

VOLUME 4
BILL OF QUANTITIES

I. PREAMBLE

Tenderers must price each item in the bill of quantities separately and follow the instructions regarding the transfer of various totals in the summary.

The bill of quantities must be read with all the other contract documents and the Contractor shall be deemed to have thoroughly acquainted himself with the detailed descriptions of the works to be done and the way in which they are to be carried out. All the works must be executed to the satisfaction of the Supervisor.

1.1. Quantity of items

The quantities set forth against the items in the bill of quantities are an estimate of the quantity of each kind of the work likely to be carried out under the contract and are given to provide a common basis for bids. There is no guarantee to the Contractor that it will be required to carry out the quantities of work indicated under any one particular item in the bill of quantities or that the quantities will not differ in magnitude from those stated.

When pricing items, reference should be made to the conditions of contract, the specifications and relevant drawings for directions and descriptions of work and materials involved.

The quantities given in the bill of quantities are provisional and reflect the estimates made at the time of approval to provide a basis for this dossier and tenders. Tenderers must consider every aspect of the dossier carefully.

Any comments concerning the quantities must be made in the form of an attachment, following the system of itemisation, quoting the codes and brief descriptions, as in the present documents, including the rates and prices.

Save where the technical specifications or the bill of quantities specifically and expressly state otherwise, only permanent works are to be measured. Works will be measured net to the dimensions shown on the drawings or ordered in writing by the Supervisor, save where described or prescribed elsewhere in the contract.

In adjusting extras or variations on the contract, works will be measured on the same basis as that on which the quantities were prepared. All works not specifically mentioned in the bill of quantities will be taken as included in the prices of various items.

Where, in the opinion of the Supervisor, extra works cannot be properly measured or valued, the Contractor may, if so directed by the Supervisor, carry out the work at the daywork rates shown in the schedule of daywork. All completed daywork sheets must be signed by the Supervisor on or before the end of the week in which the works are executed.

No allowance will be made for loss of materials or volume thereof during transport or compaction.

1.2. Units of measurement

British Imperial Units are used for measurement, pricing, detail, drawings, etc.

Abbreviations used in the bill of quantities are to be interpreted as follows:

- B.Q. Bill(s) of Quantities
- B.S. British Standard
- B.N.S. British National Standard
- C.P. Code of Practice
- SMM Standard Method of Measurement

| | |
|--------|------------------------|
| C.Y. | Cubic Yards |
| C.F. | Cubic Feet |
| S.Y. | Square Yards |
| S.F. | Square Feet |
| L.Y. | Linear Yards |
| L.F. | Linear Feet |
| No. | Number |
| Lbs. | Pounds avoirdupois |
| Hrs. | Hours |
| p.s.i. | Pounds per square inch |
| Pr. | Pair |

Definitions

- A The term 'approved' 'directed' or 'selected' means the approval, direction and selection by the Architect unless otherwise described.
- B Where the term 'allow' occurs in this document the cost of the item is at the risk of the Contractor.
- C The abbreviations 'BS, BNS, CP and BNSCP' mean the latest British Standard Specification, Barbados National Standard, British Code of Practice and Barbados Standard Code of Practice, respectively.
- D The term 'local' means St. Vincent and the Grenadines.
- E All sums of money quoted in this document shall be in local currency EC dollars.

II. TERMS RELATING TO PAYMENTS

The method for measuring completed works for payment must be in accordance with Clause 49.1 of the Special Conditions (net measurement), save where Section II, "Description of the items of the bill of quantities" provides otherwise.

The provisional sums in the bill of quantities must be used in whole or in part at the discretion of the Supervisor.

All provisional and PC sums shall be omitted in the Final Account and substituted by actual measurement of such works related to the provisional and PC sums and as specifically authorised by the Architect. All provisional sums will be deducted in total if not required without compensation to the Contractor.

Each item in the bill of quantities for which payment is to be made in a lump sum, and for which no payment schedule is provided, must be paid after the work covered by the lump sum has been completed to the satisfaction of the Supervisor.

