



DEPARTMENT OF PUBLIC WORKS

MANUAL FOR ARCHITECTS

SEPTEMBER 2002 SEPTEMBER 2002

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A. GENERAL PROCEDURE

A.1 THE MANUAL

The purpose of this Manual is to serve as a guide to the functions, duties and responsibilities of Consultant Architects in the design, documentation and administration and building projects for the Department. You are required to execute your work in accordance with this Manual and with such supplementary instructions as the Department may issue from time to time.

Should there be any discrepancy between the Manual and the letter of appointment the letter of appointment takes preference. Refer any discrepancy to the Project Manager.

A.2 THE CLIENT

The sole client for the work is the Director-General: Public Works (hereinafter referred to as the Director-General) or his authorised representative. As Consultant Architect your dealings with the client will be conducted with the Project Manager (or private Project Manager if appointed, to the Professional Team).

A.3 THE CLIENT DEPARTMENT

The designated occupant(s) of a building is/are the Client Department(s). Any discussions which you wish to have with a Client Department must be arranged through the Project Manager. Any request from Client Departments for increased altered accommodation or for items involving additional cost must be referred by the Department to the Director-General and his written authority obtained before you incorporate such additions or alterations in your design proposals.

A.4 THE PROJECT MANAGER

The function of the Project Manager (whether Departmental or appointed from the private sector) is to manage, control and co-ordinate the professional team in such a way that the project is delivered on time, within budget and according to the described quality.

A.5 THE PRINCIPAL AGENT

A.5.1 Architect as the Principal Agent

Unless otherwise stated you will act as the Principal Agent of the Department in terms of your appointment and will co-ordinate the work of the professional team. Before you submit your proposals you must ascertain the requirements of all other disciplines and incorporate them in your drawings.

A.5.2 Firms in Association: Responsible members

A.5.2.1 In the case of firms appointed in association, you are requested in your letter of appointment to agree, with the other members on the appointment to a representative firm, for the purpose of contact and consultation, co-ordination and correspondence with the Department.

A.5.2.2 The Department reserves the right to nominate a member of the firms in association whom it wishes to act as representative.

A.6 PROFESSIONAL FEES: EXTENT OF ARCHITECTURAL SERVICES

A.6.1 In the majority of cases, particularly where the building(s) will occupy the greater part of the site, you will be responsible for all services on the site, including the design of site works, embankments, retaining walls, driveways, parking and other paved areas, footpaths, drainage, stormwater drainage and water reticulation and the like. The value of all such services will then be included in the total value of the works on which your fees will be based. If you wish to employ the services of a civil engineer to assist you on any of these services you may do so at your own cost. Specialists will, however, be appointed by the Department for the design of the electric power supply, area and/or security lighting and any site alarm system.

A.6.2 Unless otherwise agreed, you will be remunerated for services, rendered in accordance with the letter of appointment.

A.6.3 Certain items which are external to the building or which are regarded as items of equipment are not regarded as an "integral part of the project or design of the works" and consequently the cost of these items are to be excluded from the value of the works on which a percentage fees is calculated.

The Architect may, however, be remunerated on a quantum merit basis for his involvement in the provision of these items. This remuneration must be agreed to in writing by the Project Manager before this work is undertaken.

The following items are not regarded as "an integral part of the project or design of the works":

1. Roads, bridges, pathways and parking areas as designed by Civil Engineer. The Civil Engineer will be involved in the detail design but you will nevertheless have an input.
2. Layouts of sports fields and gardens.
3. Municipal connection fees.
4. Main water supply, major water reticulation, reservoirs and purification plants.
5. Main electrical supply cables external to the buildings.
6. Electrical transformers, high tension gear, generating plants and uninterrupted power supply plant.
7. Main collector and outfall and sewers disposal plants.
8. Steam and water boilers specified by the Engineer.
9. Fire fighting equipment specified by the Engineer.
10. Projectors, audio-visual equipment, television and computer equipment and electronic equipment.
11. Telephone and exchange equipment.
12. Artworks.
13. Landscaping, when designed by a landscape architect.

A.6.4 The following items are regarded as an integral part of the design of the works on which full fees may be calculated:

1. Electrical, water, sewage, steam, gas and communication reticulation systems.
2. Air-conditioning and ventilation systems.
3. Lifts and escalators.
4. Fire detection, security systems and sprinkler systems.
5. Hot water generating equipment e.g. geysers, calorifiers and solar heaters.
6. Built in refrigeration facilities and mortuary cabinets.

A.6.5 Where fees are payable on an estimated cost this will be calculated on the departmental estimate.

A.6.6 As the Department reserves the right at any stage to appoint specialists to design certain elements of the works, you should keep a precise record of time spent on preliminary work on such design as a basis of assessment of any appropriate fee.

A.7 THE BRIEFING MEETING

A.7.1 Convening of the meeting

As instructed in your letter of appointment, after you have accepted the appointment and have made a preliminary inspection of the site you are required to arrange a consultation with the Project Manager. This consultation is known as the briefing meeting.

A.7.2 Constitution of the briefing meeting

The briefing meeting will be chaired by the Project Manager for the project and will be attended by a representative of the Client Department where applicable. Representatives of all other members of the Professional Team and any special advisors the Project Manager deems appropriate, shall be invited. It will be the duty of the Principal Agent to take and distribute minutes of the meeting.

A.7.3 Responsibility of Consultants

The Department has appointed the Consultants as a team to render professional services and to find a functional, cost effective and architecturally accountable solution for the brief.

The Consultants led by the Principal Agent are jointly and severally responsible for the design, documentation and execution of the project.

This responsibility includes inter alia the following:

- A.7.3.1** Obtaining complete and correct site particulars.
- A.7.3.2** Compliance with the functional requirements of the Client Department.
- A.7.3.3** Compliance with the policy and requirements of the Department of Public Works by studying the full range of manuals and guides of the Department and by liaising with the Project Manager.
- A.7.3.4** Compliance with the National Building Regulations and requirements of Local Authorities and other statutory requirements.
- A.7.3.5** Execution of the project within the stated space norms and cost limits including the certification of compliance with these.

This responsibility includes the redesign and re-documentation at own cost if required to bring the project within the stated space norms and cost limits.

- A.7.3.6** Full responsibility for the timeous and complete exchange of information between the various disciplines in the Professional Team during all stages of the project. Regular co-ordination meetings of the Professional Team is required.
- A.7.3.7** Setting up of a detailed program for design and documentation of the project and the strict adherence to the target dates set for all stages of design and documentation. The programme to include the work of all disciplines.
- A.7.3.8** Monthly reports on progress during design and documentation.
- A.7.3.9** Complete and correct documentation.

Documentation will not be checked by the Department, but should be within the Guidelines of the Department. Documentation may be spot checked by the Department, but the final responsibility of the documentation is still the appointed consultants responsibility.

- A.7.3.10** Simultaneous completion of documentation of all Consultants ready for invitation of tenders on the set target dates

Submission of the complete documentation of all consultants to the Department for invitation of tenders will be co-ordinated by the Principal Agent.

A.7.4 Site considerations

- A.7.4.1** Except where conditions are laid down by the Department, consult the responsible officer in the Local Authority to establish their attitudes to the proposal and take due note of any advice which they wish to tender.
- A.7.4.2** At the briefing meeting you will be asked to report on the suitability of the Site for the project from every aspect upon which your professional opinion can be expressed, including not only adequacy in size and nature of the Site itself, but also whether you consider it to be suitably located for its purpose and in relation to its environment in general.
- A.7.4.3** You will be asked to give particulars of buildings which have been envisaged to be demolished, with your opinion for the necessity therefor. If you consider that any buildings require to be demolished in addition to those already instructed, authority will first have to be obtained from the Director-General along the right channels.
- A.7.4.4** You will further be asked to discuss how the Site can best be utilised and to draw attention to any features, regulations and the views of the Local Authority and/or Community in terms of A.7.4.1 hereof which may affect the design of the project.

A.7.5 Buildings and artefacts of historical importance and National Monuments

A.7.5.1 National Monuments and other buildings of historical significance

A.7.5.1.1 Where the service comprises the restoration of, or any architectural work of any kind to a building or part thereof which is a declared National Monument, and particularly where demolition is involved, you must formally advise the Director of the National Monuments Council when the service has commenced and arrange a joint meeting on Site between yourself, the Project Manager and representatives of the Department and the Council before sketch proposals are prepared. You must submit a written report of the proceedings at this meeting to the Project Manager.

A.7.5.1.2 After you receive the instructions of the Project Manager on the action to be taken, you should consult with the said Council direct on all minor matters and detailed execution and this must be arranged at the meeting described above, but any major matters arising later must again be referred to the Project Manager for a decision.

A.7.5.1.3 You may not accept instructions direct from the National Monuments Council.

A.7.5.1.4 Where buildings are involved which have not been declared National Monuments but which nevertheless have recognised historical significance, you must notify the Project Manager, who will establish and instruct you what procedure to take before you commence design work.

A.7.5.1.5 In terms of the National Monuments Act no building or part thereof which is older than 50 years may be demolished without the approval of the National Monuments Council.

A.7.5.2 Recovery of building elements or artefacts

A.7.5.2.1 Where demolition or removal of any elements of an existing building forms part of the project, you are required to identify any element which could be of historical interest and to consult the Project Manager as to whether such element should be preserved and, if not, how it is to be disposed of. In case of doubt the Project Manager will obtain a directive from the Heritage Asset Management Section of the Department.

A.7.5.2.2 If, during the course of excavations on the Site of the project, any object is unearthed which may possibly be an artefact of historical significance, the Project Manager must be notified before its removal.

A.7.5.2.3 Where the Site is that of a National Monument or other building of historical significance, you must instruct the Contractor to exercise great care during excavation work to ensure that any possible artefacts are recovered intact. The Department in its discretion may employ the services of an archaeologist or other relevant expert to supervise and give directions in respect of this work.

A.7.5.2.4 Ownership of any such artefacts or other elements recovered as described above will vest in the State and you will be instructed as to their disposition.

A.7.6 Accommodation requirements

You may be asked to comment on the adequacy and suitability of the schedule of accommodation supplied to you on acceptance of the commission. The accommodation requirements will be discussed in detail and the Client Department(s) will indicate the arrangement and interrelation of the elements thereof. Refer also to B.1.2 and B.1.4 hereof.

A.7.7 General comment (feedback) on the project

Apart from site and accommodation considerations as described in A.7.4 and A.7.6 hereof, your comments on any aspect of the project in the light of your professional knowledge and experience will be welcomed by the Department, not only at the briefing meeting, but also throughout the progress of your work on the project as it develops, and you are free to put to the Department at any stage your suggestions for the improvements of the project with regard to general or detailed planning and all aspects of design, construction, equipment, materials, finishes etc.

A.7.8 Work programme

Once a documentation programme for the execution of the project has been drawn up and agreed to, you must adhere thereto at all times. Provision must be made in the time schedule for preliminary and design work, estimation of costs and documentation by all members of the Professional Team. The Department will advise on suitable periods to be allowed for approvals.

Important note: The Department's preliminary programming chart prepared for budgeting purposes will be superseded by the approved programme submitted by the Principal Agent.

A.8 ADHERENCE TO BRIEF

A.8.1 The certified list of accommodation requirements

A.8.1.1 The Certified List of Accommodation Requirements coupled to the space norms and cost limits are the major control features employed by the Department.

A.8.1.2 For this reason you must pay specific attention thereto.

A.8.1.3 The Department of Public Works and the Client Department will ensure that the Certified Accommodation Requirements are correct.

A.8.1.4 You are therefor required to comply with them and strictly adhere to the following conditions:

A.8.1.4.1 In order to accommodate the Certified Accommodation Requirements in a regular structural grid while at the same time planning partitions to run into columns, walls or mullions you may vary any one room size by 10% up or down provided such rooms are identified and specifically approved by the Client Department if smaller than required and provided that the total net Certified Accommodation Requirements are not exceeded.

A.8.1.4.2 If any change to the Certified Accommodation Requirements becomes necessary for any reason whatsoever you may not incorporate such changes in your design until it is specifically authorised in writing by the Director-General.

A.8.1.4.3 The Department will only consider authorising such changes after receiving a written, motivated request from the Client Department.

A.8.1.4.4 This strict control of the Certified Accommodation Requirements must be complied with during the sketch plan, working drawing and erection stages of any one building project.

A.8.2 The costs

A.8.2.1 As far as costs are concerned, the major aim is to design all building projects as economically as possible. Planning within a departmental cost provision of a project is not necessarily cost effective if the required accommodation can be designed more economically.

A.8.2.2 The major aim to design economically is equally applicable at sketch plan, working drawing and erection stage of any one building project.

A.8.2.3 Space norms and cost limits will be set for this project. Such limits are not to be exceeded under any circumstances. Any cost for re-planning which may arise out of the set limits being exceeded, shall be for the account of the Consultants, jointly and severally.

A.9 APPROVAL OF DESIGNS

A.9.1 Official approval

Until formal approval of sketch plans has been given by the Director-General in writing, the Department may require you to effect any amendments thereto at any stage in the preparation thereof, or in its sole discretion may require you to prepare new sketch plans without any obligation for additional payment except in case of a major amendment to the brief.

A.9.2 Preliminary line drawings

Submission of preliminary line drawings and processing thereof by the Department in no respect relieves you of your obligation to prepare sketch plans as described above until receipt of formal approval.

A.9.3 Approval by a Client Department

Approval of line drawings or sketch plans either verbally or in writing by a Client Department is not binding on the Director-General and does not relieve you in any way of your responsibility for obtaining written approval of final sketch plans from the Director-General.

A.10 PROGRESS REPORTS

To control the strict adherence to the time schedule required for compliance with the documentation programme laid down in terms of A.7.8 hereof, you are required throughout the design and documentation stages to render to the Department's monthly progress reports on the last working day of each month on the form of which a copy is attached (see Annexure A). Monthly meetings with the other members of the Professional Team must be convened to provide you with the information for your report. In completing the form, special attention must be drawn to any delays and the causes thereof.

A.11 FINANCIAL CONTROL

A.11.1 Departmental budget

The space norms and cost limits are maximum norms. The Department makes a cost provision for each of its projects for budgeting purposes only. You are required to design the project as economically as possible (See A.8.2).

