 85.00 dollars/day  
Unskilled labourers - 40.00 dollars/day

I(L) - Skilled labourers - 80.00 Rs/day  
Unskilled labourers - 40.00 Rs/day

CONSTRUCTION LABOUR: (cont'd)

- 4) **What is the level of availability for these skilled workers? If a sufficient supply of labour is not available, what do you suggest as an option?**

G(ICTAD) - Skilled labour available.

H(GOV'T) - Optimum level required for the construction industry available locally.

I(L) - Carpenters and masons are in shortage.

- 5) **Is there a National Working Rule Agreement for this country?**

G(ICTAD) - There is a government agreement.

H(GOV'T) - Yes, formulated by the labour department.

I(L) - There are labour regulations. (minimum wage 30 Rs/day)  
(market price 60 Rs/day)

**If yes, what is your estimate for Labour cost based on that Working Rule Agreement?**

G(ICTAD) - Estimates are usually high.

H(GOV'T) - 25% of total cost estimate.

I(L) - N/R

- 6) **Could you inform us of your standard working hours, dates of legal holidays and number of holidays annually?**

G(ICTAD) - 8 hours per day  
Saturdays, Sundays, holidays and other gov't holidays - 132 days

Note: N/R = Not Replied

CONSTRUCTION LABOUR: (cont'd)

- H(GOV'T) - 8 hours per day including tea break and lunch interval.  
Legal holidays - casual - 21 days  
vacation - 24 days  
Other holidays - public holidays - 26 for 1987  
Saturdays & Sundays - 104 for 1987
- I(L) - 7:30 a.m. - 6:00 p.m.  
45 days holiday + 12 days (full moon days) + 10 - 15 days  
(public holidays)

7) How do the wages of the average skilled and unskilled construction workers compare to those of other industries?

- G(ICTAD) - Favorably.
- H(GOV'T) - The wages of the Construction industry are comparable to the Mechanical industry and these are much higher than the Plantation industry labour, eg. (tea, rubber, etc.)
- I(L) - N/R

**If there is a considerable difference between the construction industry and another industry in your country, please note the industry and the difference (ie. higher or lower and the average difference).**

- G(ICTAD) - N/R
- H(GOV'T) - The average Construction industry labourer gets about 45 Rs. per day, whereas the Plantation industry labourer gets about 30 Rs. per day.
- I(L) - N/R

Note: N/R = Not Replied

(5) 労務歩掛り

Labour Constants

It is assumed that one working day includes 8 hours.

No. TRADE	APPLICATION	AVERAGE-OUTPUT PER MAN-DAY							H (GOV'T)
		A(L)	B(L)	D(M)	E(M)	F(S)	G(CTAD)	H(GOV'T)	
1. Excavation	hand excavation 2m deep foundation base	1.5 /m <sup>3</sup> /md (common labour only)	0.67 /m <sup>3</sup> /md	1.0 /m <sup>3</sup> /md	---	0.75 /m <sup>3</sup> /md	2.4 /m <sup>3</sup> /md	1.5 /m <sup>3</sup> /md	
2. Concreting	using a mixer reinforced concrete floors	9.0 /m <sup>3</sup> /md (plus 10 common labourers)	1.5 /m <sup>3</sup> /md	3.88 /m <sup>3</sup> /md	1.5 /m <sup>3</sup> /md ready-mixed	1.0 /m <sup>3</sup> /md	0.40 /m <sup>3</sup> /md	4.5 /m <sup>3</sup> /md	
3. Form Work	floor slab	2.5 /m <sup>2</sup> /md (plus 2 helpers or common lab.)	Skilled - 1/6 Unskilled - 1/3	1.0 /m <sup>2</sup> /md	---	1.5 /m <sup>3</sup> /md Basement	4.0 /m <sup>3</sup> /md	0.5 /m <sup>3</sup> /md	
4. Reinforcement Steel Work	columns steel fixing	0.1 /t/md (plus 2 common labourers)	13.0 /ton/md	40.0 /t/md	---	.05 /t/md	.05 /t/md	50 /t/md	
5. Brick Work	one brick wall common bricks	6.0 /m <sup>2</sup> /md (plus 1 common labourer)	Skilled - 1/3 Unskilled - 2/5	0.45 /m <sup>2</sup> /md	8.0 /m <sup>2</sup> /md	7.0 /m <sup>2</sup> /md	1.6 /m <sup>2</sup> /md	0.5 /m <sup>2</sup> /md	
6. Plastering to Wall	20mm thick	7.0 /m <sup>2</sup> /md (plus 1 common labourer)	Skilled - 1/6 Unskilled - 1/5	0.45 /m <sup>2</sup> /md	---	10 /m <sup>2</sup> /md 7 /m <sup>2</sup> /md rough & finishing	1.6 /m <sup>2</sup> /md	0.5 /m <sup>2</sup> /md	

\*Note: Concreting - includes mixing, transport & placing.

\*\*Note: A(L) - items 2 - 6 "Per skilled Man-Day"

\*\*Note: C(ML) - Did not respond to these questions.

## 7. 参照用索引 (Z)

### (1) 参照刊行物

1. Sri Lanka Socio-Economic Data 1986
2. Central Bank of Ceylon, Review of The Economy 1983
3. Economic & Social Statistics of Sri Lanka 1985
4. Statistical Pocket Book of The Democratic Socialist Republic of Sri Lanka 1986
5. Price and Wage Statistics 1984
6. Economic & Social Statistics of Sri Lanka 1979
7. Report on Consumer Finances and Socio-Economic Survey 1981/82 Sri Lanka 1984
8. Price and Wage Statistics Retail Producer and Input Price and Wages 1982

### (2) 現地調査対象者リスト

#### SRI LANKA QUESTIONNAIRE COMPANY LIST

A(L)	Walker, Sons & Company Ltd.
B(L)	Link Engineering Ltd.
C(ML)	Tudawe Brothers Ltd.
D(M)	ADS Engineering Ltd.
E(M)	Construction Liason Ltd.
F(S)	Jayartine
G	ICTAD
H(GOV'T)	Department of Building Sri Lanka
I(L)	State Engineering Corporation of Sri Lanka

L = Large-size company  
ML = Medium-large size company  
M = Medium-size company  
S = Small-size company







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