III. PRICING

The prices and rates inserted in the bill of quantities are to be the full inclusive values of the works described under the items, including all costs and expenses which may be required in and for the construction of the works described together with any temporary works and installations which may be necessary and all general risks, liabilities and obligations set forth or implied in the documents on which the tender is based. It will be

assumed that establishment charges, profit and allowances for all obligations are spread evenly over all the unit rates.

The rates and prices tendered in the priced bill of quantities will be quoted at the rates current prior to the date of submission.

Rates and prices must be entered against each item in the bill of quantities. The rates will cover all tax, duty or other liabilities which are not stated separately in the bill of quantities and the tender.

IV. TAXES

All material and components of fixtures which shall become **permanently** integrated into the Works shall be exempted from import duties and taxes.

Subject to the approval of the Supervisor, any equipment or plant imported specially for the execution of this Contract shall be granted such exemptions as above by the Contracting Authority.

VAT shall be reimbursed to the Contractor through the treasury of the Government of St. Vincent and the Grenadines. These charges must be included in the bill of quantities against the line item for taxes.

The Contracting Authority shall inform the Contractor of the procedure to secure exemptions and reimbursement from import duties and taxes as the case may be.

V. COMPLETING THE BILL OF QUANTITIES

In the bill of quantities, rates and prices will be entered in the appropriate columns in national currency. Errors will be corrected as follows: a) where there is a discrepancy between amounts in figures and in words, the amount in words will prevail; and b) where there is a discrepancy between the unit rate and the total amount derived from the multiplication of the unit price and the quantity, the unit rate as quoted will prevail.

| | DESCRIPTION | QTY | UNIT | UNIT PRICE (EXCL. TAX) | TOTAL PRICE (EXCL. TAX) |
|----------|--|-----|------|---------------------------|----------------------------|
| 1 | <u>PRELIMINARIES:</u> | | | | |
| (a) | Provision of the necessary working drawings. | | | | |
| (b) | Provision for the necessary shop drawings and equipment details. | | | | |
| (c) | Provision of the required coordinating effort with other trades. | | | | |
| (d) | Insurances | | | | |
| (e) | 10% Performance Bond | | | | |
| | TOTAL ITEM (1) | | | | |
| 2 | <u>EQUIPMENT:</u> | | | | |
| (A) | Supply and Installation of Packaged Chillers | | | | |
| (a) | Chiller Bank - 1 | 1 | no. | | |
| (b) | Chiller Bank - 2 | 1 | no. | | |
| (c) | Control wiring | | sum | | |
| | TOTAL ITEM (A) | | | | |
| (B) | <u>Supply & Installation of DEDICATED OUTSIDE AIR Units</u> | | | | |
| (a) | DOAS-1 | 1 | no. | | |
| (b) | MERV 8 Prefilters | | sum | | |
| (c) | MERV 14 Final filters | | sum | | |
| (d) | Insulation of condensate drains | | sum | | |
| (e) | Condensate drain piping | | sum | | |
| (f) | Control wiring | | sum | | |
| | TOTAL ITEM (B) | | | | |

| | DESCRIPTION | QTY | UNIT | UNIT PRICE (EXCL. TAX) | TOTAL PRICE (EXCL. TAX) |
|-----|---|-----|------|------------------------------|-------------------------------|
| 2 | <u>EQUIPMENT CONT'D:</u> | | | | |
| (C) | <u>Supply & Installation of Packaged Unit With Dehumidification</u> | | | | |
| (a) | AC-1 | 1 | no. | | |
| (b) | MERV 8 Prefilters | | sum | | |
| (c) | MERV 14 Final Filters | | sum | | |
| (d) | Insulation of condensate drains | | sum | | |
| (e) | Condensate drain piping | | sum | | |
| (f) | Control wiring | | sum | | |
| | | | | | |
| | TOTAL ITEM (C) | | | | |
| | | | | | |
| (D) | <u>Supply & Installation of Indoor Air Handler Unit Dehumidification</u> | | | | |
| (a) | AHU-1/ACCU-1 | 1 | no. | | |
| (b) | MERV 8 Prefilters | | sum | | |
| (c) | MERV 14 Final Filters | | sum | | |
| (d) | Insulation of condensate drains | | sum | | |
| (e) | Condensate drain piping | | sum | | |
| (f) | Control wiring | | sum | | |
| | | | | | |
| | TOTAL ITEM (D) | | | | |
| | | | | | |

