

Oktober/November 1993

RMK 351 - Ekonomi Bangunan 2

Masa : 3 jam

Sila pastikan bahawa kertas peperiksaan ini mengandungi DUA PULUH ENAM muka surat yang tercetak sebelum anda memulakan peperiksaan ini.

Jawab Soalan SATU dan TIGA Soalan Lain.

1. ABC Sdn. Bhd. bercadang membina sebuah kompleks pejabat dan komersial bagi menampung jangkaan Pembangunan di Langkawi, Kedah.

Cadangkan bangunan ini berdasarkan kepada data-data awal dalam Lampiran A.

- i) Sediakan anggaran kos untuk cadangan bangunan ini dengan menggunakan analisis kos (Lampiran B) dan data-data pelarasan (Lampiran C). Anggaran kos bangunan yang di - cadangkan perlu diisi dengan menggunakan Pelan Kos di - Lampiran D. Isikan Indeks Pelarasan di dalam Lampiran C.

(25 markah)

- ii) Berdasarkan kepada pengetahuan anda, bincangkan faktor-faktor yang boleh mempengaruhi kos tender bangunan tersebut, dengan mengambilkira faktor lokasi.

(Ceraikan Lampiran C (ms 14) dan Lampiran D untuk di-hantar).

(15 markah)

2. Bincangkan permasalahan yang wujud dalam penggunaan Indeks Tender, Indeks Lokasi, Indeks Bangunan dalam proses perancangan dan pengawalan kos bangunan (terutama dalam penyediaan pelan kos bangunan yang dicadangkan) di Malaysia.

Jawapan anda mestilah menunjukkan kefahaman anda tentang:

- i) Penggunaan jenis-jenis indeks.
- ii) Proses perancangan dan pengawalan kos.
- iii) Permasalahan yang wujud di Malaysia.

(20 markah)

3. Konsep pengurusan nilai, kejuruteraan nilai dan pengkosan kitar hayat adalah tiga konsep mutakhir dalam perancangan dan pengawalan kos bangunan.

Jelaskan ketiga-tiga konsep ini dengan mengambikira:

- (i) Tujuan konsep-konsep tersebut diutarakan.
- (ii) Persamaan yang wujud antara ketiga-tiga konsep tersebut
- (iii) Masalah dalam applikasi konsep tersebut di - Malaysia.

(20markah)

4. Pemajuan sesebuah projek memerlukan penganalisan, pelunjuran dan pengiraan kos, risiko, pulangan dan kekangan yang bakal dihadapi. Kajian kemungkinan adalah salah satu metodologi yang merangkumi aspek-aspek di atas.

Bincangkan masalah yang boleh wujud dan perlu diambikira dalam kajian kemungkinan projek pembinaan hotel bertaraf antarabangsa di Pulau Tioman, Pahang.

(20 markah)

5. Jelaskan maksud terminologi-terminologi berikut:

- (i) Indeks
- (ii) Perancangan Kos
- (iii) Analisis Kos
- (iv) Ekonomi Bangunan
- (v) Kajian Kemungkinan

(20 markah)

6. Bincangkan faktor-faktor yang boleh mempengaruhi kos bangunan dari aspek-aspek

- (a) Angkaubah (Pembolehkan) Rekabentuk
- (b) Kaedah Pembinaan

Untuk HANYA salah satu dari bangunan berikut:

- (i) Rumah Kos Rendah
- (ii) Bangunan Komersil
- (iii) Bangunan Hotel

(20 markah)

LAMPIRAN ACADANGAN MEMBINA DAN MENYIAPKAN BANGUNAN PEJABAT DAN KOMERSIL

1. Lokasi - Langkawi
2. Cadangan Bangunan
 - a) Bilangan Tingkat - 4 tingkat dan 1 basement
 - b) Bentuk Bangunan - mestilah ekonomikal
 - c) Kualiti - seperti analisis kos
 - d) Tinggi Tingkat - seperti analisis kos

3. Pecahan Keperluan Ruang

| | JENIS RUANG | KELUASAN (m2) |
|----|----------------------------------|---------------------|
| 1. | Keluasan Lantai Pejabat Bersih | 5000 |
| 2. | Keluasan Lantai Komersil Bersih | 30% dari (1) |
| 3. | Keluasan Lantai Ansilari | 5% dari (1 dan 2) |
| 4. | Keluasan Lantai Sirkulasi | 30% dari (1 dan 2) |
| 5. | Keluasan Lantai Penyekat Dalaman | 4% dari (1,2,3 & 4) |

4. Kos Tambahan Yang Dijangka

- a) Pengurangan 25% dari kos kerja luar dari analisis kos.
- b) Kos bangunan di Langkawi lebih 25% dari tinggi dari kos bangunan ditempat lain di Kedah.

LAMPIRAN B

| |
|---------------------------|
| 3-Administrative Building |
| A-3-11420 |

ELEMENTAL COST ANALYSIS

| | |
|--|-------------------------|
| Job Title: One Block 4 Storey Office Complex | Client: Semi Government |
| Location: Penang | Tender Date: May 1991 |

INFORMATION ON TOTAL PROJECT

| Project and Contract information | | | |
|--|-----------------------------------|--|------------|
| Project Details and site conditions : Construction of 4 Storey Office Building on Filled Ground | | Contact PWD Form 203 (Rev 1/83) with Quantities | |
| Market Conditions: Good | | | |
| Contract Particulars | | Competitive Tender List | |
| Type of Contract: PWD Form 203 (Rev 1/83) | Cost Fluctuation Yes [] No [/] | MR | INT (JV)/L |
| | Government [/] | 11,495,334.01 | L |
| Basis of Tender: | Private | 11,868,270.77 | L |
| BQ [/] Open/Selected [/] | | 12,611,211.35 | L |
| | Provisional Sums MR 35,000.00 | 12,714,860.04 | L |
| App. BQ [] Negotiated [] | Prime Cost sums MR 3,530,000.00 | 12,762,370.76 | L |
| | Preliminaries MR 136,536.00 | 13,346,922.02 | L |
| SR/SD [] Serial [] | Contingencies MR 0.00 | 13,904,869.19 | L |
| | Contract Sum MR 11,495,334.01 | 14,725,288.06 | L |
| Contract period stipulated by Client: 10 months | | | |
| Contract period offered by builders: 10 months | | | |
| Numbers of Tenders issued: 10 | | | |
| Numbers of Tenders received: 8 | | | |

ANALYSIS OF SINGLE BUILDING

| Design/shape information | | | |
|---|--------------------------------|---------------------------------|-------|
| Accommodation and design features: Office spaces mainly on all levels including services area | | | |
| Areas: | Functional Unit : | Design/Shape | |
| Lower Ground Floor 0.00 M2 | 8000 M2 Usable Area | Percentage of Gross Floor Area: | |
| Ground Floor 3350.00 M2 | External Wall area = 4463 | a) below ground floor | % |
| Upper Floor 8060 M2 | Gross Floor Area 11420 | b) Single-Storey construction | % |
| Gross Floor Area 11420 M2 | = 0.391 | c) two-storey construction | % |
| Usable Area 8000 M2 | Storey heights | d) three storey construction | % |
| Circulation Area 1200 M2 | Average below ground floor - m | e) -4 storey construction | 100 % |
| Ancillary Area 2010 M2 | at ground floor 4.60 m | | |
| Internal division 210 M2 | above ground floor 3.65 m | | |
| Gross Floor Area 11420 M2 | | | |
| Floor spaces not enclosed 157.0 M2 | | | |
| Roof Area 2176.0 M2 (structural and plant rooms) | | | |