A.11.2 Approved cost limit

An estimate of cost will be approved concurrently with your design and in documenting the project you are required to adhere strictly to this cost limit, subject to escalation at a later date.

A.11.3 Certificate of compliance with space norms and cost limits

Each limit is to be controlled separately and cross funding shall only be allowed in cases where written permission has been granted.

Consultants are to apply cost control and provide elemental estimates at each stage, adjusted to a common date and compared with the set limit(s).

Cost reconciliation schedules are to be provided.

Space must also be controlled and reconciled with the approved limit(s). All planning units are to be provided and if not, this must be pointed out. The non-provision of planning units will result in reduction of space norms and cost limits.

The Department must, at completion of each planning stage mentioned hereunder, be provided with certificates that the limit(s) is/are not being exceeded before the next stage may be proceeded with -

✍ prior to approval of sketch plans;

✍ at completion of working drawings;

✍ at completion of project.

No tender which exceeds the cost limit(s) will be accepted.

A.11.4 Amendments required to conform to cost limit

If, in carrying out the approved design, you unjustifiably exceed the authorised cost limit, you will be

required to amend your documentation at your own cost as required to comply with the cost limit/s. In addition, you will be responsible for the payment of the cost of any fruitless expenditure incurred by any other members of the Professional Team in respect of fees for amending their documentation to comply with the changes. If you find any difficulty in complying with this instruction you must consult with the Project Manager immediately for resolution of the problem.

A.11.5 Proprietary articles

A.11.5.1 Since the State fully supports the principle of the open market system within the Republic you must refrain from specifying any articles or manufactured building elements by using their proprietary or specific manufacturers' name and describe them instead by their performance and materials criteria.

A.11.5.2 Preference must be given to South African products.

A.11.5.3 Should you wish to use any proprietary and/or imported articles, finishes, materials or building elements whose use you consider unavoidable you must submit a list thereof before working drawing stage together with written motivation for approval by the Department.

A.11.5.4 If the use of proprietary articles, finishes, materials or building elements is approved by the Department they must be specified by name and the suffix "or equal approved" by the Department in conjunction therewith. All possible acceptable alternatives should also be specified.

A.11.5.5 Since transport costs should be kept to a minimum and local industry given preference you must use locally manufactured articles, finishes, materials and building elements unless their quality and cost is unacceptable in comparison with similar items available from a greater distance.

A.11.6 Substitution of uneconomical elements

Where components, materials and/or finishes or other design or constructional elements not specifically indicated on the approved sketch plans, but incorporated in your working drawings, are considered by the Department to be unnecessarily luxurious, whether the agreed cost limit is thereby exceeded or not, the Department reserves the right to require you to amend the documents to substitute less costly elements without payment of any additional remuneration.

A.11.7 Financial control at contract stage

As Principal Agent you are also responsible, with the aid of the other Consultants, for financial control of the project throughout the contract stage, as detailed in Chapters E: Contract Administration and Inspection and F: Variations of this manual.

A.12 THE PROFESSIONAL TEAM

A.12.1 Appointment of other Consultants

The Engineers, Quantity Surveyors and any other specialists comprising the Professional Team are separately appointed by the departmental Project Manager and are briefed by them in respect of their terms of agreement, departmental standards and technical aspects of their work. In all other respects they will be briefed by you as Principal Agent.

A.12.2 Liaison with Consultants

In terms of their several agreements, the Engineers and Quantity Surveyor in the Professional Team are required to liaise very closely with you during all stages of the project and to keep you fully informed of all relevant developments.

A.12.3 Enquiries

Consultants are required to channel all enquiries to the Department through you as Principal Agent.

A.12.4 Design co-ordination

As Principal Agent you are responsible for the co-ordination of all engineering requirements with each other and with your overall design concept and also for the preparation of service co-ordination

drawings as described in C.6 hereof; but Consulting Engineers are responsible for all matters of design in respect of the work which they are commissioned to do.

A.12.5 Responsibility for changes

You must bear in mind that if you make unilateral changes to your design or documentation without the prior written authority of the Department, and if such changes involve work done by any other Consultant being discarded in such a manner as to involve fruitless expenditure, you will be held liable to defray the costs of such expenditure.

A.12.6 Programme for Professional Team

Upon appointment the members of the Professional Team will submit to you their suggestions for the estimates of cost and planning periods. You must submit a co-ordinated programme for design, documentation and execution of the project including the work of all disciplines in the Professional Team.

A.12.7 Budget estimates

Although detailed technical requirements will seldom be available in the initial stages of planning, the Consulting Engineers will draw up a budget estimate for each engineering service in consultation with you and the rest of the design team. These estimates will be based on the schedule of accommodation or, if available, on your preliminary design drawings. They will be based on costs at the time of their preparation with provision for escalation given separately. The estimates will be incorporated by the Quantity Surveyor as separate items into a composite estimate which he will forward to you for transmission to the Department.

A.12.8 Forms of contract for engineering work

A.12.8.1 Comprehensive contract

All work is included in the document on which the Main Contractor tenders.

A.12.8.2 Nominated subcontract

Separate tenders are called by the Department and the successful tenderer becomes a Nominated Subcontractor of the Main Contractor.

A.12.8.3 Separate specialist contracts

Documents are prepared by the relevant Consultants, after which the Department will obtain and process the tenders and enter into direct contracts separate from the main building contract.

A.12.8.4 Cost Implementation of Contracts

Irrespective of the forms of contracts used, the combined costs thereof may not exceed the cost limits set for the project.

A.13 THE SITE

A.13.1 Location and boundaries

The Department is responsible for supplying you with a surveyor's diagram of the Site and for pointing out the boundary pegs. This will be done by the Project Manager at the initial meeting at the Site. As Principal Agent you are responsible for obtaining all other site particulars which are necessary to enable you to design and document the project and for the accuracy and completeness thereof. The Project Manager may furnish preliminary site particulars on Departmental form: Report on Property, (Annexure B), but these are for the purpose of obtaining site clearance only and will not relieve you of any responsibility in this respect.

A.13.2 Site particulars required

The particulars which you must obtain and verify are as detailed on form PW 148 with the exceptions specifically excluded herein. The main particulars required are as follows:

Levels and dimensions.
Physical features and their sizes and positions.
Means of access.
Adjoining roads and buildings.
Services available with sizes, positions, capacities and depths.

Servitudes and encroachments, if any.
Regulations of Local Authorities.
Local availability of materials including material restrictions
Floor space ratios - wind direction
Height restrictions - access restrictions
Coverage - adjoining business
Floor lines

A.13.3 Assistance with site survey

In cases where the nature of the survey work obviously exceeds that required of an architect, you must apply for assistance to the Director-General, subject to whose prior written approval a claim may be made for the cost of such assistance.

A.13.4 Nature of the ground

A.13.4.1 The nature of the ground will determine the most suitable type of building (e.g. single or multi-storey), the design of foundations and the depth of excavation and fill.

A.13.4.2 The Project Manager or Consulting Structural and/ or Civil Engineer will advise you at the briefing meeting of any considerations which affect the design of the building and its position on the site. Soil investigations deemed necessary must be arranged in consultation with the Consulting Structural Engineer.

A.13.4.3 The Structural Engineer will also furnish you, as Principal Agent, with information regarding estimated percentages of soil, soft rock and hard rock respectively in the ground and you must pass this information to the Quantity Surveyor to enable him to measure the relevant quantities of the different materials likely to be encountered.

A.13.4.4 The Project Manager will decide whether further tests will be required for the design of foundations for roads and parking areas. Where an engineer has not been appointed you must negotiate with the Project Manager on how to obtain the necessary advice regarding the design of all roads and parking areas.

A.13.5 Electrical requirements

It is the Consulting Electrical Engineer's responsibility to determine the restrictions and requirements in respect of the electricity supply and to provide you with the information which you require in this respect.

A.13.6 General suitability of the Site

A.13.6.1 In terms of paragraph A.7.1 hereof, upon accepting the commission and before requesting the Project Manager to convene the briefing meeting, you are first required to make a preliminary inspection of the Site accompanied with the Regional Representative or his nominee and thereafter to report on the Site as detailed in A.7.4.2 to A.7.4.4 and A13.2.hereof.

A.13.6.2 If any negotiations are required in connection with the interpretation of possible relaxation of the requirements of Local Authorities such as town planning regulations or aesthetic restrictions, you may carry these out informally in the first place; should formal application for relaxations be necessary, this will be made by the Department based on details supplied by you.

A.13.7 Visits to the Site

As stated in A.13.6.1 hereof, the preliminary site visit must be arranged. On all subsequent occasions you are authorised to visit the Site of the Works as frequently as is justified. (Refer to letter of appointment).

A.14 THE DRAWINGS

A.14.1 Size of drawings

In general, all drawings are to be standard A.1 size, 841 x 594 mm. By prior authority of the Department, where necessitated by a large project, size A.0 1189 x 841 mm, may be used. All drawings for the project must be of one size. All consultants must supply their own drawing paper of appropriate approved quality.

A.14.2 Layout

All margins and the vertical title panel along the right side of drawings, must be in accordance with Annexure C. and any later amendments thereof. Consult with the Project Manager on the latest title block.

A.14.3 Method of drawing

Prepare the drawings in accordance with the latest publication on Building Drawing Practice issued by the South African Bureau of Standards in respect of metrication practice, layout, scales, dimensions, graphic symbols, lines and lettering, except in so far as these may be varied by the Department's instructions.

A.14.4 Printing and duplicating

A.14.4.1 The Professional Team will provide all copies of drawings and documents required for tendering purposes and will furnish the Contractor with three sets of copies of all drawings and documents at the handing-over-of-site meeting. The Department will require copies of drawings as defined in the following paragraphs.

A.14.4.2 You are required to supply at your own expense all polyester negative prints required to form part of your original set of drawings, such as negative copies for plotting water, drainage, telephone and partitioning layouts, door numbering plans, service co-ordination drawings, as-built drawings and the like.

A.14.4.3 You are required to provide polyester negative prints of the contract drawings and blackline paper prints of all your other working drawings to form a set of prints which will be retained by the Department and will be known as the master set. They will remain unaltered in any way as a record of the original working drawings. All variations will be carried out on your original drawings, which will be retained in your office for the purpose, or where necessary on additional drawings, in accordance with the instructions in Chapter F: Variations. The Department will pay for the cost of all copies of Variation Order drawings required for issue or record purposes..

A.14.4.4 When your design drawings are completed, you are required to submit at your own cost one set of black line paper prints to the Department.

A.14.4.5 It will be expected of you to issue drawings, whether these may be polyester transparent prints or black line paper prints, to the other members of the Professional Team in sufficient numbers to enable them to perform their respective professional services. The Department will reimburse you for the cost thereof.

A.14.4.6 The Department requires prints of your design drawings for tendering and contract purposes and for Departmental use.

A.14.4.7 You should keep careful records of all prints in connection with the project and any claim for reimbursement of the cost of these must be accompanied by full details, including receipted accounts. The Department will not reimburse you for prints issued by you directly to the Client Departments.

A.14.5 Posting drawings

- A.14.5.1** To safeguard drawings against loss or damage when sent by post or otherwise they must be rolled inside a tube of rigid material and securely wrapped. A copy of a covering letter, of which the original is sent separately, must be enclosed.
- A.14.5.2** Whenever original drawings are sent to the Department, you must keep a set of blackline paper prints, the cost of which will be reimbursed by the Department. Drawings must be registered or insured for a sum which will cover the cost of making a set of negatives by photographic process from the prints retained or the cost of scanning these.
- A.14.5.3** If required very urgently, drawings may be sent by the Post Office "priority mail" before 16:00 on the day of dispatch and the Department must be advised separately to fetch the parcel from the Post Office after 8:00 the following day.
- A.14.5.4** Drawings are in no circumstances to be sent to the Department by air freight unless delivery and the cost thereof is arranged by yourself.

B. THE DESIGN

B.1.1 The brief

Design the project to meet the brief as confirmed in terms of A.7 hereof.

B.1.2 Basic accommodation

Adhere strictly to the schedule of accommodation within the space norms and cost limits as it may be modified and confirmed in terms of A.7 and A.8 hereof.

B.1.3 Planning

In the interest of the State, it is required that the planning and design of all buildings be directed to functional and energy-saving solutions by the observance of such methods as described in the following paragraphs. In this regard the appointed Quantity Surveyor should be consulted for cost advice.

B.1.3.1 Most advantageous siting of the building in relation to the ground formation, topography, etc.

B.1.3.2 Most advantageous orientation of the buildings with regard to north-south aspect and climatic conditions.

B.1.3.3 Implementation of the most suitable construction of building with the emphasis on heavy conventional construction and optimum wall to window relationship within minimum glass area.

B.1.3.4 Planning of low buildings in preference to high-rise, due regard being paid to site value.

B.1.3.5 Planning of future extensions to buildings in the horizontal direction.

B.1.3.6 Use of fire-resisting materials of South African manufacture with low cost maintenance characteristics.

B.1.4 Consultation with the Client Department

Arrange through the Project Manager to discuss the planning of the accommodation with the Client Department or relevant Authority, but if any changes in the extent of the accommodation are proposed obtain the authority of the Director-General in writing before incorporating them in the design. The Client Department's or relevant Authority's approval is subject to confirmation by the Director-General. See A.3, A.9 and B. 17.3.

B.1.5 Consultation with Local Authority

B.1.5.1 You are referred to your letter of appointment and your attention is drawn to the fact that you should discuss the project with the executive officer of the Local Authority in order to clarify any statutory town planning regulations, building lines, height restrictions, coverage, floor space ratios etc. on an informal basis.

It is the Department's policy to comply with these requirements as well as any aesthetic and environmental recommendation in a spirit of co-operation.

B.1.5.2 You must also consult the Local Authority in respect of service connections, such as water, electrical power, sewage and stormwater and comply with their requirements as far as possible without deviating from Departmental requirements.

B.1.5.3 In discussing the project with the Local Authority you must also establish the permissible location and construction of vehicular access points for standard council carriage way crossings to the Site which you must incorporate in your design.

B.1.5.4 You must discuss the project with the Fire Chief of the Local Authority and obtain his approval in writing.