| | DESCRIPTION | QTY | UNIT | UNIT PRICE (EXCL. TAX) | TOTAL PRICE (EXCL. TAX) |
|-----|--|-----|------|---------------------------|----------------------------|
| 2 | <u>EQUIPMENT CONT'D:</u> | | | | |
| (E) | <u>Supply & Installation of CCU/CU</u> | | | | |
| | <u>Type DX Air-conditioning System:</u> | | | | |
| (a) | 18,000 Btu System (CCU-/CU-1) | 1 | no. | | |
| (b) | Refrigerant piping | | sum | | |
| (c) | Insulation of refrigerant piping & condensate drains | | sum | | |
| (d) | Condensate drain piping | | sum | | |
| (e) | Control wiring & conduit | | sum | | |
| (f) | Thermostats | 1 | no. | | |
| | TOTAL ITEM (E) | | | | |
| | TOTAL ITEM 2 (SUM A TO E) | | | | |
| 3 | <u>VENTILATION SYSTEM</u> | | | | |
| | <u>FANS:</u> | | | | |
| | <u>Supply & Installation of:</u> | | | | |
| (a) | Fan - 1 | 1 | no. | | |
| (b) | Fan - 3 | 1 | no. | | |
| (c) | Fan - 5 | 1 | no. | | |
| (d) | Fan - 6 | 1 | no. | | |
| (e) | Control wiring for fans | | sum | | |
| (f) | Miscellaneous | | sum | | |
| | TOTAL ITEM (3) | | | | |

| | DESCRIPTION | QTY | UNIT | UNIT PRICE (EXCL. TAX) | TOTAL PRICE (EXCL. TAX) |
|----------|---|-----|------|------------------------------|-------------------------------|
| 4 | <u>ELECTRIC REHEATERS:</u> | | | | |
| | <u>Supply & installation of:</u> | | | | |
| (a) | Heater-1 | 1 | no. | | |
| (b) | Heater-2 | 1 | no. | | |
| (c) | Heater-3 | 1 | no. | | |
| (d) | Heater-4 | 1 | no. | | |
| (e) | Transformers | 4 | no. | | |
| | TOTAL ITEM (4) | | | | |
| 5 | <u>KITCHEN HOODS:</u> | | | | |
| (a) | HOOD AH-1 complete | 1 | no. | | |
| (b) | Control wiring and conduit | | sum | | |
| (c) | Fire Suppression System | | sum | | |
| (d) | Fan Controller | | sum | | |
| (e) | Accessories | | sum | | |
| | TOTAL ITEM (5) | | | | |
| 6 | <u>DIFFUSERS/GRILLES/REGISTERS</u> | | | | |
| (a) | TYPE "A" Complete | 2 | no. | | |
| (b) | TYPE "F" Complete | 1 | no. | | |
| (c) | TYPE "G" Complete | 1 | no. | | |
| (d) | TYPE "H" Complete | 5 | no. | | |
| (e) | TYPE "J" Complete | 1 | no. | | |
| (f) | TYPE "K" Complete | 2 | no. | | |
| (g) | TYPE "L" Complete | 12 | no. | | |
| (h) | TYPE "M" Complete | 3 | no. | | |
| (i) | TYPE "N" Complete | 1 | no. | | |
| (j) | TYPE "R" Complete | 1 | no. | | |
| (k) | TYPE "DG-A" Complete | 2 | no. | | |
| | TOTAL ITEM (6) | | | | |