Brief Cost Information

| | | |
|---------------------------------|------------------|--|
| Contract Sum | MR 11,495,334.01 | Functional unit (Tender \$ 1,436.92 per M2 usable area |
| Provisional sums | MR 0.00 | cost excluding (|
| Prime Cost sums | MR 3,530,000 | external works (|
| Preliminaries | MR 136,536 being | 1.24% of remainder |
| Contingencies | MR 0.00 being | 0.0% of Contract sum |
| Contract sum less Contingencies | MR 11,495,334.01 | |

LAMPIRAN B

| INSTITUTION OF SURVEYORS, MALAYSIA BUILDING COST INFORMATION CENTRE ELEMENT COST ANALYSIS-Form 2 GROSS FLOOR AREA 11420M2 | | | | | | | PROJ REF A | | |
|--|------------------------------|--------------------------------|---------------------|-----------------------|------------------------|-----------------------|----------------------|--------------------|----------|
| SUMMARY OF ELEMENT COSTS | | | | | | | TENDER DATE MAY 1991 | | |
| NO. | ELEMENT | Preliminaries Shown Separately | | | | | Reinforced Concrete | Reinforcement (kg) | Formwork |
| | | Total Cost Element(\$) | Cost Per M GFA (\$) | Element Unit Quantity | Element Unit Rate (\$) | Element Ratio per GFA | | | |
| 1 | SUBSTRUCTURE | | | | | | | | |
| 1A | Piling | 738,073 | 64.63 | 6288 | 117.38 | 0.55 | | | |
| 1B | Work Below lowest Floor | 716,576 | 62.75 | 3171 | 225.98 | 0.26 | 1924 | 116007 | |
| | Group Element Total | 1,454,649 | 127.38 | | | | | 3874 | |
| 2 | SUPERSTRUCTURE | | | | | | | | |
| 2A | Frame | 732,469 | 64.14 | 8087 | 90.57 | 0.71 | 1329 | 182267 | |
| 2B | Upper Floor | 591,823 | 51.82 | 8087 | 73.18 | 0.71 | 1308 | 51018 | |
| 2C | Roof | 458,247 | 40.13 | 2716 | 168.72 | 0.24 | 549 | 44655 | |
| 2D | Stairs | 59,577 | 5.22 | | | | | 4997 | |
| 2E | External Walls | 162,060 | 14.19 | 3851 | 42.09 | 0.34 | | | |
| 2F | Windows & External Doors | 595,334 | 51.26 | 612 | 956.43 | 0.05 | | | |
| 2G | Internal Wall & Partitions | 148,078 | 12.97 | 3395 | 43.62 | 0.30 | | | |
| 2H | Internal Doors | 88,758 | 7.93 | 278 | 303.48 | 0.02 | | | |
| | Group Element Total | 2,821,345 | 247.05 | | | | | | |
| 3 | FINISHES | | | | | | | | |
| 3A | Internal wall Finishes | 660,894 | 57.87 | 10785 | 61.28 | 0.94 | | | |
| 3B | Internal Floor Finishes | 353,087 | 30.92 | 10978 | 32.16 | 0.86 | | | |
| 3C | Internal Ceiling Finishes | 347,668 | 30.44 | 10437 | 33.31 | 0.91 | | | |
| 3D | External Finishes | 138,038 | 12.09 | | | | | | |
| | Group Element Total | 1,499,685 | 131.32 | | | | P.C. Sum Allowed | Tendered Sums | |
| 4 | FITTING&FURNISHINGS | 208,373 | 18.25 | | | | | | |
| 5 | SERVICES | | | | | | | | |
| 5A | Sanitary Appliances | 62,982 | | | | | | | |
| 5B | Plumbing Installation | 90,325 | 7.91 | | | | | | |
| 5C | Refuse Disposal | | | | | | | | |
| 5D | Air Conditioning and | 1,700,000 | 148.86 | | | | | | |
| 5E | Electrical Installation | 750,000 | 65.67 | | | | | | |
| 5F | Fire Protection Installation | 400,000 | 35.03 | | | | | | |
| 5G | Lift&Conveyer Installation | 180,000 | 15.76 | | | | | | |
| 5H | Communication Installation | | | | | | | | |
| 5I | Special Installation | | | | | | | | |
| 5J | Builder's Profit&Attendance | 45,450 | 3.98 | | | | | | |
| 5K | Builder's Work In | 35,000 | | | | | | | |
| | Group Element Total | 3,263,757 | 285.78 | | | | | | |
| | Subtotal exc.External | 9,248,529 | 809.95 | | | | | | |
| 6 | EXTERNAL WORKS | | | | | | | | |
| 6A | Site Works | 1,192,530 | 104.42 | | | | | | |
| 6B | Drainage | 330,226 | 28.92 | | | | | | |
| 6C | External Services | 474,141 | 41.52 | | | | | | |
| 6D | Ancillary Buildings | 113,372 | 9.93 | | | | | | |
| 6E | Recreational Facilities | | | | | | | | |
| | Group Element Total | 2,110,269 | 184.79 | | | | | | |
| 7 | Preliminaries | 136,536 | 11.96 | | | | | | |
| | Total (less Contingencies) | 11,495,334 | 1,008.80 | | | | | | |

| |
|------------------------------|
| 3 - Administrative Buildings |
| A - 3 - 11420 |