B.1.5.5 Submission of plans to Local Authority

You must submit the sketch plans to the Local Authority for information and comments under cover of a letter addressed to the Local Authority. A copy of the letter must be sent to the Project Manager.

B.1.6 Auxiliary accommodation

In addition to the basic accommodation requirements furnished, provide in the planning for the necessary entrance and communication spaces and facilities and service rooms and for sanitary, rest and cleaners' rooms as detailed in B.7 hereof, unless already provided in the accommodation schedule.

B.2 DESIGN DRAWINGS REQUIRED

B.2.1 Concept drawings

These drawings are required for submission to the Steering Committee and must include the following:

- B.2.1.1** Locality plan to scale not smaller than 1:1000.
- B.2.1.2** Site plan in line form to scale not smaller than 1:500 showing the information as required under B.2.2.2.
- B.2.1.3.** Site plan showing the information scheduled in Item 1 of the Sketch Plan Check List, a copy of which is attached hereto (Annexure D) to scale not smaller than 1:500.
- B.2.1.4** Plans, sections and typical elevations to scale not smaller than 1:200. These concept drawings may be in single line form.

Note: The concept drawings must show all space provisions and planning relationships and contain sufficient information to enable the Project Manager to assess the concept realistically.

B.2.2 Sketch plans

Final sketch plans for submission to the Project Manager must consist of the following:

- B.2.2.1** Locality plan showing locality of the Site in relation to main business area, public buildings and main streets to a scale not smaller than 1:1000.
- B.2.2.2** Site plan showing the information scheduled in Item 1 of the Sketch Plan Check List, a copy of which is attached hereto (Annexure D) to scale not smaller than 1:500.

Note: Draw the site plan and all building plans with the same orientation on each sheet. Show the north point in the bottom right hand corner of each sheet.

B.2.2.3 Plans, sections and elevations

- B.2.2.3.1** Scale not smaller than 1:200.
- B.2.2.3.2** The information to be shown is scheduled in Items 2, 4 and 5 of the Sketch Plan Check List.
- B.2.2.3.3** Show on plans:
 - (i) Names of rooms, with their areas, within the room perimeter: numbers and legends are not acceptable except where specifically instructed by the Department.
 - (ii) All kitchen fittings, whether included in the building contract or not, indicating front and rear of fittings and stating the number of persons to be catered for.
 - (iii) All furniture in bedrooms and bed-sitting rooms (one example for each repeated type).
 - (iv) The layout of tables and chairs in dining and mess rooms, stating the number of persons to be seated.
 - (v) Seating in theatres and lecture rooms.
 - (vi) Outlines of all individual parking spaces in parking areas.
 - (vii) All shelving layouts, security - and laundry equipment, built - in cupboards, etc.

- B.2.2.3.4** Draw all elevations of the building(s) and sufficient sections to illustrate fully the various parts and construction of the building(s).
- B.2.2.3.5** Illustrate any special construction by detail sections, showing how practical and/or waterproofing problems should be overcome.

B.2.3 Numbering of drawings

The following Departmental standard system of numbering drawings, which comprises the service number (designated "Number") followed by a suffix, as below:

Concept drawing:
Number/P1, -P2, -P3, etc.

Second concept drawing:
Number/2P1, -/2P2, -/2P3, etc.

First design drawing (sketch plan):
Number/A1, -/A2, -/A3, etc.

Amended design drawing (second sketch plan):
Number/B1, -/B2, -/B3, etc.

Subsequent amended design drawings:
Number/C, D, E, etc.

B.3 STATUTORY REQUIREMENTS

B.3.1 By-laws and town-planning regulations

- B.3.1.1** All town-planning regulations and such related by-laws and National Building Regulations as are concerned with building line setbacks, height restrictions and the like must be strictly adhered to.
- B.3.1.2** You are required to familiarise yourself with these requirements. In the event that you consider that they restrict the planning and design to an extent which prevents you from making the most advantageous utilisation of the Site or provision of the accommodation requirements, you should have preliminary informal discussions with the responsible officer of the Local Authority with regard to any possibility of relaxation of the regulations which you deem necessary or desirable. The results of such discussions must be reported to the Department, but you must not proceed on the basis thereof without further instruction. (Refer to A.13.6)
- B.3.1.3** Other by-laws concerned with the detailed design of the building must be observed where practicable except as otherwise directed in this manual or other official instructions of the Department.

B.3.2 The National Building Regulations

You are to comply strictly with the National Building Regulations in all respects. Special permission must first be obtained from the Director-General before deviating therefrom in any way whatsoever.

B.3.3 Environmental requirements

Besides its statutory powers, the Local Authority may have special requirements with which compliance is desirable, such as those affecting the aesthetic design of the project or other environmental considerations. You must ascertain the Local Authority's wishes and, subject to the agreement of the Department, implement such of the suggestions as are practicable within the scope of your brief.

B.3.4 Natural lighting and ventilation

Plan all rooms to have adequate natural lighting and cross ventilation in terms of the National Building Regulations except where the Department has specifically directed or agreed to the installation of air-conditioning or artificial ventilation and adequate artificial lighting. Glass louvres may not be used in external windows because of security requirements.

B.3.5 Electricity supply requirements

The supply Authority's building requirements will be determined by the Consultant Electrical Engineer and passed on to you for incorporation in the drawings.

B.3.6 Occupational Health and Safety Act

B.3.6.1 Drawings of buildings or parts thereof to which the Occupational Health and Safety Act, Act 85 Of 1993 as amended, applies are no longer required to be approved by the Department of Labour. You must, however, ensure that the finished building complies with the Act in all respects. If on inspection by the Department of Labour the building is found not to comply you may be held responsible.

B.3.6.2 All equipment supplied and installed under your control shall also meet the requirements of the Act.

B.4 BUILDING ECONOMY

B.4.1 Preference to South African Materials

Imported products may only be specified with the prior authority of the Department. Applications for such authority must be submitted in writing and you are required to establish that no South African product, or alternative material, method of construction or finish will satisfy the requirements of the service. See also A.11.5.

B.4.2 Economy in design

Besides the above measures, you are required to devote special attention to economy of design in respect of planning, simplicity of form and regularity of structure. Spans in excess of 7 m will only be considered in exceptional cases. Consult the Quantity Surveyor in all questions of economy. See also A.8.

B.4.3 Height of rooms

For economy, room height should be kept to the practical minimum. This will depend on the shape, size and use of the room, due allowance being made for necessary clearance below lighting, other ceiling fittings and lintols.

B.5 FINISHES ETC., ON DRAWINGS

B.5.1 List finishes on drawings

List a schedule of the main internal and external finishes, either on the plans, sections and elevations or in the right hand column of the relevant design drawings.

B.5.2 Use of trade names

In describing materials, components and finishes use only general descriptive terms. Where the use of trade names is unavoidable to describe a product, they must be followed by the words "or equal approved". See also A.11.5.

B.6 ROOFS

B.6.1 Flat roofs: Restricted use

In the light of the Department's experience that flat concrete roofs covered with built up waterproofing membranes generally fail due to a variety of causes and subsequently leak, the use of these, other than by prior agreement with the Department, will be restricted to very minor sections of a building.

B.6.2 Elimination of box gutters

B.6.2.1 Box gutters are defined as gutters in which the outer side of the gutter is not lower than the inner side, and which are so designed that rainwater cannot freely overflow the outer edge for the full length of the gutter, so enabling the water to fall on to the ground outside the building, thus preventing any leakage to the inside.

B.6.2.2 Such box gutters, of whatever material they may be made, but in particular those of reinforced concrete lined with a waterproofing membrane, are not acceptable. Upon written consent limited use of box gutters (at least 350 mm wide, 250 mm high and open at both ends) formed out of a single length 1,2mm thick galvanised sheeting not by the cold role forming method, may be considered.

B.6.3 Pitched roofs over slabs

In all cases where a concrete slab occurs at roof level for constructional or thermal reasons, such as for security or fire protection, the slab is to be covered by a pitched roof. The pitch and covering material may be determined by circumstances of locality, climate and design.

B.6.4 Insulation of ceilings

In all buildings the ceilings are to be thermally insulated with a 75 mm thick layer of glass fibre or equivalent.

B.6.5 Downpipes

In all cases rainwater downpipes must be on the outside of the buildings, not encased in the walls or structure. No downpipes smaller than 100 mm diameter may be employed.

B.7 SANITARY, REST AND CLEANERS' ROOMS

B.7.1 Accommodation to be provided

In public buildings, whether specified in the brief or not, auxiliary accommodation such as sanitary, rest and cleaners' rooms is to be provided in accordance with the following paragraphs:

B.7.2 Sanitary accommodation

Provide sanitary accommodation based on the numbers and sexes of staff, and where directed for the public for whom the building is designed, in accordance with the Department's "Guide for architects concerning drainage, water supply and stormwater drainage."

B.7.3 Entrances of lavatories

Plan the entrances of lavatories for the different sexes to be suitably spaced and screened to prevent embarrassment.

B.7.4 Wall thicknesses

Thicken the lower section of brick walls onto which sanitary fittings are hung if necessary for safety and the housing of pipes if required.

B.7.5 Position of soil fittings

Place all soil fittings against or adjacent to external walls or walls of ventilated pipe ducts.

B.7.6 Ventilated lobbies

Provide a ventilated lobby between a lavatory and a habitable room or workroom.

B.7.7 Female rest rooms

Provide female rest rooms where required, with space for a couch.

B.7.8 Cleaners' rooms, stores, rest rooms and toilets

B.7.8.1 Provide at least one cleaners' room in every public building. Cleaners' rooms and rest rooms must be cross-ventilated in terms of the National Building Regulations.

B.7.8.2 As a general guide:

In large buildings provide one cleaners' store room of 6 m² clear floor space for every 1350 m² or part thereof of building floor area. Each such cleaners' store room is to be provided with a drip sink and a 4 m run of shelving.

Provide accommodation of cleaners' rest rooms at the rate of one cleaner per 450 m² of building floor area. Each rest room is to have a clear floor space of 1 m² per cleaner, with a minimum of 8 m², and is to be provided with one locker per cleaner.

B.8 STRUCTURAL REQUIREMENTS

B.8.1 Consultation

Discuss structural requirements with the Consultant Electrical Engineer or, if no consultant is appointed, request the Project Manager to arrange for such appointment.

B.8.2 Structure to be shown

B.8.2.1 Show on design drawings the principal structural elements, such as reinforced concrete framing and steel roof trusses. The latter need only be shown in outline, as they will be designed and detailed by the Structural Engineer.

B.8.2.2 Timber roof trusses will be either to departmental type or designed by the Structural Engineer, refer to C.2.5 hereof, but must nonetheless be shown on your documents.

B.9 ELECTRICAL REQUIREMENTS

B.9.1 Consultation

Discuss mechanical requirements with the Consultant Electrical Engineer or, if no consultant is appointed, request the Project Manager to arrange for such appointment and include on your sketch plan all the accommodation required for lifts, emergency generators, substation gear, etc.

B.10 MECHANICAL REQUIREMENTS

B.10.1 Consultation

Discuss mechanical requirements with the Consultant Mechanical Engineer or, if no consultant is appointed, request the Project Manager to arrange for such appointment.

B.10.2 Noise and pollution

Plan the position of mechanical plant, such as air-conditioning, refrigeration, compressors and ventilation plant, where it will create the least disturbance, but within practical and economical constraints. Do not place such plant immediately above or below offices, nor near neighbouring residential or office buildings. Show on the site plan the position of adjoining property to enable the possible effect thereon to be evaluated. Adequate access to mechanical equipment (for maintenance or replacement) must be provided.

B.10.3 Planning of air-conditioned spaces

- B.10.3.1** In no circumstances plan for air-conditioning without the prior written authority of the Department.
- B.10.3.2** Plan on a north-south orientation wherever possible. Windows must not face East or West, if unavoidable they are to be of minimum necessary area with the smallest openings practicable.
- B.10.3.3** Windows are not to be double glazed, but where exposed to excessive direct sunlight external protection is to be provided.
- B.10.3.4** Where air-conditioning plants are to be provided, the floors are to be waterproofed. An adequate water overflow outlet is to be provided.

B.10.4 Planning of central heating boiler rooms

- B.10.4.1** Place centrally and, where there are varying heights, preferably below the highest part of the building, with the expansion tank on top of the highest part (in or above the roof) as directly as possible above the boiler room.
- B.10.4.2** Where solid fuel is used, provide direct and adequate access to the boiler room for delivery and ash removal.

B.11 FIRE PROTECTION REQUIREMENTS

B.11.1 Determination of planning requirements

The planning requirements for fire protection are to be in accordance with the National Building Regulations and requirements of the Local Authority and the local Fire Chief.

Note: In case where there is no Local Authority the Department of Public Works acts as Local Authority (eg. Large military bases).

B.12 ACOUSTICAL REQUIREMENTS

- B.12.1** Discuss with the Department at the earliest stage of the preparation of working drawings any areas which require special acoustical treatment, such as theatres, lecture rooms, music rooms, courtrooms, conference rooms, typing pools, rooms housing noisy machinery and the like.
- B.12.2** In cases where you consider special treatment necessary you may apply to the Project Manager for the appointment of an acoustical consultant.

B.13 TYPE AND STANDARD REQUIREMENTS

B.13.1 Type drawings

The Department has type drawings of certain auxiliary buildings and elements. A list of current types is given in Annexure G. You must determine if any of these apply to the project and request a polyester negative print from the Project Manager; see Clause C.2.3. Ensure that other consultants are informed when type drawings are used.

B.14 FACILITIES FOR DISABLED PERSONS

B.14.1 Minimum provision

Provision for disabled persons must be made in State buildings in accordance with Part S of the National Building Regulations and the Standard Electrical Mechanical and Architectural Guideline for the Design of Accessible Buildings (Facilities for disabled persons).

The same provision must be made in the following types of buildings to which the public has access even if not required in terms of the Regulations because they are smaller than stipulated:

Courts of Justice.
Magistrate's Courts.
Clinics.
Police Stations.
Offices.

Any uncertainties regarding the provision of facilities for disabled persons must be directed to the Departmental project manager for clarification.