| | DESCRIPTION | QTY | UNIT | UNIT PRICE (EXCL. TAX) | TOTAL PRICE (EXCL. TAX) |
|----------|---|-----|------|---------------------------|----------------------------|
| 7 | <u>PRESSURE STABILISERS</u> | | | | |
| (a) | PS-1 | 2 | no. | | |
| (b) | PS-2 | 2 | no. | | |
| (c) | PS-3 | 2 | no. | | |
| (d) | PS-4 | 4 | no. | | |
| | TOTAL ITEM (7) | | | | |
| 8 | <u>DUCTWORK:</u> | | | | |
| (A) | <u>Supply & installation of Internal Ductwork:</u> | | | | |
| (a) | Galvanized ductwork: | | | | |
| | (1) 26 guage sheet metal | | | | |
| | 4" x 4" | 32 | l.f. | | |
| | 6" x 6" | 30 | l.f. | | |
| | 8" x 8" | 57 | l.f. | | |
| | 10" x 10" | 66 | l.f. | | |
| | 10" x 12" | 6 | l.f. | | |
| | 12" x 12" | 35 | l.f. | | |
| | (2) 24 guage sheet metal | | | | |
| | 14" x 10" | 10 | l.f. | | |
| | 18" x 5" | 32 | l.f. | | |
| | 16" x 12" | 17 | l.f. | | |
| | 20" x 10' | 6 | l.f. | | |
| | 20" x 12" | 112 | l.f. | | |
| | 24" x 10" | 46 | l.f. | | |
| | 24" x 12" | 46 | l.f. | | |
| | 26" x 10" | 12 | l.f. | | |
| | (3) 22 guage sheet metal | | | | |
| | 37" x 7" | 60 | l.f. | | |
| | 40 x 10" | 50 | l.f. | | |
| | 40 x 12" | 16 | l.f. | | |
| | (4) 20 guage sheet metal | | | | |
| | 44" x 16" | 69 | l.f. | | |
| | 50" x 12" | 30 | l.f. | | |
| | (5) 18 guage sheet metal | | | | |
| | | | | | |

| | DESCRIPTION | QTY | UNIT | UNIT PRICE (EXCL. TAX) | TOTAL PRICE (EXCL. TAX) |
|-----|---|-----|------|------------------------------|-------------------------------|
| 8 | <u>DUCTWORK CONT'D:</u> | | | | |
| (A) | <u>Supply & installation of Internal Ductwork:</u> | | | | |
| (b) | 1" Fibreglass ductboard insulation | 800 | l.f. | | |
| | <i>(Surgeries exhaust ductwork shall be insulated up to the exhaust fans on the roof. On above duct</i> | | | | |
| (c) | Kitchen Exhaust Ductwork: | | | | |
| | (1) 24 guage 18" x 12" | 28 | l.f. | | |
| | (1) 22 guage 38" x 12" | 58 | l.f. | | |
| (d) | Flexible ductwork: | | | | |
| | 18" dia. | 20 | l.f. | | |
| | 12" dia. | 10 | l.f. | | |
| | 8" dia. | 10 | l.f. | | |
| (e) | Duct accessories: | | | | |
| | (1) Splitter dampers | | sum | | |
| | (2) Turning vanes | | sum | | |
| | (3) Duct hangers | | sum | | |
| | (4) Leg Supports | | sum | | |
| | (5) Angle Brackets | | sum | | |
| | (6) Backdraft Dampers | | sum | | |
| | (7) Fire Dampers | | sum | | |
| | (8) Opposed Blade Dampers | | sum | | |
| | (9) Flanged Gasket | | sum | | |
| | (10) Duct Access Doors | | sum | | |
| | (11) Miscellaneous | | sum | | |
| | TOTAL ITEM (A) | | | | |
| | | | | | |
| | | | | | |

| | DESCRIPTION | QTY | UNIT | UNIT PRICE (EXCL. TAX) | TOTAL PRICE (EXCL. TAX) |
|-----|---|-----|------|------------------------------|-------------------------------|
| (B) | <u>Supply & installation of External Ductwork:</u> | | | | |
| (a) | Galvanized ductwork: | | | | |
| | (1) 26 guage sheet metal | | | | |
| | (2) 24 guage sheet metal | | | | |
| | 15" x 15" | 40 | l.f. | | |
| | 26" x 16" | 25 | l.f. | | |
| | (3) 22 guage sheet metal | | | | |
| | 30" x 15" | 32 | l.f. | | |
| | 32" x 28" | 10 | l.f. | | |
| | (4) 20 guage sheet metal | | | | |
| | (5) 18 guage sheet metal | | | | |
| (b) | 2" Fibreglass ductboard insulation on above duct | 235 | l.f. | | |
| (c) | Duct accessories: | | | | |
| (d) | (1) Splitter dampers | | | | |
| | (2) Turning vanes | | | | |
| | (3) Duct hangers | | | | |
| | (4) Leg Supports | | | | |
| | (5) Angle Brackets | | | | |
| | (6) Backdraft Dampers | | | | |
| | (7) Fire Dampers | | | | |
| | (8) Opposed Blade Dampers | | | | |
| | (9) Flanged Gasket | | | | |
| | (10) Duct Access Doors | | | | |
| | (11) Miscellaneous | | | | |
| | TOTAL ITEM (B) | | | | |
| | TOTAL ITEM 8 (SUM A & B) | | | | |