BRIEF SPECIFICATION

LAMPIRAN B

JOB TITLE: One Block 4 Storey Office Complex
 LOCATION: Penang

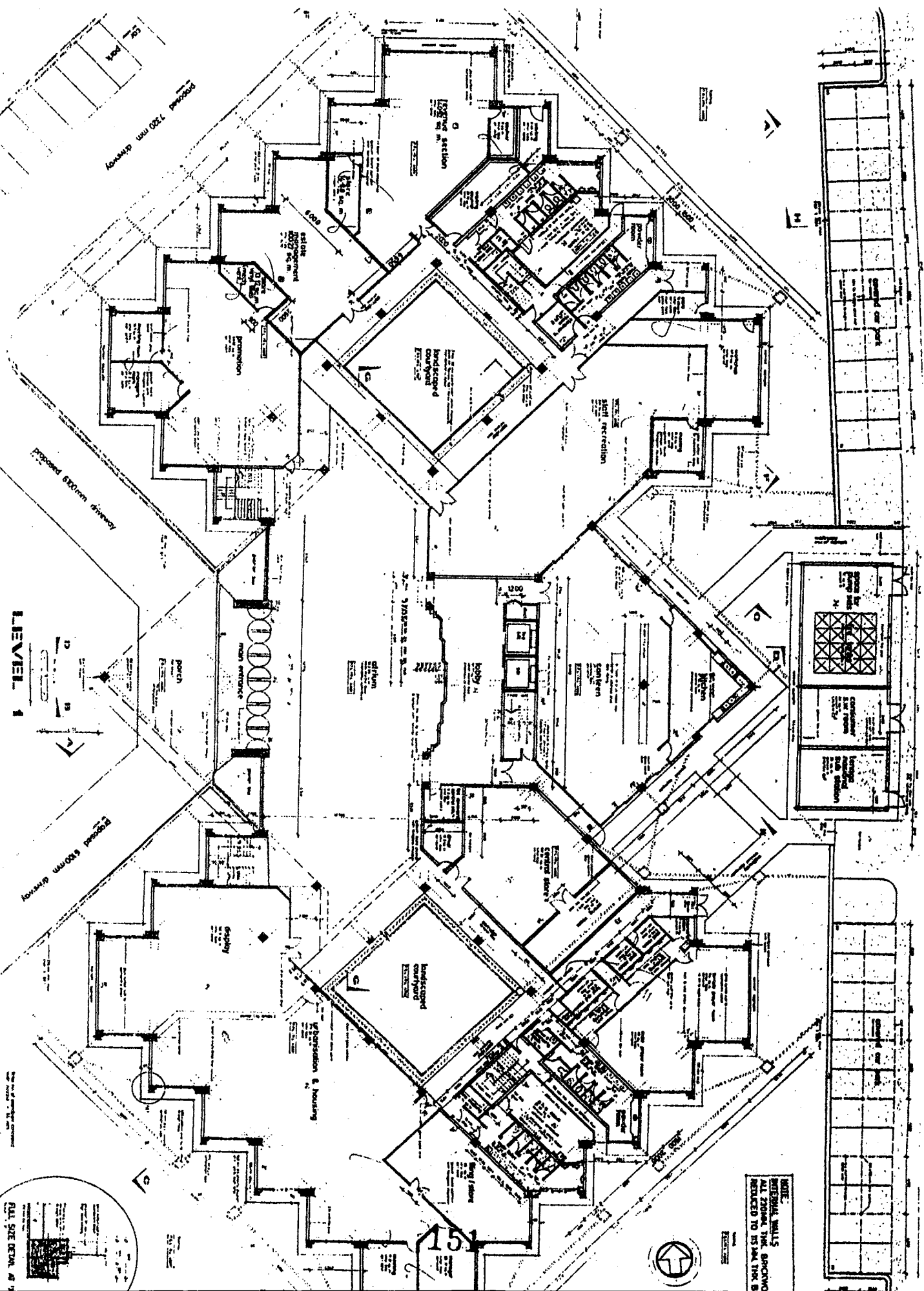
| GROSS FLOOR AREA : 11420 m2 | | TENDER DATE: May 1991 |
|---------------------------------|---|-----------------------|
| ELEMENT | SPECIFICATION | |
| 1. SUBSTRUCTURE | | |
| 1A. Piling | Spun concrete piles -30m depth | |
| 1B. Work Below Lowest Floor | R.C. pile caps, ground beams, 125mm. ground slab with hardcore | |
| 2. SUPERSTRUCTURE | | |
| 2A. Frame | R.C. columns and beams | |
| 2B. Upper Floors | R.C. floors and beams | |
| 2C. Roofs | R. C. flat roofs, roof beams and sloping roof beams. Metal roof decking. | |
| 2D. Stairs | R.C. staircase construction. Timber handrails and mild steel balustrading | |
| 2E. External Walls | One brickwall in common clay bricks | |
| 2F. Windows & External Doors | Aluminium framed windows and doors, fire doors and timber panel doors | |
| 2G. Internal Walls & Partitions | Half brickwall in common clay bricks. | |
| 2H. Internal Doors | Timber panel doors and aluminum framed doors | |
| 3. FINISHES | | |
| 3A. Internal Wall Finishes | Walcrete and sand plaster and painting. Wall paper to some areas. Ceramic wall tiles to toilet and wash area. | |
| 3B. Internal Floor Finishes | Polished granite floor tiles, vinyl tiles, homogeneous floor tiles and carpet to some areas. | |
| 3C. Internal Ceiling Finishes | Cement and sand plaster, "Superflex" suspended ceiling and plasterglass ceiling to some areas. Painting. | |
| 3D. External Finishes | DNT spray painting to all external areas, aluminium celing strip to porch area. | |
| 4. FITTINGS AND FURNISHINGS | Kitchen slab, pantry cabinets, light pelmets and vanity slab | |

LAMPIRAN B

| GROSS FLOOR AREA : 11240 m2 | | TENDER DATE: May 1991 |
|---|--|-----------------------|
| ELEMENT | SPECIFICATION | |
| 5. SERVICES | | |
| 5A. Sanitary Appliances | Armitage Shanks basins, w.c's, urinals and all accessories | |
| 5A. Plumbing Installation | Galvanised iron water pipes ; cast iron soil pipes | |
| 5C. Refuse Disposal | - | |
| 5D. Air conditioning & Ventilation System | Airconditioning and ventilation system | |
| 5E. Electrical Installation | Electrical Installation | |
| 5F. Fire Protection | Sprinkler system, wet risers, extinguishers, alarm. | |
| 5G. Lift and Conveyor Installation | Lift Installation | |
| 5H. Communication Installation | PA system, telephone installation, PABX, MATV | |
| 5J. Special Installation | Kitchen Equipment, gas installation | |
| 5K. Builders Profit & Attendance | Builders work in connection with electrical and mechanical services | |
| 6. EXTERNAL WORKS | | |
| 6A. Site work | Site clearance, Roads, driveways, carparks, turfing, fencing & gates Flag posts and landscaping. | |
| 6B. Drainage | Precast concrete drains | |
| 6C. External services | All external services mains, fire hydrants, street and compound lighting and builders work in connection | |
| 6D. Ancillary Buildings | TNB Substation, guard house, Gas store, covered carparks | |
| 6E. Recreational Facilities | - | |