B.15 CHECK LIST

B.15.1 Completion of check list

Complete for submission with your design drawings the two check lists described below. Design drawings will not be accepted unless accompanied by these check lists fully completed and signed.

B.15.2 Sketch Plan Check List (see Annexure D)

This list is to confirm that all requisite items have been shown on the drawings, all necessary consultations have taken place and instructions generally have been complied with.

B.15.3 Schedule of Construction and Finishes, Use Factor Analysis and Estimate (see Annexure E)

The title of this list is self-explanatory.

B.15.4 Comparative schedule of rooms

See Item 3 of the Sketch Plan Check List.

In the event that you have made any deviation from the accommodation requirements, state the reasons and quote your authority for such deviations.

B.16 SUBMISSION PROCEDURE

B.16.1 General procedure

The procedure in the following paragraphs B.16.2 and B.16.3. are to be followed for all Projects.

B.16.2 Submission to the Department

As soon as you have completed the concept drawings, submit one clear blackline print at your own cost, by post or hand to the Project Manager.

B.16.3 Scrutiny by the Project Manager

Your concept drawings will first be scrutinised by the Project Manager. If the Project Manager finds that you have in any way not complied with the terms of the brief, or with departmental standards or instructions, or should he/she finds your solution in some other respect unacceptable, you may be required to amend your drawings or to redesign the project before it is submitted to the Project Manager again for final approval.

The following documents are required for submission to the Project Manager:

1. Concept drawings as previously described.
2. Confirmation by the Principal Agent and full design team that the concept has been designed within the space norms and cost limits.

B.17 AMENDMENTS TO DESIGN DRAWINGS

B.17.1 Requirements of the Project Manager

You will be advised of any amendments required by the Project Manager and whether these are to be made on the design drawings and resubmitted, or incorporated in the working drawings.

B.17.2 Amended design drawings

Where you are required by the Project Manager to amend or redraw your designs, the first amended set is to be renumbered with the suffix B and C, D etc., in case of subsequent amendments.

B.17.3 Approval of sketch plans

Upon approval of your sketch plans you will receive written notification thereof from the Project Manager. See paragraph A.9.1 for conditions of approval. If the service is to be proceeded with, you will receive instructions at the same time to prepare the necessary documentation.

C. DOCUMENTATION STAGE

C.1 GENERAL WORKING DRAWINGS REQUIRED

C.1.1 Compliance with departmental requirements

Since the full detail design of a project is approved at sketch plan stage by the Department of Public Works, you are required to comply strictly with the approved sketch plans and any amendments thereto during the preparation of the working drawings.

C.1.2 Compliance with National Building Regulations

C.1.2.1 It is your responsibility to ensure that the working drawings comply with the National Building Regulations. Where departmental requirements are of a higher standard than the minimum requirement of the National Building Regulations, the Departmental requirements must be complied with.

C.1.2.2 You are nevertheless required to keep in touch with the Local Authority on the technical, design and environmental aspects as described under B.1.5 and ensure good co-operation at all times.

C.1.2.3 You are required to submit to the Project Manager a certificate stating that you have complied with the National Building Regulations.

C.1.2.4 Submit your working drawings to the Local Authority as was done with sketch plans.

C.1.2.5 No fees are payable to Local Authorities for inspection of plans.

C.1.2.6 Where there is no Local Authority the Department is the authority.

C.1.3 Site plan

C.1.3.1 Scale generally 1:500.

For small services 1:200.

C.1.3.2 Show the information required for the design site plan (B.2.2 hereof) in complete detail.

Notes:

- (i) All plans, including the site plan, are to be drawn with the same orientation on every sheet and with the North point in the bottom right hand corner next to the title panel.
- (ii) All drawings are to have the service file number in the title panel under "reference number".
- (iii) Each drawing is to have the service title in wording identical to that on the letter of appointment, in heavy lettering. WCS number must also be shown in the title block.
- (iv) Drawing numbers are also to be in bold figures not less than 8 mm high.

C.1.4 Plans, sections and elevations

C.1.4.1 Scale normally 1:100.

Note: If, for any reason, you wish to depart from standard drawing procedure, eg. by drawing plans, sections and elevations to 1:50 scale, or by the use of a coding system in place of normal annotation, you must first obtain the authority of the Project Manager.

C.1.4.2 Fully dimension and annotate descriptions of construction and materials. (See B.5.2 hereof regarding descriptions).

C.1.4.3 Draw plans of foundations, all floors and roof and if necessary of ceilings. (See C.9.3 hereof regarding lighting fittings).

C.1.4.4 Draw sections as necessary to illustrate fully the different parts of the building(s).

- C.1.4.5** Draw elevations of every side of the building(s). These may conveniently be incorporated with sections as C.1.4.4 hereof in the form of sectional elevations.
- C.1.5 Detail sections**
- C.1.5.1** Scale 1:20.
- C.1.5.2** Draw sections wherever necessary to explain fully the construction and finishes of the various parts of the building(s).
- C.1.6 Miscellaneous details**
- C.1.6.1** Scale 1:20.
- C.1.6.2** Detail fully in plan, section and elevation stairs, toilets, fittings and any other items requiring illustration not covered by other drawings.
- C.1.7 Large scale details**
- C.1.7.1** Scales 1:10, 1:5 and 1:1.
Note: The use of 1:2 scale is not permitted.
- C.1.7.2** Detail to these scales any work for which full information cannot be shown to smaller scale.
- C.1.7.3** Moulded or modelled work must be drawn full size (1:1) in plan, section and elevation.
- C.1.8 Door schedule**
- C.1.8.1** Scale 1:20.

Supplement with larger scale details if necessary.
- C.1.8.2** Draw the doors and frames in plan, section and elevation, showing the surrounding construction of jambs, heads and thresholds, with the exception of standard flush doors and standard pressed steel frames, which need only be listed and fully specified on the schedule.
- C.1.8.3** Give each door type a code number (eg. D.1, etc.) and annotate the door openings on the main (normally 1:100 scale) plans with the corresponding numbers.
- C.1.8.4** Below the drawing of each door type, schedule, the number required, material, construction, finish and ironmongery to be fitted.

(See C.3.11 below for ironmongery).
- C.1.9 Window schedule**
- C.1.9.1** Scale 1:20.

Supplement with larger scale details if necessary.
- C.1.9.2** Draw the windows (except stock catalogue types) in elevation, showing the various fixed and opening lights, with plans and sections showing positions in wall and variations in jamb, head and sill details.
- C.1.9.3** Give each window type a code number (eg. W.1, etc.) and annotate the window openings on the main (normally 1:100 scale) plans with the corresponding numbers.
- C.1.9.4** Below the drawing of each window type, schedule the number required, finish, glazing and ironmongery to be fitted. Non standard metal windows, indicate material and construction as well.
- C.1.9.5** Indicate burglar bars, mosquito screens and other protective installations where required, with details as necessary to illustrate them.

C.1.9.6 All glass below 1 m above floor level and all glass in doors and sidelights must be laminated safety glass. Avoid all such installations where possible.

C.1.10 Schedule of finishes

List every room, communication space etc. on a drawing sheet or sheets and indicate in tabular form finishes to floors, walls, ceilings, trim, etc.

C.1.10.1 Drawings and schedule to be complete

Most of the Department's Major Works services will be for use with bills of quantities. In such cases, where there is no separate specification, you must ensure that all drawings and schedules are fully annotated and complete in every detail

C.2 PROCEDURE FOR THE PREPARATION OF WORKING DRAWINGS

C.2.1 Numbering of drawings

The departmental standard system of numbering drawings comprises the project number followed by a stroke and a suffix. In the case of working drawings the suffix consists of consecutive numbers starting with Number/1. The order of numbering should start with the site plan followed by general plans, sections and elevations, usually to 1:100 scale, then details beginning with 1:20 scale followed by larger scale details and schedules. Drawing numbers must be in heavy figures not less than 8 mm high.

C.2.2 List of working drawings

Put the full list of working drawings on the site plan in the top right hand panel. Should there not be sufficient space, then on a separate drawing sheet, numerically numbered first.

C.2.3 Standard type drawings, etc.

See B.13.1 hereof for location and boundaries and a list of type drawings in Annexure G. You must determine if any of these apply to the project and request a polyester negative print.

C.2.4 Structural work

C.2.4.1 Where the project involves structural framing and infill panels, consult the Consultant Structural Engineer, at the onset to agree requirements such as size and spacing of structural elements.

C.2.4.2 Collaborate closely with the Consultant Structural Engineer throughout and arrange for the regular interchange of information. Supply all relevant details when finalised to the Engineer so that the structural details can be completed concurrently with the architectural drawings. Any changes affecting the structure which you may make after this stage will render you liable to bear the cost in fruitless expenditure: See A.12.5 hereof.

C.2.5 Roof trusses

C.2.5.1 Timber roof trusses up to 12,5 m span for double pitched roofs and 10,5 m span for monopitch roofs are to conform to departmental Type Drawings Nos. GEN.014/1, -/2 and -/3. (Structural drawings Nos. S.6893 where listed/1, -/2 and -/3.)

C.2.5.2 Where timber roof trusses deviate from the type trusses in C.2.5.1 in respect of shape or pitch or span or spacing, then such trusses will be designed and detailed by the Structural Engineer and documented by you. For the required conditions for the use of prefabricated multi-nail trusses see Annexure H.

C.2.5.3 All steel roof trusses will be specially designed by the Structural Engineer.

C.2.6 Reinforced concrete slabs roof

C.2.6.1 Refer to the general instructions in paragraph B.6.1 on restricted use of flat concrete roofs.

C.2.6.2 In exceptional circumstances, where a concrete roof slab considered necessary, discuss the roof covering with the Project Manager and obtain approval before finalising the drawings.

C.2.7 Rainwater disposal

Indicate on the general working drawings the size and positions of gutters, outlets and downpipes. These are to conform to the requirements of the National Building Regulations. No downpipes are to be enclosed in masonry or structural columns but they may be designed to fit into recesses which are accessible. No downpipes are to be smaller than 100 mm in diameter.

C.2.8 Bilingual signs and notices

Public buildings require extensive signage and adequate provision must be made in the documentation. The requirements must be cleared with the Client Department at an early stage. All signs and notices for the public are to be in English. Specific instructions will be given where any additional language is required. The wording of all signs must be submitted to the Language Services Bureau of the Department of National Education for approval.

C.2.9 Occupational Health and Safety Act, 1993 (Act 85 of 1993) (act 85 of 1993, as amended)

The Act and any amendments must be complied with in respect of buildings and equipment: refer to B.3.6 hereof.

C.2.10 Reports on progress of documentation

Throughout the preparation of working drawings (as during all phases of your work) you are required to submit monthly progress reports on the work of all members of the Professional Team. See general instruction A.10 for procedure.

C.3 MATERIALS, COMPONENTS AND FINISHES

C.3.1 Annotation of drawings

Annotate the working drawings fully with descriptions of the materials, components and finishes to be used. Use only general descriptive terms, but if an item cannot be properly described except by its trade name, add the words "or equal approved". See also A.11.5.

C.3.2 Maximum standards

C.3.2.1 Conform to the requirements of the space norms and cost limits and to the other standards laid down in B.4 hereof and the provisions which have been approved by the Project Manager.

C.3.3 Under surface bed damp-proof membrane

C.3.3.1 Where the floor finish would be adversely affected by moisture penetration a damp-proof membrane is to be laid under concrete surface beds, comprising polythene sheeting complying with SABS 952,0,25 mm thick, laid in the widest practicable widths and turned up, dressed to load bearing walls and if applicable lapped with the damp proof course in the walls, all is described in the Department's standard "Specification of Materials and Methods to be Used" (hereinafter referred to as the Standard Specification), Clause 6.2.

C.3.3.2 The use of an under floor layer of hard-core is not permitted.

C.3.4 Concrete surface beds

C.3.4.1 Concrete floors on solid ground are to be 75 mm thick in all normal circumstances.

C.3.4.2 The use of floor hardener is subject to approval.

C.3.5 Brickwork

C.3.5.1 Choose the bricks based on your experience and with due regard for appearance, suitability, performance and economy. Preference must be given to local brick

C.3.5.2 To prevent alteration of the drawings in the event of changes in the available approved range, indicate brick facings only in general terms such as “light”, “dark”, “blue”, etc. The selected face brick must be measured in the Bill of Quantities and at least two alternatives must be given.

C.3.5.3 Indicate the method of tying face brickwork to brick backing and to concrete walls, beams and columns.

C.3.6 Coastal service

In coastal services use suitable materials which are resistant to corrosion.

C.3.7 Water piping and tanks

C.3.7.1 All piping in the ground from 80 mm diameter and above is to be of Class C fibre cement pressure pipe. That of less than 80 mm diameter is to be of Class 16 high density polyethylene or thin wall hard drawn monolythic copper.

C.3.7.2 Cold water pipe work above ground level, but concealed in roofs or ducts, etc., may be of galvanised steel, thin wall hard drawn copper, Class 16 rigid PVC or stainless steel for all diameters, but where exposed inside or outside a building, PVC pipe may not be used.

C.3.7.3 Hot water piping is to be of thin wall hard drawn copper or stainless steel for all diameters.

C.3.7.4 Cost considerations are of primary importance when deciding on the type of piping to be used. No piping of any type not mentioned above may be used except with the approval of the Project Manager.

C.3.7.5 Water storage tanks will usually be in heavy gauge galvanised steel plate for large tanks and in fibre cement for small tanks.

C.3.7.6 For full particulars see the “Guide for Architects concerning Drainage, Water supply and Storm-water drainage”. In case of doubt consult the Project Manager.

C.3.8 Timber

C.3.8.1 In annotating the drawings use only the general terms “softwood” and “hardwood”.

C.3.8.2 Use South African Pine for all structural timbers, stating the grade required. Preference is also to be given to locally produced timber for joinery work, e.g. skirtings.

C.3.8.3 Timber to be used for joinery work is to be decided in consultation with the Project Manager.

C.3.8.4 Softwood sizes are to be annotated on the drawings as the overall sizes given on the Bureau of Standards’ chart of metric timber sizes, whether wrought or otherwise.

C.3.8.5 Hardwoods are to be dimensioned to the exact finished size. Allowable tolerances will be stated in the relevant clauses of the Bill of Quantities.