| | DESCRIPTION | QTY | UNIT | UNIT PRICE (EXCL. TAX) | TOTAL PRICE (EXCL. TAX) |
|----------|--|-----|------|------------------------------|-------------------------------|
| 9 | <u>PIPING, VALVES & FITTINGS:</u> | | | | |
| (A) | <u>Supply & Installation of External Pre-Insulated PVC Pipes:</u> <i>(All supply & return pipe work to relevant equipment on roof)</i> <u>Inclusive of bends, tees & other necessary fittings:</u> | | | | |
| (a) | 2 1/2" | 30 | l.f. | | |
| (b) | 3" | 42 | l.f. | | |
| | | | | | |
| | TOTAL ITEM (A) | | | | |
| | | | | | |
| (B) | <u>Supply & Installation of Pressure Independant Valve for Control & Balancing:</u> | | | | |
| (a) | 2 1/2" | 1 | no. | | |
| (b) | 3" | 1 | no. | | |
| (c) | Piping Accessories: | | | | |
| | Angle Bracket | | sum | | |
| | Clamps | | sum | | |
| | Pipe Hangers | | sum | | |
| | | | | | |
| | TOTAL ITEM (B) | | | | |

| | DESCRIPTION | QTY | UNIT | UNIT PRICE (EXCL. TAX) | TOTAL PRICE (EXCL. TAX) |
|-----|--|-----|------|------------------------------|-------------------------------|
| (C) | Supply & Installation of Schedule 40 Steel Pipe | 30 | l.f. | | |
| | | | | | |
| | | | | | |
| (D) | Supply & Installation of 200 gal. External Chilled Water Buffer Tank with 1 1/2" Insulation Complete with 2 no. Isolation Valves | | | | |
| | | 2 | no. | | |
| | | | | | |
| (E) | Supply & Installation of strainers, bleed and drain valves etc. as per drawing details. | | | | |
| | | | sum | | |
| | | | | | |
| (F) | Supply & Installation of all miscellaneous valves and fittings not listed directly but necessary to make system complete. | | | | |
| | | | sum | | |
| | | | | | |
| (G) | <u>Supply & Installation of Instrumentation:</u> | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| (a) | Thermometers | 4 | no. | | |
| | | | | | |
| (b) | Pressure gauges | 6 | no. | | |
| | | | | | |
| (c) | Water flow meters | 2 | no. | | |
| | | | | | |
| (d) | Instrument Kit for use with P/T ports | 1 | no. | | |
| | | | | | |
| (e) | P/T ports | 4 | no. | | |
| | | | | | |
| | TOTAL ITEM (G) | | | | |
| | | | | | |
| | | | | | |