...8/-

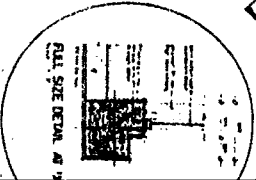
LAMPIRAN B



LEVEL 1

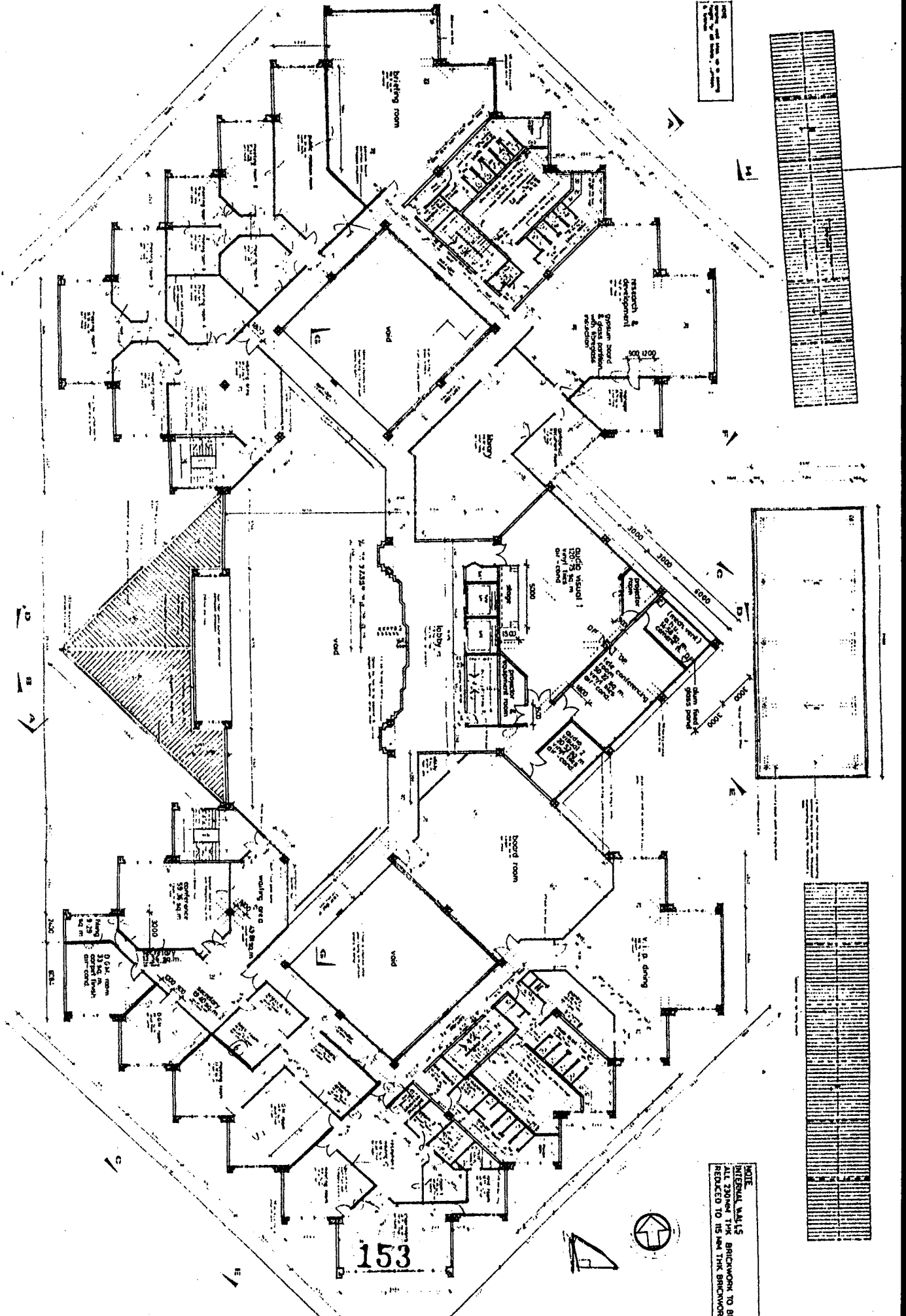
NOTE:
MINERAL WALLS
ALL ROOMS THE SPACING
REDUCED TO 350MM THE 50

15



LAMPIRAN B

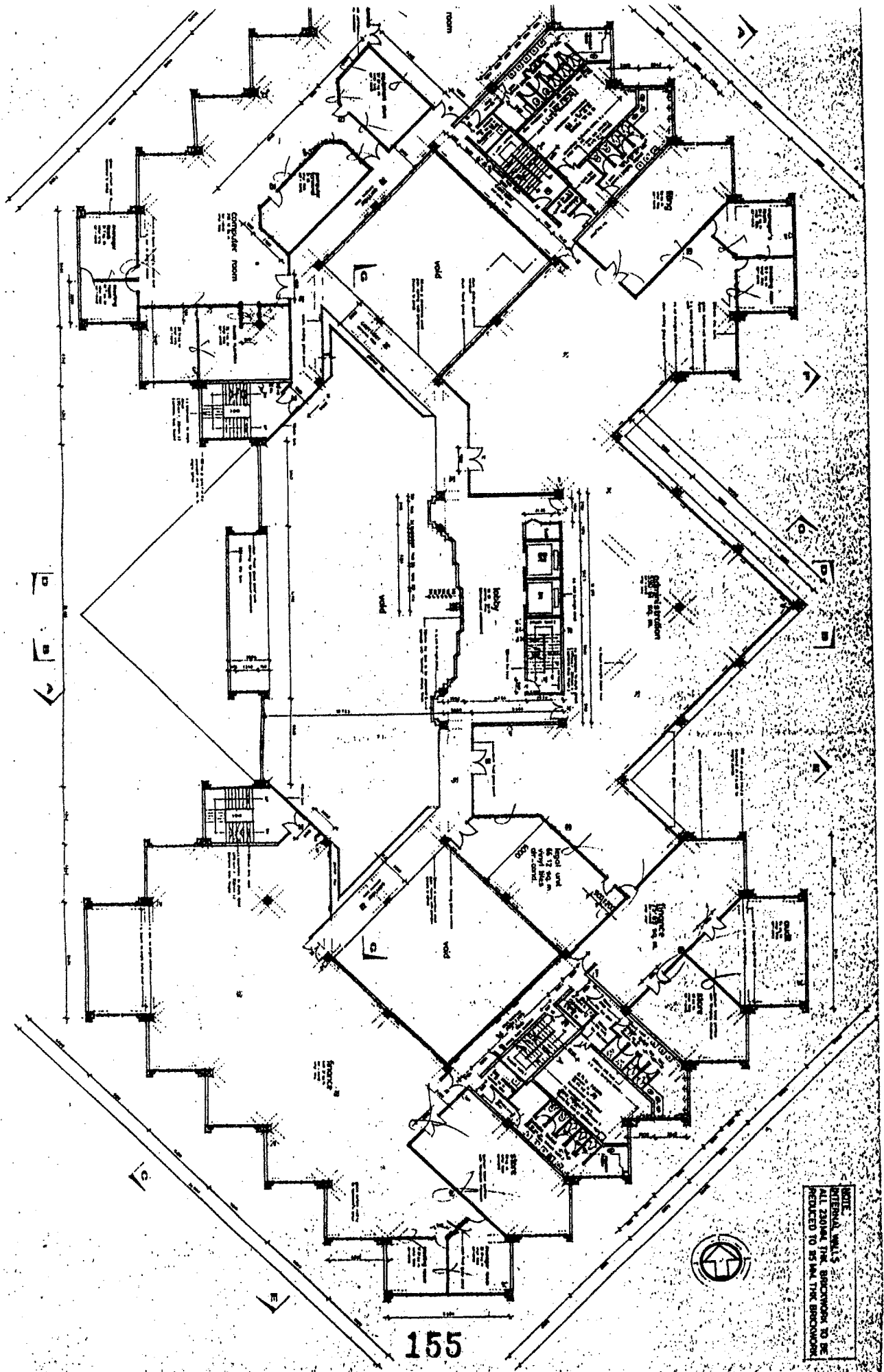
LEVEL 2



153

LAMPIRAN B

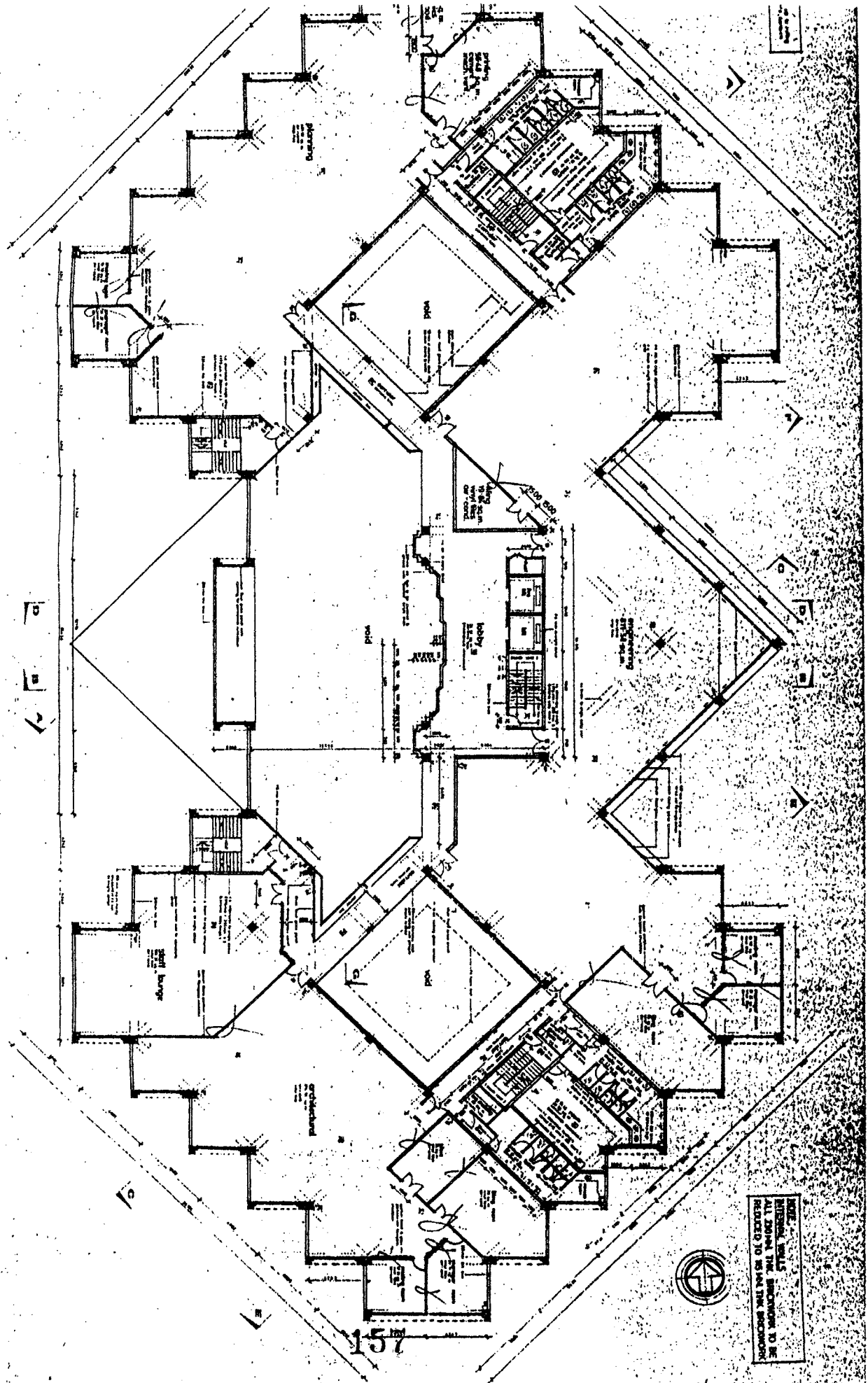
LEVEL 3



155

NOTE:
 INTERNAL WALLS
 ALL 230MM THK BRICKWORK TO BE
 REDUCED TO 90 MM THK BRICKWORK

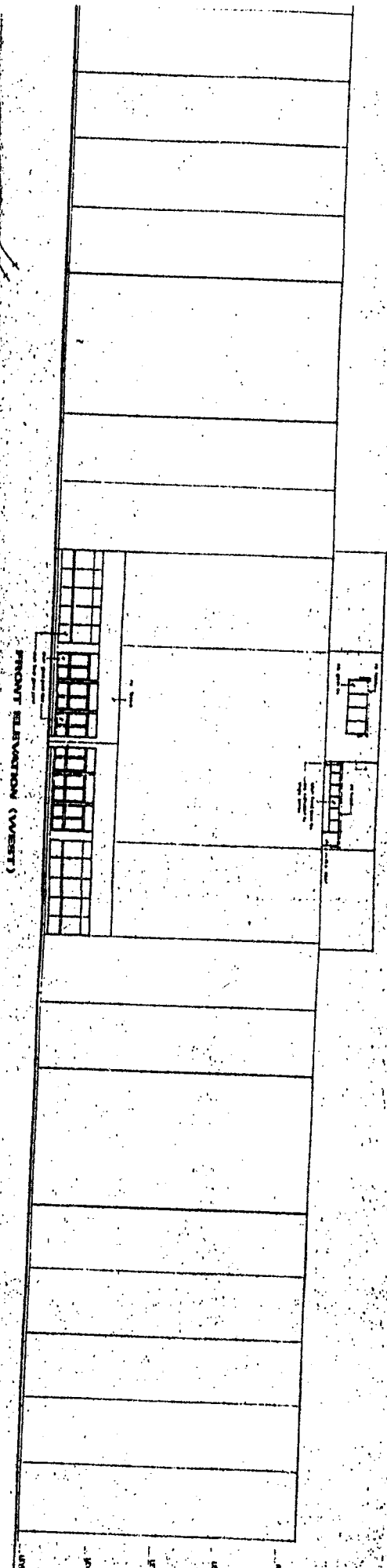
LEVEL 4



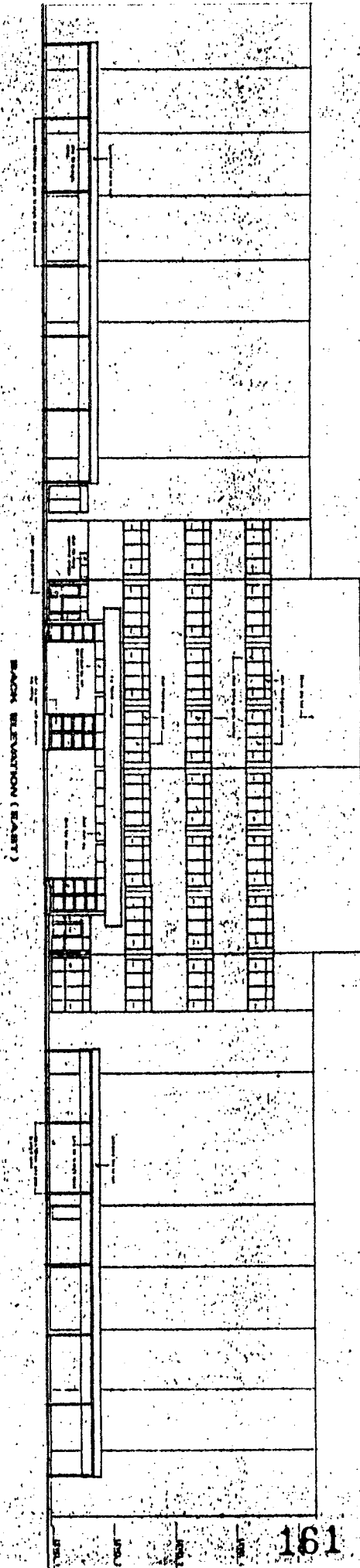
NOTE:
ALL DIMENSIONS SHOWN TO BE
REDUCED TO SEA LEVEL ELEVATION.

157

LAMPIRAN B



LAMPIRAN B



LAMPIRAN CDATA - DATA PELARASAN

- i) Indeks Bangunan - 1993
- ii) Indeks Bangunan - 1989
- iii) Kadar Inflasi - 4% setahun
- iv) Kadar Pinjaman - 10% setahun
- v) Jangkamasa Pembinaan - 2 tahun
- vi) Jangkamasa kelulusan - 1 tahun dari Oktober 1993

INDEK PELARASAN

Masukkan Pengiraan di sini.

...15/-



SIARAN KHAS

Special Release

2

SEMENANJUNG MALAYSIA

(UNTUK KERJA-KERJA PEMBINAAN)

For Building Works