C.3.9 Strong rooms and record rooms

C.3.9.1 Construction

Construct strong rooms and record rooms with concrete slab ceilings and floors. Walls are to be 220 mm thick brickwork or 200 mm thick concrete.

C.3.9.2 Strong room doors

Strong rooms doors are to comply with Category 1, 2, 3 or 4 of SABS 949 according to the type and degree of security required. For full particulars see Clause 13.13 of the Standard Specification.

C.3.9.3 Ventilators

Ventilators are to be provided in the walls of strong rooms as specified in Clause 13.15 of the Standard Specification.

- (e) All fittings in court rooms, viz, bench, witness boxes, dock and public benches and also tables for legal representatives, stenographers, press etc., all in accordance with departmental Type Drawings Nos. JUS.001/1 to-10.
- (f) Draining boards, worktops and cupboards under, including loose tables in kitchens, where these must match worktops.
- (g) All sanitary fittings.
- (h) Roof tanks.
- (i) Hand pumps such as semi-rotary wing pumps for small sumps.
- (j) Main telephone distribution board cupboards.
- (k) Cupboards and boards for the fire extinguishers and hose-reels.
- (l) Metal beds in prison cells, in accordance with Departmental Type Drawing No. PRI.015.
- (m) All kitchen equipment.

C.4.2 Fittings to be indicated “not included in contract”

Shown on the 1:100 or equivalent scale plans in dotted lines and marked “not included in contract” fittings such as the following:

- (a) Loose seating in assembly halls and lecture theatres, whether fixed or movable.
- (b) Standard steel lockers in change and rest rooms.
- (c) Technical and mechanical equipment, eg. Boilers, furnaces, hoists, refrigerators, dishwashers, sterilizers, incubators etc., if the Project Manager instructs you to provide these per separate contract.
- (d) Loose shelving.

C.4.3 Fittings etc. not to be shown

Tables, chairs and other loose furniture and fitments not fixed to the structure (except table in court rooms and certain tables in kitchens – see C.4.1 (e) and (f) hereof).

General note: The foregoing is for your general guidance only. You must ascertain the Client Department’s full requirements of fittings other than those listed above, and also for such items as burglar and insect proofing to windows etc. and discuss same with the Project Manager before including such items.

C.5 SUPPLEMENTARY DRAWINGS

C.5.1 Co-ordination of services

You are responsible for the co-ordination of all the services in the building(s), such as drainage and plumbing, water and electricity supplies, air-conditioning, fire protection, simple gas, vacuum and compressed air installations, and the plant and fittings in connection therewith.

C.5.2 Provision of drawings

C.5.2.1 Drawings of sewage and stormwater drainage, plumbing, water supply, hot and cold water services, gas, vacuum and compressed air installations are your responsibility. These are the series “A” drawings and the requirements are set out in C.7 hereof.

C.5.2.2 Drawings of electrical installations, fire protection and mechanical installations such as for air-conditioning, central heating, steam etc. will be prepared by Consultant Engineers, but you are responsible for their co-ordination within the design concept as a whole.

C.6 SERVICE CO-ORDINATION DRAWINGS: SUFFIX “C”

C.6.1 Drawings required

You are required to prepare co-ordination drawings of all services, of such nature as may be required to ensure

- (i) that the runs of the various services and infra structure are suitably and economically planned and adequately accommodated and that duct, pipe and cable runs do not interfere with each other;

- (ii) that the structure and finishes are suitable adapted to the requirements of service installations and vice versa;
- (iii) that the nature, layout and appearance of exposed fittings are in conformity with your design and
- (iv) that controls are positioned for ready access and satisfy the requirements of the Client Department and the Department of Public Works.

C.6.2 Incorporation in working drawings

The service co-ordination drawings must form part of the set of working drawings. They are to be on polyester transparent prints of the original 1:100 scale or equivalent general drawings. Retain the original drawing number and add the suffix C. If the relevant engineers' drawings are not ready in time, the co-ordination drawings must be prepared as soon as possible, preferably before the contract commences.

Sub-contractors must be furnished with copies of the co-ordination drawings and you must ensure that they follows them. You must also draw to the attention of the relevant Consultants that their documentation must make provision for the co-ordination drawings to be followed.

C.6.3 Collating engineers' drawings

In addition to preparing the key service co-ordination drawings, you are responsible for collating the various service engineers' drawings.

C.7 DRAINAGE DRAWINGS: SUFFIX "A"

C.7.1 Meaning of "drainage drawings"

The term "drainage drawings" denotes those auxiliary working drawings on which you are required to show sewage and storm-water drains, plumbing, hot and cold water supply and such other services as simple gas, vacuum and compressed air installations. Fire appliances and the water supply to hose-reels are usually also shown on the drainage drawings: See C.12.3. hereof. (Corrolate with the respective other disciplines).

C.7.2 Drawings required

These services are to be shown on polyester transparent prints of the original 1:100 scale or equivalent general drawings. Retain the original drawing number and add the suffix A. Where different services are shown on separate sets of drawings, refer to C.7.3 hereof.

C.7.3 Numbering combined and separate service drawings

In cases where it is necessary, owing to the size or complexity of the work, to show the various service installations on separate sets of polyester prints of the same original drawing, the suffix A will be supplemented by an additional letter or letters to designate the particular installation, as follows:

| | |
|----------------------------|--------------|
| Drainage and plumbing..... | Number + AD |
| Stormwater..... | Number + ASW |
| Hot and cold water..... | Number + AW |
| Fire services..... | Number + AF |

C.7.4 Drainage details

Supplement the transparent prints with additional detail drawings where necessary to illustrate the requirements fully.

C.7.5 Pipework

C.7.5.1 Chasing in 110 walls for water piping or drainage is to be avoided. Where such pipes are to be housed, thicken walls or use pre-designed recesses.

C.7.6 Site plan

Show all relevant main services on the site plan of the A series drawings.

C.7.7 Standard requirements

Prepare the drainage drawings in accordance with the Department's "Guide for Architects concerning Sewerage, Water Supply and Storm-water Drainage" and the National Building Regulations.

C.7.8 Fittings

C.7.8.1 Bowl urinals with manually operated valves are preferred.

C.7.8.2 Toilets in office blocks are to have wash hand basins, supplied with cold water only and without plug and chain. Full size basins, supplied with hot water and cold water, may be required in Police Stations. If so, you will be informed by the Project Manager.

C.8 TELEPHONE DRAWINGS: SUFFIX "T"

C.8.1 Initial consultation

Before commencing these drawings, consult the Regional Engineer of the Department of Posts Telecommunications and Broadcasting as to provisions for the requirements of the project.

C.8.2 Drawings required

Show the telephone installation on another set of polyester transparent prints of the relevant originals, retaining the original number plus the suffix T, supplemented by the details are required. The details should be drawn on the layout sheets as far as possible, supplemented by additional sheets if necessary. The telephone conduit and junction boxes shown by you will form part of the electrical installation.

C.8.3 Work to be shown

Show all conduit runs, hollow skirtings, junction boxes and details thereof, all in accordance with the directions contained in the booklet "Facilities for Telecommunication Services in Buildings", obtainable from the Government Printer, Pretoria, and in consultation with the Regional Engineer of the Department of Posts Telecommunications and Broadcasting.

C.9 ELECTRICAL INSTALLATIONS DRAWINGS

C.9.1 Drawings by Engineer

The drawings of the electrical installation will be prepared by the Consultant Electrical Engineer, but you are responsible for co-ordination; see C.5.2.2 and C.6 hereof. Where an Electrical Consultant is appointed you must supply him/her with a set of suitable polyester prints for the preparation of his/her drawings.

C.9.2 Work to be shown on general drawings

Show on the general working drawings the building work related to the electrical installation. The requirements, which you will obtain from the Consultant Electrical Engineer, include the following:

- (a) Lift motor rooms, shafts and pits (see also C.9.8 hereof for special drawings required for tendering for lifts);
- (b) cable ducts, cable entry pipes, floor ducts and power skirtings;
- (c) substations and distribution rooms;
- (d) holes for exhaust fans, etc.;
- (e) 220 mm wallcupboard for distribution boards.

C.9.3 Lighting fittings

C.9.3.1 In normal installations the Consultant Electrical Engineer will design the arrangement and types of fittings required to give an intensity and quality of electric light consistent with efficiency and economy, on both initial cost and maintenance. You must ensure that the fittings are sympathetic to your design and notify the Engineer timeously.

C.9.3.2 In the process of co-ordination as described in C.5.1 and C.6 hereof you will exercise control over the layout and type of fittings to suit your overall concept and the requirements of other service installations.

C.9.3.3 In the case of public buildings you may propose the use of special lighting fittings where justified to suit your aesthetic concept or the importance of the space to be lit. You and the Consultant Electrical Engineer must be in agreement with your proposals before incorporating them in the working or co-ordination drawings.

C.9.4 Lift installation drawings

Lift installation drawings are to be provided for tendering purposes, as described in C.9.8 hereof.

C.9.5 Sumps to lift pits

Where sumps are required to house pumps to keep lifts free of water, locate them outside the lift shafts so as to facilitate access for servicing and repairs.

C.9.6 Lift motor room floors

Provide lift motor room floors with a screed 64 mm minimum thick to house metal ducts, which will first be fixed by the Lift Contractor on the floor slab and subsequently screeded in.

C.9.7 Separate set of lift drawings

Prepare a separate set of drawings for lifts, numbered consecutively to the general working drawings, and furnish the Department with a set of polyester transparent prints for the preparation of tender documents for issue to Lift Contractors.

C.9.8 Lift drawings required

Provide the Department with a compact set of drawings, comprising the following:

C.9.8.1 Dimensioned plans of lift motor rooms to 1:50 or 1:20 scale. Show (with dotted lines) the position of the shaft below and means of access, and indicate window areas.

C.9.8.2 Two sections at right angles through each shaft from bottom of pit to motor room roof to 1:100 or 1:50 scale, fully dimensioned.

C.9.8.3 Typical floor plans showing the shaft and entrances on every floor.

C.9.8.4 Submit paper prints of the main 1:100 (or equivalent) working drawings at the same time as the lift drawings for checking.

C.10 LIGHTNING PROTECTION

C.10.1 Where to be provided

Establish the level of lightning protection required in consultation with the Consultant Electrical Engineer.

C.11 MECHANICAL INSTALLATION DRAWINGS

C.11.1 Drawings by Engineer

The drawings of the mechanical installation will be prepared by the Consulting Mechanical Engineer, but you are responsible for co-ordination; see C.5.2.2 and C.6 hereof.

C.11.2 Work to be shown on general drawings

Show on the working drawings work related to the mechanical installation, such as -

Boiler rooms;

Machine rooms;
Cold rooms;
Special concrete machine bases; and
Holes and ducts for plant, etc.

Obtain the requirements from the Consultant Mechanical Engineer.

C.11.3 Insulation under roofs

Provide 75 mm glass fibre blanket or equivalent to ceilings under roofs for thermal insulation. Where roofs have no ceilings enquire from the Project Manager if insulation will be required.

C.11.4 Louvres

C.11.4.1 Provide where required air intake and discharge louvres which have at least a 60 % free area.

C.11.4.2 The twice bent sheet metal louvres supplied as standard by manufactures of metal windows are not acceptable for this purpose, as they restrict the passage of air.

C.11.4.3 There are twice bent aluminium louvres available from air conditioning firms which may be used subject to the approval of the Project Manager.

C.11.5 Cold rooms

Cold rooms will usually be of the prefabricated type. Whether they are of prefabricated or conventional construction you will be supplied with information.

C.11.6 Mechanical service requirements

C.11.6.1 When the working drawings are submitted in accordance with the procedure described in C.13.1 hereof, furnish the Consultant Mechanical Engineer with a set of transparent paper prints of the 1:100 scale or equivalent general drawing. You will be advised of positions and sizes of ducts, holes, louvres, etc. required for incorporation in your final drawings.

C.11.6.2 When your final drawings are submitted in accordance with the procedure described in C.13.2 hereof, the Consultant Mechanical Engineer is to be furnished with a set of blackline paper prints of the 1:100 scale or equivalent general drawings, from which he will prepare his own drawings of the mechanical installation.

C.12 FIRE PROTECTION DRAWINGS

C.12.1 Planning requirements

The basic requirements affecting planning and construction have already been determined at the design stage, as described in B.11 hereof.

C.12.2 Installation and equipment

Equipment must comply with the National Building Regulations and to approval of the Local Authority.

C.12.3 Drawings required

You must show equipment such as fire extinguishers and hose-reels and the water supply for the latter on your drawings, usually on the drainage drawings (A series).

C.13 WORKING DRAWINGS SUBMISSION PROCEDURE

C.13.1 Preliminary submission of working drawings

When you have completed your 1:100 scale drawings and relevant details in all respects which may affect the other disciplines, issue the necessary prints to the Consultants, to ensure concurrent preparation of service layouts and the finishing of information to enable you to finalise your drawings and to prepare the co-ordination drawings.

Note: During the documentation stage you must issue drawings and co-ordinate the timeous exchange of information between all members of the Professional Team to ensure the concurrent completion of all documentation for tender purposes. Please notify the Project Manager as soon as drawings have been issued to Consultants.

C.13.2 Final submission of working drawings

C.13.2.1 When you have completed the full set of working drawings, submit one set of blackline paper prints to the Project Manager. Issue one complete set to the Quantity Surveyor and advise the Project Manager when this has been done.

C.13.2.2 During preparation of the Bills of Quantities, a set of prints will be marked up by the Quantity Surveyor.

Important note: This marked up set is a vital record and you must ensure that these drawings are returned to the Quantity Surveyor after co-ordination with your drawings.

C.13.2.3 Your original drawings are to be retained in your possession and all variations are to be carried out on them.

D. SPECIFICATION

D.1 BILLS OF QUANTITIES

D.1.1 General policy

It is the general policy of the Department to employ Bills of Quantities for major works services and not to write a separate specification.

D.1.2 Departmental standard specification

All descriptions of material and workmanship, whether for Bills of Quantities or written into specifications, are to conform to the Standard Specification PW 371.