| | DESCRIPTION | QTY | UNIT | UNIT PRICE (EXCL. TAX) | TOTAL PRICE (EXCL. TAX) |
|-----|--|-----|------|---------------------------|----------------------------|
| (H) | Insulation of all equipment, valves, and accessories | | sum | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | TOTAL ITEM (H) | | | | |
| | | | | | |
| | | | | | |
| | TOTAL ITEM 10 (SUM A TO H) | | | | |
| | | | | | |
| | | | | | |
| 10 | Water Treatment | | sum | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | TOTAL ITEM (10) | | | | |
| | | | | | |
| | | | | | |
| | TOTAL ITEM 10 (SUM A TO H) | | | | |
| | | | | | |
| | | | | | |
| 11 | <u>CONTROL SYSTEM FOR OPERATING THEATRES:</u> | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | (a) Cabling and Conduit | | sum | | |
| | | | | | |
| | | | | | |
| | (b) Boxes | | sum | | |
| | | | | | |
| | | | | | |
| | (c) Controllers | | sum | | |
| | | | | | |
| | | | | | |
| | (d) Power Line Filters | | sum | | |
| | | | | | |
| | | | | | |
| | (e) Thermostat Controllers | | sum | | |
| | | | | | |
| | | | | | |
| | (f) Sensors | | sum | | |
| | | | | | |
| | | | | | |
| | (g) Software | | sum | | |
| | | | | | |
| | | | | | |
| | (h) Miscellaneous Hardware | | sum | | |
| | | | | | |
| | | | | | |
| | (i) Commissioning | | sum | | |
| | | | | | |
| | | | | | |
| | (j) Post-installation Training | | sum | | |
| | | | | | |
| | | | | | |
| | (k) Transformers for control circuits | | sum | | |
| | | | | | |
| | | | | | |
| | (l) Dual Display Temperature & Humidity Display Units | | sum | | |
| | | | | | |
| | | | | | |
| | (m) Other items needed to make complete installation but not specifically mentioned. | | sum | | |
| | | | | | |
| | | | | | |
| | NOTE: Contractor is to supply detailed breakdown with tender | | | | |
| | | | | | |
| | | | | | |
| | TOTAL ITEM (11) | | | | |
| | | | | | |
| | | | | | |

| | DESCRIPTION | QTY | UNIT | UNIT PRICE (EXCL. TAX) | TOTAL PRICE (EXCL. TAX) |
|-----|---|-----|------|------------------------------|-------------------------------|
| 12 | Samples <i>(to be submitted for review and approval before construction)</i> | | | | |
| | Supply & Installation of: | | | | |
| (a) | Thermostat | 1 | no. | | |
| (b) | Humidstats | 1 | no. | | |
| (c) | Timer | 1 | no. | | |
| (d) | Miscellaneous | | sum | | |
| | TOTAL ITEM (12) | | | | |
| 13 | SPECIALIST BALANCING AND TESTING | | sum | | |
| 14 | MAINTENANCE DURING DEFECTS LIABILITY PERIOD (12 MONTHS) | | sum | | |
| 15 | DUST CONTROL APPARATUS | | sum | | |
| 16 | REMOVAL AND LEGAL DISPOSAL OF DX EQUIPMENT INCLUSIVE OF DUCTING, PIPING, AND CONDENSERS. <i>(It is necessary to make a site visit to see extent of this work)</i> | | sum | | |

| | DESCRIPTION | QTY | UNIT | UNIT PRICE (EXCL. TAX) | TOTAL PRICE (EXCL. TAX) |
|-----|---|-----|------|---------------------------|----------------------------|
| 17 | ITEMS SPECIFIED OR INDICATED ON DRAWINGS BUT NOT MENTIONED IN THE DETAIL OF TENDER | | | | |
| (a) | | | | | |
| (b) | | | | | |
| (c) | | | | | |
| | TOTAL ITEM (17) | | | | |
| 18 | SUB-TOTAL ITEM (1 TO 18) | | | | |
| 19 | Complete system testing and adjusting, provision of as built drawings, provision of equipment manuals and maintenance instructions. (See Section 3.03) (2% OF ITEM 18) | | sum | | |
| 20 | SUB-TOTAL ITEM (18 AND 19) | | | | |
| 21 | CONTINGENCIES: | | | | 27,500.00 |
| 22 | SUB-TOTAL ITEM (20 AND 21) | | | | |
| 23 | 15% V.A.T. OF ITEM 22 | | | | |
| 24 | TOTAL TENDER SUM (ITEMS 22 AND 23)CARRIED FORWARD TO FORM OF TENDER | | | | |

**MILTON CATO MEMORIAL HOSPITAL
AIR-CONDITIONING DRAWING LIST**

| | |
|-----|--------------------------------------|
| M-1 | GROUND FLOOR AIR-CONDITIONING LAYOUT |
| M-2 | FIRST FLOOR AIR-CONDITIONING LAYOUT |
| R-1 | ROOF LAYOUT |