JULAI 1993

JABATAN PERANGKAAN MALAYSIA
DEPARTMENT OF STATISTICS, MALAYSIA

Tarikh: 20 Ogos 1993
Date:

Harga: RM 2.00
Price:

**KETERANGAN RINGKAS MENGENAI INDEKS KOS BANGUNAN
SEMENANJUNG MALAYSIA (JAN. 1980 = 100)**

Indeks Kos Bangunan (IKB) adalah suatu indeks untuk tujuan khusus yang berdasarkan formula Laspeyres. Ianya dibentuk untuk mengira kadar pertukaran purata harga bahan-bahan binaan terpilih yang digunakan dalam lapan kategori bangunan untuk enam kawasan di Semenanjung Malaysia.

IKB adalah sesuai untuk penggunaan Syarat Perubahan Harga dalam kontrak-kontrak bangunan kerajaan sahaja. Spesifikasi dan pemberat untuk bahan binaan terpilih, mengikut kategori bangunan, di sediakan oleh Jabatan Kerja Raya. Anggaran 2,400 sebutharga dipungut setiap bulan daripada lebih kurang 550 outlet untuk 100 jenis bahan binaan terpilih.

NOTA TENTANG MENGIRA PERUBAHAN - PERUBAHAN INDEKS

IKB mengukur perubahan harga dari suatu tempoh rujukan yang ditetapkan, Januari 1980, yang mana menyamai 100.