D.1.3 Information required

D.1.3.1 The principal information required by the Quantity Surveyor for the preparation of Bills of Quantities is to be supplied in the form of your working drawings, fully detailed and comprehensively annotated with particulars of all component parts of the building(s), materials and finishes and their methods of application, joining and fixing, together with complete schedules, all as described in Chapter C hereof and specifically as instructed in C.1.10.1.

D.1.3.2 The following type of information must be supplied, unless fully annotated on the site plan, in respect site works such as:

Trees to be removed, specifying species, diameter and height;
buildings to be demolished, specifying size, short description of materials of which they are built, thickness of concrete paving, floor finishes, reinforcement if any, etc.

D.1.3.3 As indicated in C.1.10 en C.4.1 hereof the documentation should include particulars of sanitary fittings, towel rails, mirrors and the like. If it is not convenient to detail or schedule these fully in the documentation, they may alternatively be furnished to the Quantity Surveyor in the form of lists.

D.1.3.4 Your attention is also drawn to C.3.1 hereof in respect of the use of proprietary articles. Where these are approved by the Department for inclusion in the project, you must furnish the Quantity Surveyor with manufacturers' trade pamphlets on which your details are based, together with your notes of any modification which you may require of the manufacturer's standard specification with due regard to economy, and any other special descriptive notes which you require to be incorporated in the Bills of Quantities.

D.2 SEPARATE SPECIFICATIONS

D.2.1 Method of procedure

When a specification is required, you must do so according to departmental methods of writing specifications.

D.2.2 Where a specification is required

D.2.2.1 Usually for projects involving additions and/or alterations to an existing building and lump sum contracts.

D.2.2.2 For new projects only where specifically instructed by the Department.

D.2.3 Type specification

For projects where you are required to write a specification you must conform to Departmental practice. To assist you in this respect you may request your Project Manager to be issued with Standard Specification PW 371 and with copies of other specifications which may assist you in preparing a specification for your project.

D.2.4 General requirements

D.2.4.1 Dissimilar buildings specified separately/

Where the project comprises dissimilar buildings, specify each building separately.

D.2.4.2 Departmental name board

Include a description of the departmental name board. The Project Manager will furnish you with this information on request. (Type number GEN 063).

D.2.4.3 Standard Specifications

Wherever applicable specification items are to comply with the relevant SABS Specification/s or Code of Practice. Also quote the relevant codes in the Specification.

D.2.4.4 Use of trade names

Use only general descriptive terms (usually performance based) as far as possible, but if any item cannot be properly described except by its trade name, add the words "or equal approved" by the Department. Refer to C.3.1 hereof.

D.2.4.5 Technical terms

All technical terms used must be as given in the Bouwoordeboek/Building Dictionary published by the "SA Akademie vir Wetenskap en Kuns", Pretoria.

D.2.4.6 List of contract drawings

List at the beginning of the specification the contract drawings, viz.: Site plan, scale 1 :500 or 1 :200.
General working drawings, scale 1 :1 00 or equivalent.

D.2.4.7 Architect's name and address

At the bottom of the page carrying the list of contract drawings put your firm's name and address.

D.2.4.8 Prime cost and provisional sums

D.2.4.8.1 All materials and components must be fully described and no sums included except for the following:

- (a) Republic coats of arms for Magistrates' Courts. :
- (b) Police badges.
- (c) Cell locks and keys for Prisons, Police Stations and Public offices.

The amounts to be included will be provided by the Quantity Surveyer.

D.2.4.8.2 Include Provisional Sums for connections to main sewer, stormwater drain, water main, fire service main and any other main service. Obtain the costs from the Local Authority or, where the services are provided by the Department on an existing Government site, from the Regional Manager's Office.

D.2.4.9 Order of procedure of contract

D.2.4.9.1 If at all possible, the project should be planned in such a way as to avoid the necessity for special conditions of contract requiring completion in stages, e.g. demolition's, alterations and additions, or beneficial occupation, except in the case of housing.

D.2.4.9.2 Where it is not possible to avoid the work being carried out in stages, the order of work must be carefully considered to minimise disruption of the continuity of the contract, and the stages of work must be clearly described in the specification in the of Bills of Quantities.

D.2.4.9.3 Confer with the departmental Regional Manager as to the requirements of accommodating the occupants of buildings to be demolished or altered in other premises, and the procedure of work necessitated thereby. In case of doubt consult the Project Manager.

D.3 DESCRIPTION OF WORK

D.3.1 Works on site

Using the site information obtained in paragraph A.7.4 hereof, specify in detail the (previously authorised) demolition of existing buildings, removal of trees, etc. Also specify what items (if any) from the demolitions are to be handed over to the Department, and what items become the property of the Tenderer (for which he may allow a credit).

D.3.2 Drainage and water supply

Specify all drainage work, water supply and fire service. Refer to C.7 and C.12 hereof.

D.3.3 Electricity service

Specify all work to be done by the builder in this connection, e.g. chases for conduits, recesses for distribution boards, etc. Typical descriptions are to be found in 5.32 and 5.33 of the Standard Specification.

D.3.4 Materials, components and finishes

See C.3 hereof.

D.3.5 Ironmongery

D.3.5.1 See C.3.10 hereof.

D.3.5.2 Give general directions such as material, finish, whether locks are "ensuite" or not, and master keying and state that doors, etc., are to be fitted with ironmongery as indicated on the schedule.

D.3.6 Alternative tenders

D.3.6.1 Where expensive or specialised materials or components are specified it is the Department's practice to prepare supplementary Bills of Quantities and to invite contractors to submit tenders for alternatives.

D.3.6.2 Such items may include face bricks, granite, marble, quartzite, demountable partitions, aluminum windows, copper roofing, etc.

D.3.6.3 In such cases alternative choices for such articles specified shall also be listed in the Specification.

E. CONTRACT ADMINISTRATION AND INSPECTION

E.1 CONTROL BY THE ARCHITECT AS PRINCIPAL AGENT

E.1.1 Functions of the Principal Agent

E.1.1.1 As Principal Agent of the Department you are charged with the administration and financial control of The building contract, Also the interpretation to the Contractor of the intent of the design and documentation. You will also be responsible for the quality control of workmanship and materials

E.1.2.2 Your functions as Principal Agent in respect of the administration of the contract and inspection of the Works are laid down in detail I the following paragraphs:

E.1.2 Tendering Procedure

Calling for and acceptance of tenders is a function of the Department; you may, however, be called upon to report on the tenders received.

E.1.3 Administration of the contract

In order to administer the contract efficiently, you are required to acquaint yourself thoroughly with the Departmental Conditions of Contract (PW 677)and to ensure that the consultant team do likewise. Your attention is drawn to the fact that there are differences between the departmental Conditions of Contract (PW 677) and the JBCC 2000 Contract, generally issued by the institute of South African Architects.

Your attention is drawn to the fact that, in terms of the contract, certain functions are reserved for the Director-General, such functions comprising:

nomination of Sub-contractors - Clause 16 (1);
extension of the contract period - Clause 20 (4);
various actions should the Contractor be in default - Clause 24.

E.2 HANDING OVER OF THE SITE

It shall be the prerogative of the Project Manager, on behalf of the Director-General, to conduct the handing-over-of-site meeting and he will be responsible for taking and issuing the minutes of this meeting only. You will be advised by the Project Manager of the time and date of the meeting and your attendance there will be required. Subsequent meetings shall be chaired by you and the taking and distribution of minutes thereof shall be your responsibility, all as described in E.10 hereof.

E.3 ONSTRUCTION PROGRAM AND PROGRESS REPORTING

E.3.1 Program to be submitted by the Contractor

The Contractor is required, immediately upon the site being handed over to him, to prepare and submit to you a detailed construction program, taking into account al trades and specialist services and aspects of the works and allowing for any procedure requirements contained in the preliminaries of the Bills of Quantities. The program must contain adequate information to enable monitoring of progress and to enable claims for delays and extension of the contract period to be assessed realistically. When you are satisfied that the program is adequate you must submit a copy to the departmental Project Manager and advise him/her of any subsequent amendments. The Contractor must amend the program regularly as required but still within the original or extended contract period.

E.3.2 Progress in relation to the program and reports thereon

E.3.2.1 As Principal Agent you must monitor the progress of the contract continuously against the approved program. The performance or non-performance by the Contractor in relation to the program and reference thereto in warnings will be important if any action against the Contractor becomes necessary at a later stage.

E.3.2.2 You must report continuously and realistically on progress of the work of all disciplines in the minutes of site meetings and submit additional reports to the Project Manager if this becomes necessary.

- E.3.2.3** You must manage the contract strictly in accordance with the Conditions of Contract (PW 677) .
- E.3.2.4** If any delay in the progress of the work occurs, or the Contractor reports circumstances in which a delay is foreseen, you must ascertain the cause of the delay and minute at the next site meeting what steps and by whom are to be taken, to rectify matters.
- E.3.2.5** If the delay is due to failure in the supply of necessary drawings or instructions to the Contractor you must immediately rectify the matter. If you are unable to do so yourself, eg. due to delay on the part of other Consultants, you must instruct them in writing to rectify the matter immediately and send copies of your instructions to the Project Manager.
- E.3.2.6** If the delay is due to any other cause outside the control of the Contractor, such as changes in the requirements of this Department or the User Department, or to organised work stoppages by any workmen not due to any action on the part of the Contractor, you must remind the Contractor of the procedure which he should follow in terms of sub-clause 20 (4) of the Conditions of Contract relating to extension of the contract period and yourself proceed in terms of E.4 hereof.
- E.3.2.7** If you are satisfied that the delay is due to default by the contractor you must take action by timeously warning the Contractor in writing (with reference to clause 24 and 20 (6)) as soon as any of the following situations arise:
 - E.3.2.7.1** Progress is unsatisfactory.
 - E.3.2.7.2** No work is being done.
 - E.3.2.7.3** No workmen on site.
 - E.3.2.7.4** Quality is unsatisfactory (rectifying this can cause delays).
 - E.3.2.7.5** Written instructions are not complied with.
 - E.3.2.7.6** Expenditure falls behind (when compared with the expected cash flow).

Copies of these letters must be sent to the Project Manager and the Guarantor (if the contractor provided a guarantee).

- E.3.2.8** If, after a second serious warning, the unsatisfactory progress or quality continues and deteriorates to the extent that it appears desirable to cancel the contract the following procedure must be followed:
 - E.3.2.8.1** As Principal Agent you must issue a written warning to the Contractor, refer to the applicable clause(s) and draw his attention to the provisions of clause 24 of the Conditions of Contract (PW 677).
 - E.3.2.8.2** If no improvement occurs or no satisfactory undertaking is received from the Contractor within 14 days then the Deputy Director-General: Accommodation of the Department may send a Notice of Cancellation of the contract by the Department to the Contractor in terms of clause 24.

E.4 CLAIMS FOR EXTENSION OF THE CONTRACT PERIOD

- E.4.1** All claims for extension of the contract period must be dealt with continuously during the contract: Decisions must not be delayed until the end of the contract even though this is allowed in terms of clause 20 (5).
- E.4.2** Within 14 days after receiving a claim for extension of the contract period from the Contractor you as Principal Agent must investigate the claim and submit it with your complete motivation and recommendation to the Project Manager.

The recommendations must contain the following information in respect of every claim:

- E.4.2.1** Number of claim.
- E.4.2.2** Date of event.

- E.4.2.3 Period claimed.
- E.4.2.4 Date on which claim was made.
- E.4.2.5 Reasons given by Contractor.
- E.4.2.6 Concise but complete evaluation of claim looking especially at timeous claim in terms of contract, comparison with contractor's program, concurrent actions, etc.
- E.4.2.7 Recommendation in respect of extension, condonation and application of penalties.
- E.4.3 The Project Manager will examine the recommendation within 14 days.
- E.4.4 The Project Manager will make a recommendation to the authorative person with the required delegated powers for a decision whereafter the Contractor will be informed in writing by the Project Manager. The letter from the Department to the Contractor will explain the extension granted or refused. Copies of this letter will be sent to the Principal Agent who in turn must inform the Professional Team.

One copy of the letter will be endorsed by the Project Manager to the officer responsible for recording the approved extended contract completion date on the Works Control System (WCS) or do the capturing him/herself.

E.5 NOTICE OF DELAYS AND CLAIMS FOR COMPENSATION AND EXTENSION OF THE CONTRACT

- E.5.1 Such notices and claims must be brought to the attention of the Project Manager immediately with notification of the steps being taken to avoid or end the delay.
- E.5.2 The claims for extension can be dealt with as set out in E.4.
- E.5.3 The claims for compensation for delays must be submitted with the Principal Agent's comments to the Project Manager who will give a ruling in the matter.
- E.5.4 In the case of a claim for compensation on purely engineering services the Principal Agent must forward such claim with the recommendation of the applicable Consultant Engineer's comment/recommendation, to the Project Manager who will rule on the matter.

E.6 ISSUE OF DRAWINGS

E.6.1 By the Project Manager

The Project Manager, in collaboration with the Professional Team, will furnish the Contractor with three copies of your own and all Consultants' drawings and other documentation at the handing-over-of-site meeting.

E.6.2 By the Private Architect

Thereafter you must provide the Contractor with three copies of all supplementary or Variation Order drawings and documents which may be required to be issued during the progress of the contract. You must keep a complete record of all such issues and obtain the Contractor's signature for receipt thereof.

E.7 INSPECTION

E.7.1 Responsibility for inspection

You are required to provide full inspection services to ensure that the Works conforms to the provisions of the contract. Supervision of engineering matters in a building service is the responsibility of the relevant Engineering Consultants, who will advise you of all instructions which require to be given by you in connection with their work, but you must ensure that the co-ordinated installation drawings are complied with and that the Contractor and Sub-contractors, nominated or direct, comply with the construction program.

E.7.2 Site inspections

Throughout the progress of the contract you are required to make such periodic visits to the Works as are necessary to determine that the work is proceeding in accordance with the requirements of the contract and implied intent of the design and documentation.

E.7.3 Quality control

E.7.3.1 You are responsible for exercising and correlating quality control of all workmanship, materials, components and finishes.

E.7.3.2 Concrete test cubes are to be made and cured by the Contractor under supervision of the Structural Consultant.