Pergerakan IKB dari sebulan ke sebulan yang lain ditunjukkan sebagai perubahan peratus dan bukan perubahan mata indeks (index point) kerana perubahan mata indeks dipengaruhi oleh paras indeks itu yang berkaitan dengan tempoh asalnya sedangkan perubahan peratus tidak. Contoh berikut menunjukkan cara pengiraan mata indeks dan perubahan peratus.

| Perubahan Mata Indeks | | Perubahan Peratus |
|--|-------|--|
| Indeks Kos Bangunan (Bulan Semasa) | 130.5 | Perbezaan indeks dibahagikan dengan indeks bulan terdahulu |
| Indeks Kos Bangunan (Bulan Terdahulu) | 129.3 | |
| Perubahan Mata Indeks | 1.2 | $\frac{130.5 - 129.3}{129.3} \times 100$ <p align="right">= 0.9%</p> |

✓

**BRIEF EXPLANATION OF THE BUILDING COST INDEX
PENINSULAR MALAYSIA (JAN. 1980 - 100)**

The Building Cost Index (BCI) is a special purpose index which is based on the Laspeyres formula. It is designed to measure the average rate of change in prices of selected building materials utilised in eight categories of buildings in six regions of Peninsular Malaysia.

The BCI is relevant only for application of the Price Variation Clause in government building contracts. The specifications and weightage pattern of selected building materials, by category of building, are determined by Jabatan Kerja Raya. Approximately 2,400 price quotations are collected monthly from about 550 outlets for 100 selected building material items.

NOTE ON CALCULATING INDEX CHANGES

The BCI measures price changes from a designated period, January 1980 which equals 100.

Movements of the Building Cost Index from one month to another are expressed as percentage changes rather than changes in index points because 'index point' changes are affected by the level of the index in relation to the base period while percentage changes are not. The following example illustrates the computation of index point and percentage changes.

| Index Point Change | | Percentage Change |
|---|-------|--|
| Building Cost Index (Current Month) | 130.5 | Index point change divided by index for the previous month |
| Building Cost Index (Previous Month) | 129.3 | $\frac{130.5 - 129.3}{129.3} \times 100$ |
| Index point change | 1.2 | = 0.9% |

JADUAL I - INDEKS KOS BANGUNAN MENGIKUT KATEGORI BANGUNAN DAN KAWASAN
 Table 1 - Building Cost Index by Category of Building and Region

LAMPIRAN C(i)

(Jan. 1980 = 100)

| Perkara Item | Tempoh Period | Kawasan* Region | | | | | | |
|---|------------------|--------------------|-------|-------|-------|-------|-------|-------|
| | | A | B | C | D | E | F | |
| Kategori Bangunan <i>Category of Building</i> | | | | | | | | |
| (1) Bangunan (K.T.) Satu Tingkat <i>Single-Storey (R.C.) Buildings</i> | 1993 | Jan. | 143.2 | 144.2 | 148.9 | 155.4 | 153.9 | 162.3 |
| | | Feb. | 143.4 | 144.6 | 149.3 | 156.2 | 154.4 | 162.6 |
| | | Mac | 143.2 | 144.4 | 149.3 | 155.9 | 154.4 | 162.6 |
| | | April | 143.6 | 145.2 | 149.8 | 156.8 | 155.3 | 163.6 |
| | | Mei | 145.0 | 146.7 | 150.9 | 158.6 | 157.1 | 165.8 |
| | | Jun | 146.2 | 148.1 | 152.0 | 160.4 | 159.0 | 167.6 |
| | | Julai | 150.0 | 154.2 | 154.9 | 165.3 | 164.0 | 173.5 |
| | | Ogos | | | | | | |
| | | Sept. | | | | | | |
| | | Okt. | | | | | | |
| | | Nov. | | | | | | |
| | | Dis. | | | | | | |
| (2) Bangunan (K.T.) 2 - 4 Tingkat (Berbumbung rata) <i>2 - 4 Storey (R.C.) Buildings (flat roof)</i> | 1993 | Jan. | 143.9 | 143.9 | 151.9 | 154.3 | 150.8 | 157.3 |
| | | Feb. | 144.1 | 144.2 | 152.2 | 154.9 | 151.1 | 157.6 |
| | | Mac | 143.9 | 144.1 | 152.2 | 154.7 | 151.1 | 157.5 |
| | | April | 144.2 | 144.7 | 152.5 | 155.4 | 151.8 | 158.3 |
| | | Mei | 145.8 | 146.5 | 153.9 | 157.3 | 153.8 | 160.6 |
| | | Jun | 147.0 | 147.7 | 154.8 | 159.0 | 155.5 | 162.2 |
| | | Julai | 150.3 | 152.8 | 157.5 | 163.1 | 159.8 | 167.2 |
| | | Ogos | | | | | | |
| | | Sept. | | | | | | |
| | | Okt. | | | | | | |
| | | Nov. | | | | | | |
| | | Dis. | | | | | | |
| (3) Bangunan (K.T.) 2 - 4 Tingkat (Berbumbung curam) <i>2 - 4 Storey (R.C.) Buildings (pitched roof)</i> | 1993 | Jan. | 143.8 | 144.5 | 150.1 | 154.9 | 152.5 | 160.1 |
| | | Feb. | 144.0 | 144.8 | 150.5 | 155.6 | 152.9 | 160.3 |
| | | Mac | 143.9 | 144.7 | 150.4 | 155.4 | 152.9 | 160.3 |
| | | April | 144.3 | 145.3 | 150.8 | 156.2 | 153.7 | 161.2 |
| | | Mei | 146.0 | 147.2 | 152.3 | 158.3 | 155.8 | 163.7 |
| | | Jun | 147.3 | 148.6 | 153.3 | 160.1 | 157.6 | 165.4 |
| | | Julai | 150.9 | 154.2 | 156.2 | 164.7 | 162.3 | 170.9 |
| | | Ogos | | | | | | |
| | | Sept. | | | | | | |
| | | Okt. | | | | | | |
| | | Nov. | | | | | | |
| | | Dis. | | | | | | |

K.T. = Konkrit Bertetulang
 R.C. = Reinforced Concrete

JADUAL I (SAMB.) - INDEKS KOS BANGUNAN MENGIKUT KATEGORI BANGUNAN DAN KAWASAN
Table 1 (Cont'd.) - Building Cost Index by Category of Building and Region

(Jan. 1980 = 100)