E.7.4 Clerk of Works

Where in the opinion of the Department the size or complexity of the project requires that you be assisted in the provision of quality control, the Department, either at your request or on its own initiative, may allow for the appointment of a Clerk of Works for day to day supervision under your control. You will be reimbursed for the services of the Clerk of Works, on a rate to be agreed. Any request which you may make for such assistance must be fully motivated and submitted in writing to the Project Manager.

E.7.5 Duties generally

You are required to perform all the duties normal to the practice of your profession and to give advice on any matter connected with the Works which the Department may require.

E.7.6 Nominated Sub-contractors

E.7.6.1 In the normal course, Consulting Engineers will be responsible for the day to day supervision and quality control of engineering matters on building works which are executed by the Main or Sub-contractors, but you as Principal Agent will be responsible for all instructions to be given to the Main Contractor in this regard.

E.7.6.2 If you consider the circumstances to be such that it is essential that Consulting Engineers or other Specialists be appointed, you must submit full and detailed written motivation for such appointments to be made to the Project Manager.

E.7.7 Comprehensive Projects

In comprehensive contracts where engineering works are included in the main contract, the responsibilities will be the same as for nominated sub-contracts.

E.7.8 Separate contracts

In cases where the Department has entered directly into separate contracts for engineering services, the relevant Consultants, will be responsible for all supervision of these services, but they will work in close consultation with you. You will be responsible for all supervision of separate contracts in so far as they form an integral part of the building project. Refer to E.8.1.3 hereof.

E.7.9 Co-ordination of all engineering services

Whatever form of contract is entered into for such services you must ensure that the Contractor complies with the requirements of your co-ordination drawings in all respects such as maximum sizes and exact positions of services and fittings.

E.8 DECISIONS AND INSTRUCTIONS ON SITE

E.8.1 Instructions to Contractors

- E.8.1.1** Instructions on site may only be given to the Contractor, his foreman or other person specifically nominated in writing by the Contractor for the purpose, by you as Principal Agent or your official nominee.
- E.8.1.2** In all cases where you are co-ordinating engineering services, either comprehensive or where nominated Sub-contractors are involved, the relevant Consultants are authorised to draw the attention of the Sub-contractor to matters affecting the quality of the work. In all instances you must issue instructions to the Main Contractor in writing.
- E.8.1.3** The same conditions apply in the case of direct contracts between the Department and a separate Contractor, provided that you are the Principal Agent in respect of that separate contract and are accordingly co-ordinating the work; but in all cases only to the extent that such Works form an integral part of the building project. Such items as may be excluded from the building project, and in which therefore you are not involved in co-ordination, supervision or administration, will be determined by the Department on each individual service.
- E.8.1.4** If the Contractor or a Sub-contractor should carry out any work without prior authorisation, the said Contractor or Sub-contractor will be responsible for restitution and making good of such work, if required, at their own expense. They will also be responsible for the reimbursement of any fruitless expenditure incurred by any other Contractor or of any professional Consultant as a consequence of either the original unauthorized work or of its restitution. However, in order to avoid delays and possible litigation over such matters, you are required at all times to maintain a close watch on the execution of the contract to ensure that no departure is made from the work as designed and documented. Changes are to be authorized by the issue of an appropriate instruction or Variation Order in accordance with the procedure described in Chapter F hereof.

E.8.2 Decisions on matters arising on site

- E.8.2.1** You will deal with all minor matters arising on the Site. In the case of engineering services this must be done in co-operation with the relevant Consultant.
- E.8.2.2** If any major points arise on Site which require decisions in principle, you must apply in writing to the Project Manager for a ruling.
- E.8.2.3** All changes affecting the contract must be made by Variation Order in accordance with the procedure laid down in the following Chapter, F: Variations.

E.8.3 Requests made by Client Departments

Requests from representatives of a Client Department for changes in the accommodation must be made officially in writing by the Head Office of that Department to the Director-General. Requests of a minor nature on Site which do not involve delays or additional expenditure may, however, be dealt with by you in terms of paragraph F.4 hereof.

E.9 FUNCTIONS CONCERNING THE DEPARTMENTAL REGIONAL REPRESENTATIVE

E.9.1 The Project Manager as Client

- E.9.1.1** The departmental Project Manager is the authorised representative of the Director-General and as such controls all funds for building contracts.
- E.9.1.2** He/she will guide you on the quality of workmanship and materials acceptable to the Department. He/she will further assist with the appointment of Engineer(s) on engineering services where no Consulting Engineer has been appointed for supervision.
- E.9.1.3** The Project Manager must be invited to attend all formal site meetings on behalf of the Department and may attend personally or appoint a member of his staff to do so.

E.9.2 Payment of certificates

The Departmental Regional Manager's Office will arrange for the payment of all progress payment certificates which you will issue to the Contractor based on information provided by the Consultant Quantity Surveyor or determined by yourself if no Consultant Quantity Surveyor has been appointed, and with the relevant Consultant Engineer, if appointed. A standard original Progress Payment form (PW 156) of the Department is to be used for certifying payments, an example of which is attached hereto (Annexure J). No copies are allowed. You will be notified by the Department of any extension of time which has been authorised. You must deduct the penalties laid down under sub-clauses 24 (2) (a) and 24 (3) (a) of the Conditions of Contract from all certificates issued subsequent to the expire of the contract period or authorised extension thereof.

E.9.3 Budget reporting

E.9.3.1 The Department's financial year runs from 1 April to 31 March of the following year.

E.9.3.2 As soon as possible after commencement of the contract, the Consultant Quantity Surveyor, in consultation with yourself and the Contractor and based on the latter's construction progress chart, will prepare a Contract Status Report (PRM 036). This report includes the estimated final cost, annual cash flows, values of fees, anticipated and approved Variation Orders, etc. Thereafter, updated reports are to be submitted at monthly intervals to the Project Manager. The Contract Status Report proforma is available from the Project Manager.

E.9.3.3 For the purpose of these reports, allowance for Contract Price Adjustments (escalation) and Variation Orders must be included in the monthly reports and adjusted regularly.

E.9.3.4 The statement of the estimated annual expenditure will also include the work of all nominated Sub-contractors or direct contracts for engineering and specialist services. The relevant Consulting Engineers or Specialists will prepare estimates of expenditure for their respective services and forward same to the Consultant Quantity Surveyor.

E.9.3.5 The Consultant Quantity Surveyor will submit the monthly Contract Status Report to you as Principal Agent for forwarding to the Project Manager.

E.9.3.6 The actual progress made by Contractors and Sub-contractors will be monitored monthly and the Consultant Quantity Surveyor will update the estimated expenditure for the remaining portion of the work accordingly.

E.9.4 Distribution of Variation Orders

You must supply copies of all Variation Orders, including drawings, as issued to the Contractor, to the Project Manager and the Consultant Quantity Surveyor for record purposes. Where specialist contracts are involved you must also supply copies to the relevant Consultant. Note that copies of Variation Orders supplied to the Contractor should be un-priced.

E.9.5 Visits of departmental officials to the Site

E.9.5.1 The Project Manager or his appointee shall have the right to visit the Site at all reasonable times.

E.9.5.2 Similarly an appointee of the Director-General shall have access to the Site at all reasonable times.

E.10 SITE MEETINGS

E.10.1 Arrangement of site meetings

The person acting as Principal Agent on Site must be a principal or partner in your firm. He shall convene site meetings and act as chairman. He must keep proper minutes, of which one copy must be furnished to the Project Manager and one copy each to all the other firms or persons concerned.

E.10.2 Attendance at site meetings

Those represented at site meetings besides the Principal Agent shall be other professional Consultants, the Contractor, Sub-contractor and separate specialist Contractors and the Department's Project Manager as he/she may decide, together with any others concerned with the work at the discretion of the Chair person or the Department. Due notice must be given to all who will attend.

E.10.3 Frequency of meetings

Initially site meetings shall be held as required, but at inter/intervals of not more than 14 days. If the contract proceeds satisfactorily the period may be increased at your discretion, but an official site meeting must be held at least once a month. Minutes of site meetings must be available at least one week before the date of the next meeting. If progress on site is unsatisfactory revert back to site meetings at 14 day intervals.

E.10.4 Form of minutes

The following is a list of the main items which are required to form the agenda of and be recorded in the minutes of all site meetings:

- (i) Official title of the service.
- (ii) Departmental Head Office file number, Regional Office file number and WCS number in the top right hand corner.
- (iii) Heading giving the date, time and number of the meeting.
- (iv) Below the heading, the date of acceptance of tender, contract period, contractual completion date, extended completion date, expected completion date, contract amount per day, penalties deducted to date and projected penalties.
- (v) List of persons present and whom they represent, with apologies for absence.
- (vi) Approval of minutes of the previous meeting.
- (vii) Matters arising from the minutes of the previous meeting.
- (viii) Progress of the work in comparison with the progress chart, stating percentage completed and whether progress is satisfactory or not. List of labour and plant on site. Deadlines for specialist services.
- (ix) Consulting Engineers' progress reports, where relevant.
- (x) A statement as to whether the foundation re-measurement drawings have been completed and submitted to the Consultant Quantity Surveyor and whether the costs involved have been established. A list of all other re-measurable items must be given with progress thereon.
- (xi) Delays and factors which are causing them, stating steps which are being taken to rectify the position.
- (xii) Record of inclement weather and influence thereof.
- (xiii) A list of unsatisfactory work to be rectified by the Contractor.
- (xiv) Information, drawings or Variation Orders required by the Contractor.
- (xv) Drawings issued since the previous meeting.
- (xvi) Site instructions issued since the previous meeting.
- (xvii) A full description of all Variation Orders issued since the last meeting, together with the numbers of all previous Variation Orders issued.
- (xviii) Discussions which have taken place since the previous meeting, recording any decisions and by whom they were taken.
- (xix) General.
- (xx) Date and time of the next meeting.
- (xxi) Particulars of how copies of the minutes of the meeting are distributed.
- (xxii) Signature of the chairman and date.

E.10.5 Procedure for the preparation of minutes

The following procedures must be strictly observed in keeping site minutes:

E.10.5.1 Minutes are to be kept in exact accordance with the items listed in E. 10.4 hereof.

E.10.5.2 Every item, with its relevant subheading, must be included in all minutes. If an item has already been dealt with, this must be stated giving the date of the minutes when the action was recorded. Where

matters have not been fully dealt with, the relevant item must contain sufficient information to obviate the necessity of referring back to previous minutes.

E.10.5.3 Where any item in the minutes calls for further action to be taken, e.g. queries to be dealt with, information to be furnished or work to be executed, the name of the person who is to deal with the matter must be recorded alongside the item concerned, in an action column in the right hand margin of the minutes.

E.10.6 Information required to maintain progress

At each site meeting the Chairman must ascertain from the Contractor whether he requires any drawings, information or decisions to ensure the maintenance of progress of the contract and to obviate delay. The Contractor's reply and, where appropriate, the names of persons who are to take the requisite action must be recorded in the minutes.

E.10.7 Recording of Variation Orders

Variation Orders required to be issued during construction must be notified at site meetings and recorded in the minutes, stating whether:

E.10.7.1 They are of a minor nature, for which no drawings are required, and will be covered by a written Variation Order issued directly by yourself as Principal Agent, or

E.10.7.2 a Variation Order drawing is required, in which case you must prepare a preliminary drawing and estimate and submit for approval in accordance with procedures described in the following Chapter F, and

E.10.7.3 a Variation Order including engineering services is involved, whether as a comprehensive service or where Sub-contractors are nominated, in which cases the estimates of all professional disciplines concerned must be submitted together with all relevant drawings and documents.

E.11 PRINTING COSTS DURING CONTRACT STAGE

E.11.1 Certificates and Variation Orders

For Payment Certificates and Variation Orders you must use the Department's standard forms which will be issued to you. The cost of duplicating Payment Certificates and Variation Orders can be claimed from the Department.

E.11.2 Minutes of site meetings

The costs of producing, printing and duplicating minutes of site meetings can be claimed from the Department. All other costs of paper work required for the administration of the contract and supervision of the works, will be for your account.

E.11.3 Printing of drawings

Records are to be kept of all costs of printing drawings required on site, keeping separate, lists of each professional discipline, and submit detailed accounts to the Project Manager for reimbursement in accordance with your letter of appointment and the other Consultants' agreements.

E.12 FOUNDATION REMEASUREMENT DRAWINGS

E.12.1 Preparation of drawings

You are responsible for the preparation of accurate as-built drawings on plan and detail section of all foundations for the purpose of re-measurement by the Consultant Quantity Surveyor.

E.12.2 Submission of drawings

You are required to submit the necessary copies to the Consultant Quantity Surveyor for the purpose of re-measurement and to provide the Project Manager with a set of paper prints.

E.13 APPROPRIATION (AS-BUILT) DRAWINGS

E.13.1 Drawings required

You are required, within three months after first delivery, to furnish the Project Manager with a set of as-built drawings in the form of polyester transparent prints of the site plan and 1 :1 00 scale or equivalent drawings and all service layouts and blackline paper prints of the rest brought up to date to show the work as built at your own cost. Alternatively you may hand in your original transparent set of working drawings brought up to date to show the work as built. Drawings must be correct and clearly marked or stamped with the words "As Built" and signed and dated.

Where relevant, you are to see that the correct quantity of operational and other manuals, etc. are to be handed to the Project Manager.

E14. FINAL DELIVERY

E14.1 Final delivery may not take place without compliance with E.13.

F.VARIATIONS

F.1 NEED FOR VARIATIONS

F.1.1 Good documentation limits variations

You are to ensure that your working drawings are correct and complete in every detail thereby avoiding the need for an excessive number of unnecessary Variation Orders.

F.2 TIMEOUS ISSUE OF INSTRUCTIONS

Timeous issue of instructions will prevent delay claims and it is therefore of great importance that you issue site instructions as quickly as possible and follow up with formal Variation Orders where necessary.

The introduction of instructions which are late in relation to the critical path of the Main Contractor's program and especially towards the end of the building contract may cause serious delays and justifiable claims for delays by the Contractor. The late introduction of variations, particularly extras, may prevent the Main Contractor from carrying out extra work concurrently with other work already included in the contract.

F.3 GENERAL PROCEDURE FOR VARIATIONS

F.3.1 Responsibility for issuing Variation Orders

As Principal Agent you are responsible for the issue of all Variation Orders in respect of the building and specialist contracts or sub-contracts.