| Perkara Item | Tempoh Period | Kawasan* Region | | | | | | |
|---|------------------|--------------------|-------|-------|-------|-------|-------|-------|
| | | A | B | C | D | E | F | |
| Kategori Bangunan <i>Category of Building</i> | | | | | | | | |
| (4) Bangunan (K.T.) 5 Tingkat dan lebih (untuk penginapan) 5 storey and above (R.C.) Buildings (for accommodation) | 1993 | Jan. | 144.0 | 144.4 | 151.8 | 153.5 | 149.3 | 157.1 |
| | | Feb. | 144.2 | 144.7 | 152.1 | 154.1 | 149.6 | 157.3 |
| | | Mac | 144.1 | 144.6 | 152.0 | 153.9 | 149.6 | 157.2 |
| | | April | 144.4 | 145.1 | 152.3 | 154.6 | 150.2 | 157.9 |
| | | Mei | 146.4 | 147.3 | 154.1 | 156.9 | 152.5 | 160.6 |
| | | Jun | 147.6 | 148.5 | 155.1 | 158.5 | 154.2 | 162.2 |
| | | Julai | 150.8 | 153.3 | 157.6 | 162.5 | 158.2 | 166.9 |
| | | Ogos | | | | | | |
| | | Sept. | | | | | | |
| | | Okt. | | | | | | |
| | | Nov. | | | | | | |
| | | Dis. | | | | | | |
| (5) Bangunan (K.T.) 5 Tingkat dan lebih (untuk pejabat) 5 Storey and above (R.C.) Buildings (for office) | 1993 | Jan. | 142.5 | 142.8 | 148.1 | 152.5 | 146.1 | 152.5 |
| | | Feb. | 142.6 | 143.1 | 148.3 | 152.9 | 146.3 | 152.7 |
| | | Mac | 142.5 | 143.0 | 148.2 | 152.8 | 146.3 | 152.7 |
| | | April | 142.8 | 143.4 | 148.4 | 153.3 | 146.7 | 153.2 |
| | | Mei | 145.1 | 145.7 | 150.5 | 155.9 | 149.2 | 155.9 |
| | | Jun | 146.2 | 146.8 | 151.4 | 157.3 | 150.5 | 157.2 |
| | | Julai | 148.8 | 150.5 | 153.6 | 160.4 | 153.7 | 160.9 |
| | | Ogos | | | | | | |
| | | Sept. | | | | | | |
| | | Okt. | | | | | | |
| | | Nov. | | | | | | |
| | | Dis. | | | | | | |
| (6) Bangunan Kayu Timber Buildings | 1993 | Jan. | 156.9 | 162.5 | 163.5 | 194.0 | 191.8 | 221.1 |
| | | Feb. | 157.3 | 164.0 | 164.6 | 196.2 | 193.4 | 222.2 |
| | | Mac | 157.2 | 163.9 | 164.5 | 196.2 | 193.3 | 222.2 |
| | | April | 159.7 | 166.3 | 166.5 | 199.6 | 196.3 | 225.7 |
| | | Mei | 163.7 | 170.6 | 169.7 | 204.7 | 201.4 | 232.2 |
| | | Jun | 167.6 | 174.9 | 173.0 | 210.5 | 207.1 | 237.7 |
| | | Julai | 179.9 | 194.2 | 182.1 | 226.6 | 222.8 | 256.4 |
| | | Ogos | | | | | | |
| | | Sept. | | | | | | |
| | | Okt. | | | | | | |
| | | Nov. | | | | | | |
| | | Dis. | | | | | | |

K.T. = Konkrit Bertetulang
R.C. = Reinforced Concrete



LAMPIRAN C(11)

RECEIVED BY
HASHIM DAN LIM SDN.

- 3 JUL 1989

| | | | |
|----|--|--|--|
| NI | | | |
| HI | | | |

SIARAN KHAS **2**
Special Release

(UNTUK KERJA-KERJA BINAAN BANGUNAN)
(For Building Works)

RECEIVED BY
HASHIM DAN LIM SDN.

10 JUL 1989

MEI, 1989

| | | | | | | |
|--|---|---|---|--|--|--|
| | H | N | L | | | |
| | I | L | W | | | |
| | | | H | | | |

JABATAN PERANGKAAN
DEPARTMENT OF STATISTICS
MALAYSIA
KUALA LUMPUR

HARGA: \$2.00
PRICE:

JADUAL I - INDEKS KOS BANGUNAN MENGIKUT KATEGORI BANGUNAN DAN KAWASAN

Table I - Building Cost Index by Category of Building and Region

(Jan. 1980 = 100)

LAMPIRAN C(11)

| Perkara Item | Tempoh Period | Kawasan* Region | | | | | | |
|---|------------------|--------------------|-------|-------|-------|-------|-------|-------|
| | | A | B | C | D | E | F | |
| Kategori Bangunan <i>Category of building</i> | | | | | | | | |
| (1) Bangunan (K.T.) Satu Tingkat Single-Storey (R.C.) Buildings | 1989 | Jan. | 124.5 | 124.3 | 130.8 | 133.4 | 133.5 | 139.0 |
| | | Feb. | 126.2 | 125.7 | 131.7 | 135.6 | 135.1 | 141.6 |
| | | Mac | 126.8 | 126.2 | 132.3 | 136.4 | 136.5 | 142.0 |
| | | April | 127.1 | 127.1 | 133.1 | 137.4 | 137.0 | 142.7 |
| | | Mei | 130.2 | 130.9 | 136.6 | 140.9 | 139.9 | 145.6 |
| | | Jun | | | | | | |
| | | Julai | | | | | | |
| | | Ogos | | | | | | |
| | | Sept. | | | | | | |
| | | Okt. | | | | | | |
| | | Nov. | | | | | | |
| | | Dis. | | | | | | |
| (2) Bangunan (K.T.) 2 - 4 Tingkat (berbumbung rata) 2 - 4 Storey (R.C.) Buildings (flat roof) | 1989 | Jan. | 124.2 | 123.3 | 130.0 | 130.9 | 130.1 | 134.5 |
| | | Feb. | 125.6 | 124.6 | 130.9 | 132.8 | 131.5 | 136.5 |
| | | Mac | 126.1 | 125.0 | 131.4 | 133.4 | 132.7 | 136.9 |
| | | April | 126.4 | 125.6 | 132.1 | 134.4 | 133.1 | 137.4 |
| | | Mei | 132.1 | 132.1 | 138.2 | 140.5 | 138.6 | 143.0 |
| | | Jun | | | | | | |
| | | Julai | | | | | | |
| | | Ogos | | | | | | |
| | | Sept. | | | | | | |
| | | Okt. | | | | | | |
| | | Nov. | | | | | | |
| | | Dis. | | | | | | |
| (3) Bangunan (K.T.) 2 - 4 Tingkat (berbumbung curam) 2 - 4 Storey (R.C.) Buildings (pitched roof) | 1989 | Jan. | 125.1 | 125.0 | 130.6 | 132.9 | 132.3 | 137.2 |
| | | Feb. | 126.6 | 126.3 | 131.5 | 134.9 | 133.8 | 139.5 |
| | | Mac | 127.2 | 126.7 | 132.0 | 135.5 | 135.0 | 139.9 |
| | | April | 127.5 | 127.4 | 132.6 | 136.4 | 135.3 | 140.5 |
| | | Mei | 132.0 | 132.6 | 137.5 | 141.2 | 139.7 | 144.9 |
| | | Jun | | | | | | |
| | | Julai | | | | | | |
| | | Ogos | | | | | | |
| | | Sept. | | | | | | |
| | | Okt. | | | | | | |
| | | Nov. | | | | | | |
| | | Dis. | | | | | | |
| (4) Bangunan (K.T.) 5 Tingkat Keatas (untuk kediaman) 5 Storey and above (R.C.) Buildings (for accomodation) | 1989 | Jan. | 125.1 | 124.8 | 130.3 | 131.3 | 129.4 | 135.1 |
| | | Feb. | 126.3 | 125.9 | 131.0 | 132.9 | 130.6 | 136.8 |
| | | Mac | 126.8 | 126.3 | 131.5 | 133.4 | 131.6 | 137.2 |
| | | April | 127.1 | 126.8 | 132.0 | 134.2 | 131.9 | 137.6 |
| | | Mei | 133.4 | 133.8 | 138.6 | 140.8 | 137.9 | 143.9 |
| | | Jun | | | | | | |
| | | Julai | | | | | | |
| | | Ogos | | | | | | |
| | | Sept. | | | | | | |
| | | Okt. | | | | | | |
| | | Nov. | | | | | | |
| | | Dis. | | | | | | |

Lihat catatan-catatan di hujung jadual.
See footnotes at end of table.

JADUAL 1 (SAMB.) - INDEKS KOS BANGUNAN MENGIKUT KATEGORI BANGUNAN DAN KAWASAN

Table 1. (Cont'd.) - Building Cost Index by Category of Building and Region

(Jan. 1980 = 100)

LAMPIRAN C(ii)

| Pekerja Item | Tempoh Period | Kawasan ^a Region | | | | | | |
|---|------------------|--------------------------------|-------|-------|-------|-------|-------|-------|
| | | A | B | C | D | E | F | |
| Kategori Bangunan <i>Category of Building</i> | | | | | | | | |
| (5) Bangunan (K.T.) 5 Tingkat Ke atas (untuk pejabat) 5 Storey and above (R.C.) Buildings (for office) | 1989 | Jan. | 127.0 | 126.7 | 130.6 | 134.1 | 130.1 | 133.6 |
| | | Feb. | 127.8 | 127.5 | 131.1 | 135.3 | 131.0 | 134.9 |
| | | Mac | 128.1 | 127.7 | 131.4 | 135.5 | 131.5 | 135.1 |
| | | April | 128.3 | 128.1 | 131.8 | 136.0 | 131.7 | 135.5 |
| | | Mei | 135.4 | 135.7 | 139.1 | 143.4 | 138.6 | 142.7 |
| | | Jun | | | | | | |
| | | Julai | | | | | | |
| | | Ogos | | | | | | |
| | | Sept. | | | | | | |
| | | Okt. | | | | | | |
| | | Nov. | | | | | | |
| | | Dis. | | | | | | |
| (6) Bangunan Kayu Timber Buildings | 1989 | Jan. | 123.4 | 132.0 | 140.0 | 155.1 | 153.7 | 173.2 |
| | | Feb. | 127.8 | 136.4 | 142.8 | 160.6 | 158.6 | 180.3 |
| | | Mac | 129.7 | 136.8 | 143.9 | 162.3 | 160.5 | 181.3 |
| | | April | 130.4 | 137.5 | 144.5 | 163.4 | 161.3 | 182.3 |
| | | Mei | 130.6 | 138.1 | 145.0 | 163.5 | 161.2 | 181.3 |
| | | Jun | | | | | | |
| | | Julai | | | | | | |
| | | Ogos | | | | | | |
| | | Sept. | | | | | | |
| | | Okt. | | | | | | |
| | | Nov. | | | | | | |
| | | Dis. | | | | | | |
| (7) Cerucuk Kayu Timber Piling | 1989 | Jan. | 120.0 | 135.0 | 145.3 | 170.1 | 172.2 | 197.6 |
| | | Feb. | 127.1 | 142.4 | 150.0 | 179.1 | 180.6 | 209.0 |
| | | Mac | 130.3 | 142.8 | 151.5 | 182.0 | 183.5 | 210.4 |
| | | April | 131.4 | 143.6 | 152.2 | 183.5 | 184.6 | 211.6 |
| | | Mei | 130.5 | 142.7 | 151.8 | 182.5 | 183.3 | 208.8 |
| | | Jun | | | | | | |
| | | Julai | | | | | | |
| | | Ogos | | | | | | |
| | | Sept. | | | | | | |
| | | Okt. | | | | | | |
| | | Nov. | | | | | | |
| | | Dis. | | | | | | |
| (8) Cerucuk K. T. R. C. Piling | 1989 | Jan. | 128.7 | 128.1 | 129.1 | 125.7 | 127.5 | 126.3 |
| | | Feb. | 128.9 | 128.3 | 129.3 | 126.1 | 127.8 | 126.5 |
| | | Mac | 128.9 | 128.4 | 129.4 | 126.1 | 127.9 | 126.5 |
| | | April | 129.0 | 128.5 | 129.4 | 126.2 | 127.8 | 126.5 |
| | | Mei | 145.6 | 145.1 | 146.0 | 142.6 | 144.3 | 143.2 |
| | | Jun | | | | | | |
| | | Julai | | | | | | |
| | | Ogos | | | | | | |
| | | Sept. | | | | | | |
| | | Okt. | | | | | | |
| | | Nov. | | | | | | |
| | | Dis. | | | | | | |

Lihat catatan-catatan di hujung jadual.
See footnotes at end of table.

CATATAN-CATATAN

Footnotes:

LAMPIRAN C(ii)

* **Kawasan
Region:**

A = Pulau Pinang, Kedah, Perlis

B = Perak

C = Wilayah Persekutuan, Selangor, Negri Sembilan dan Melaka

D = Johor

E = Pahang

F = Kelantan dan Trengganu

(i) K.T. = Konkrit Bertetulang

(ii) R.C. = Reinforced Concrete

(iii) Semua harga-harga yang digunakan untuk pergiraan Indeks-Indeks ini adalah berkaitan dengan tujuan perubahan harga sahaja.

All prices used in the calculation of these indices are relevant for escalation purposes only.

Tarikh: 27hb. Jun, 1989.

Date:

KHOO TEIK HUAT, J.S.M.,
Ketua Perangkawan,
Jabatan Perangkaan, Malaysia.

LAMPIRAN D

PELAN KOS

ANGKA GILIRAN

Soalan 1 (i)

RINGKASAN KOS-KOS ELEMEN

JENIS BANGUNAN :

KELUASAN LANTAI KASAR :M²

TARIKH :

| Elemen | Jumlah Kos Elemen \$ | Kos/m ² Keluasan Lantai Kadar \$ |
|-------------------------------------|-------------------------|---|
| 1. <u>SUBSTRUKTUR</u> | | |
| 1A. Kerja-kerja cerucuk | | |
| 1B. Kerja-kerja bawah kemas lantai | | |
| o Jumlah Elemen Terkumpul | | |
| 2. <u>SUPERSTRUKTUR</u> | | |
| 2A. Rangka | | |
| 2B. Lantai-lantai atasan | | |
| 2C. Bumbung | | |
| 2D. Tangga | | |
| 2E. Dinding luar | | |
| 2F. Tingkap & Pintu Luar | | |
| 2G. Dinding Dalam & Dinding Sekatan | | |
| 2H. Pintu-Pintu Dalam | | |
| o Jumlah Elemen Terkumpul | | |

...25/-

LAMPIRAN D

| Elemen | Jumlah Kos Elemen \$ | Kos/m ² Keluasan Lantai Kadar \$ |
|--|--|---|
| 3. <u>KEMASAN</u> 3A. Kemas Dinding Dalam 3B. Kemas Lantai Dalam 3C. Kemas Siling Dalam 3D. Kemas Luar o Jumlah Elemen Berkumpul | | |
| 4. <u>PEMASANGAN & KEPERABOTAN</u> | | |
| 5. <u>PERKHIDMATAN</u> 5A. Pemasangan Sanitari 5B. Pemasangan Air 5C. Pembuangan Sampah 5D. Penghawa Dingin & Sistem Pengudaraan 5E. Pemasangan Elektrik 5F. Pemasangan Pencegah Kebakaran 5G. Pemasangan Lif & Konveyor 5H. Pemasangan Komunikasi 5J. Pemasangan Khas (Contoh: alat-alat dapur, automasi bangunan, sistem sekuriti, pemasangan fas, dsb.) 5K. 'Profit & Attendance' Pembinaan terhadap perkhidmatan. 5L. Kerja-kerja Pembina Bersangkut dengan Perkhidmatan o Jumlah Elemen Berkumpul | 177 | |

LAMPIRAN D

| Elemen | Jumlah Kos Elemen \$ | Kos/m ² Keluasan Lantai Kadar \$ |
|--|---|---|
| JUMLAH KECIL tidak termasuk kerja-kerja luar, Preliminaries & Kontigensi | | |
| 6. <u>KERJA-KERJA LUAR</u> 6A. Kerja-kerja Tapak 6B. Perparitan & Saliran 6C. Perkhidmatan Luar 6D. Bangunan - bangunan Tambahan 6E. Kemudahan Riadah o Jumlah Elemen Terkumpul | | |
| "PRELIMINARIES" | | |
| KOS BANGUNAN | | |
| KOMEN | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