F.3.2 Method of issuing Variation Orders

F.3.2.1 All Variation Orders are to be issued on the standard forms obtainable from the Project Manager. (Refer also to F.13).

F.3.2.2 Many variations also require the amendment of drawings and/or issue of supplementary drawings. For procedure see F. 10 and F. 12 hereof.

F.3.2.3 In the case of engineering Variation Orders the Consultant Engineer can prepare the Variation Order and motivation therefor and the Principal Agent can then issue the Variation Order.

F.3.2.4 Only the Principal Agent is authorised to give instructions to the Contractor.

F.3.2.5 **Note:** A written site instruction forms a legal instruction in terms of the contract irrespective of whether it is followed by a formal Variation Order or not. It is important that all Variation Orders be valued continuously.

F.4 OCCURRENCE OF VARIATIONS

Variations fall into five main categories, viz.-

- (a) changes required before the contract is signed;
- (b) those of a minor nature, mainly arising from the documentation;
- (c) those of a major nature, requiring departmental authorization;
- (d) those to be carried out on the instructions of the Department; and
- (e) those arising from alterations to Client Department requirements.

F.5 CHANGES TO DRAWINGS BEFORE THE CONTRACT IS SIGNED

F.5.1 Alternative methods

After completion of the working drawings, during or after preparation of the Bills of Quantities but before a contract has been signed, you will be instructed whether-

F.5.1.1 to amend the drawings; or

F.5.1.2 to prepare a Variation Order drawing or drawings in the manner described in F.10 hereof and return it to the Project Manager.

F.5.2 Amendment of drawings

Where you are instructed to amend drawings, the date and particulars of amendments are to be annotated as for Variation Order drawings, as described in F.12.2.1 to F.12.2.3 hereof, in the right hand panel above the title block, but in this case starting from the bottom.

F.6 VARIATIONS DURING CONTRACT OF A MINOR NATURE

F.6.1 Authority to issue Variation Orders

As Principal Agent you may, without prior departmental authorization, of your own accord or at the instigation of other Consultants, issue Variation Orders of a minor nature, mainly those arising from the documentation, in any of the circumstances detailed below.

F.6.2 Causes of such Variation Orders

Variations of a minor nature can result from -

F.6.2.1 Unforeseen site conditions, except those where substantial additional cost is involved e.g. in special foundations, approval must first be obtained from the Project Manager;

F.6.2.2 Co-ordination of documentation;

F.6.2.3 A need for substitution of materials, components or finishes, either because the items specified are no longer available, or because through interim experience they have been found unsatisfactory or less suitable for the specific application;

F.6.2.4 Instructions required to avoid delay of the Works; or

F.6.2.5 Instructions required to ensure the safety of the Works.

Note: The Principal Agent must inform the Project Manager immediately after giving instructions mentioned above.

F.6.3 Effecting minor changes

Variation Orders may be issued to effect minor changes, provided that-

F.6.3.1 The functioning of the building is thereby improved; and

F.6.3.2 Any additional contingency sum. cost can be covered by savings elsewhere.

F.7 VARIATIONS REQUIRING NO DRAWINGS

F.7.1 Use of standard form

Where no drawings are required, issue the Variation Order on the standard form as described in F. 1 S: hereof.

F.7.2. Approval for major variations

If a Variation Order is of a major nature, first obtain approval in principle as described in F.8 hereof.

F.8 PROCEDURE FOR OBTAINING APPROVAL IN PRINCIPLE FOR MAJOR VARIATIONS

F.8.1 Obtaining prior approval

In case you require to issue Variation Orders which -

- F.8.1.1** fall into any of the foregoing categories but insufficient funds are available; and/or
- F.8.1.2** involve substantial replanning; major or basic changes to the design; additions to and/or major substitutions of materials, components or finishes; fruitless expenditure; legal implications or deviations from the conditions of contract;

you must obtain prior approval in principle from the Project Manager.

F.8.2 Particulars required for approval

For the purpose of obtaining such approval you must submit full particulars of the proposed Variation Order including-

- F.8.2.1** Motivation;
- F.8.2.2** Estimated cost;
- F.8.2.3** An assessment of any fruitless expenditure; and
- F.8.2.4** A financial report detailing the funds position for all contracts, in order that the Project Manager may give consideration to the overall financial position of the contract and any possible effect on the contract period.

F.9 FINANCIAL CONTROL

F.9.1 Strict expenditure control

Since the Department is required to plan and execute its building program within fixed budget amounts, strict control over expenditure on variations has to be exercised so that-

- F.9.1.1** Cost limits of the project as stipulated by the Department and/or the Treasury Committee for Building Norms and Cost Limits are not exceeded;
- F.9.1.2** Applications for adjustment in cost provision are kept to a minimum;
- F.9.1.3** Fruitless expenditure and claims from Contractors are avoided;
- F.9.1.4** The Department is not faced with ex post facto applications for additional funds for the completion of the service.

F.9.2 Consideration of financial implications

To this end estimates of the cost of proposed Variation Orders must be obtained from the appropriate Consultant(s) and the financial implications considered before the work involved in the Variation Order is put in hand.

F.10 IMPLEMENTATION OF MAJOR VARIATIONS REQUIRING THAT DRAWINGS BE PREPARED

F.10.1 Procedures to be followed

When variations as in F.8 hereof are proposed by you and the approval of the Department has been obtained, follow one of the following procedures:

F.10.1.1 Before the contract is signed

- (a) As alterations cannot be shown on contract drawings, make polyester negative prints from which contract drawings are taken;
- (b) Prepare the Variation Order on the original drawing(s) in accordance with the procedure in F.12 hereof.

F.10.1.2 After the contract is signed

All variations on drawings issued for contract purposes are to be carried out on the original drawings in your possession.

F.10.2 Estimate of cost

F.10.2.1 In all cases first prepare draft drawings, in consultation with all Consultants as may be necessary, and pass to the Consultant Quantity Surveyor for an estimate of cost. You must ensure that any separate engineers' drawings required for this exercise also accompany your drawings.

F.10.2.2 Submit the draft drawings and estimates to the Project Manager for formal approval.

F.10.3 Preparation of Variation Order drawings

If the variation is approved, proceed to prepare the Variation Order drawings as prescribed in F.12 hereof, on the original drawings in your possession.

F.10.4 Electrical and mechanical work

In cases where electrical and/or mechanical work is carried out under separate contracts, furnish full particulars of the variation to the Engineers responsible.

F.10.5 Issuing of prints

Supply the Project Manager with transparent polyester prints of the 1:100 or equivalent scale Variation Order drawings and transparent detail 60/65 g/m² paper prints of all VOX and VOD drawings involved (refer to F.12 hereof) for addition to the master set.

F.11 VARIATIONS ARISING FROM CLIENT DEPARTMENT REQUIREMENTS

F.11.1 Processing of applications for variations

As laid down in E.8.3 hereof, applications for changes in the accommodation or other provisions of the service are not to be accepted from individual officers of the Client Department, except requests of a minor nature not involving additional expenditure, which can be dealt with in terms of F.6 hereof. In all other cases applications by Client Departments for variations must be made by their Head Offices in writing to the Director-General and may in no circumstances be processed until prior written approval in principle in terms of F.8 hereof has been given.

F.11.2 implementation of Client Department's requests for variations

Upon receipt of approval in principle, prepare the Variation Order in accordance with the same procedure as in F.10.2 hereof for formal authorization.

F.12 METHOD OF PREPARING VARIATION ORDER DRAWINGS

F.12.1 indication of Variation Order drawings

F.12.1.1 The key Variation Order drawing in all cases is to be the relevant 1:100 or equivalent scale floor plan. This is to have the suffix VO added after the original drawing number.

F.12.1.2 Any other original drawings affected by the variation are to have the suffix VOX added after the original drawing number.

F.12.1.3 If further variations are required on a drawing on which a variation has already been carried out, they are recorded on the same drawing and merely distinguished by date, entered consecutively in the right hand panel above the title block, as in F.12.2.1 hereof.

F.12.1.4 Where further amendment of a drawing for additional variations would render it illegible or difficult to interpret, prepare a new drawing with the original drawing number with the suffix VOD added. The original drawing must then have the suffix VOX added and must be issued together with the new VOD drawing.

Note: The use of this procedure should be kept to a minimum to avoid duplication of drawings.

- F.12.1.5** Where additional drawings, such as supplementary details, have to be prepared in order to depict variations, these are to be given new numbers in the sequence and to have the suffix VOD added. When such drawings are issued they must always be accompanied by the key Variation Order drawing together with any VOX drawings concerned.
- F.12.1.6** No work may be erased on any of the drawings (VO, VOX or VOD) constituting a Variation Order. Work omitted must be crossed out so as to leave the original work clearly visible.
- F.12.1.7** No numbers may be added to the suffix VO, since Variation Orders on the drawings will be distinguished from each other by date only.

F.12.2 Annotation of Variation Order drawings

Variation drawings are to be annotated in the following manner:

- F.12.2.1** On the key Variation Order drawing (always the 1:100 or equivalent scale plan) in the right hand panel above the title block starting from the top, write the following:
 - VO: Date
 - Omit: Describing each item of work involved.
 - Add: Describing each item of work involved.
- F.12.2.2** Where supplementary drawings are involved, add the note-
 - “See drawing(s)..... VOX and/or VOD”
- F.12.2.3** On every drawing involved make notes as in F.12.2.1 above, adjacent to each variation on the drawing, referring to that specific item only with an arrow.
- F.12.2.4** On all supplementary VOX and VOD drawings showing the variation of the same date, write at the top of the right hand panel as before-
 - “For VO dated see drawing No.VO”.

F.13 ISSUE OF VARIATION ORDERS

F.13.1 Variation Order forms

All Variation Orders are to be issued on the standard Variation Order forms (PW 778 (2)) obtainable from the Project Manager. They are to be numbered in order of date and, where drawings are involved, are to be written out to correspond with the wording of the annotation on the Variation Order drawing, as follows:

- VO: Number and date.
- Omit: Describing each item of work involved.
- Add: Describing each item of work involved.

Note: No costs are to be given on the original Variation Order issued to the Contractor.

F.13.2 Distribution of completed Variation Order forms

Copies of the Variation Orders issued to the Contractor(s) must be submitted to the Project Manager. In the case of specialist contracts, copies must also be submitted to the relative Consulting Engineer.

F.13.3 Additional information required with Variation Order forms

Copies of Variation Orders submitted to the Project Manager must be accompanied by a separate statement, Variation Order: Motivation (PW 778 (I)) This Standard form is available from the Project Manager and lists a brief motivation as well information on whether additional funds are required, fruitless expenditure, etc.

F.13.4 Forms and drawings to be issued together

Where drawings form part of the variation they are to be issued to the Contractor and Consultant Quantity Surveyor together with the site instruction or Variation Order form.

F.14 LATE VARIATION ORDERS

You must endeavor to finalize all variations before 80 % of the contract period has expired. You may not issue any Variation Orders after first delivery has been taken. Variation Orders issued after the original or extended contract period has expired (i.e. when the Contractor is in default) compromises the Department and should be avoided.

F.15 ISSUE OF MONTHLY FINANCIAL REPORTS

You must submit to the Project Manager, a monthly Contract Status Report prepared by the Consultant Quantity Surveyor reflecting the cost implications of all Variation Orders issued and the current total expenditure against the authorized total cost.

HANDING OVER OF COMPLETED SERVICE

G.1 HANDING OVER PROCEDURES

G.1.1 Taking first delivery

On completion of the work you must arrange with the Contractor and the Project Manager for a joint inspection of the works with their appointees. If you are satisfied that the works are complete in terms of clause 21 (1) of the contract you will advise the Contractor thereof in writing. This document is known as the First Delivery Certificate, and the date thereof is the date of commencement of the 3 month maintenance period.

G.1.2 Defects

Any defects which become evident after first delivery, remain the responsibility of the Contractor, who is to be informed that these must be rectified as and when they occur before final delivery will be taken.

Note: Should any latent defects become evident at any stage after first or final delivery it will be expected of you or the relevant Consultant to investigate the cause thereof and compile a report as part of this commission.

G.1.3 Contract Completion Report (PRM 043)

G.1.3.1 Immediately after taking first delivery you as Principal Agent must complete this form to be obtained from the Project Manager and send it to the Project Manager.

The form must reflect all approved extensions of the contract period and recommendations in respect of condonation.

Under "Work Performance of Contractor" you must mark any negative aspect which has been or should be reported to the STB concerning problems encountered, programming of work, quality of work and recommendation concerning grading of the Contractor.

G.1.3.2 The Project Manager will check the Contract Completion Report and submit it with his own recommendations to the Penalty Committee which decides finally on the application of penalties and condonation.

The Committee's decision is then made known to the Contractor, and Principal Agent.

G.1.4 Final Delivery

Final delivery shall be taken jointly by you and the Project Manager at the end of the maintenance period stipulated in the contract documents and subject to the successful compliance with your instructions regarding rectification of defective work. After a joint inspection by the parties concerned (See G.1.1) an acceptance of the premises, submitted in writing by the Project Manager on behalf of the Department shall be sent to you as Principal Agent. (See also E. 14)

G.1.5 Certificate of final delivery

On receipt of the written acceptance of the completed premises from the Project Manager, as described in paragraph G.1.4 hereof, you shall issue the Contractor a Certificate of Completion of the Works, which will entitle him to apply for final payment of all amounts due to him in terms of the contract.

ANNEXURE A

**MONTHLY PROGRESS REPORT FROM ARCHITECTS
PRM 014/2**

DEPARTMENT OF PUBLIC WORKS
MONTHLY PROGRESS REPORT FROM ARCHITECTS

For attention:

WCS NO: _____
REFERENCE NO: _____

1. Mr/Ms

Departmental Project Manager

2. Mr/Ms

Principal Agent

Report on progress for the month and year of

PROJECT:

1. SKETCH PLANS

- (a) Authorised to start on
- (b) Programmed completion date
- (c) Percentage of work completed to date
- (d) Outstanding information required by Architect to be listed here

- (e) Reasons for delay, if any

2. WORKING DRAWING AND SPECIFICATION

- (a) Authorised to start on
- (b) Programmed completion date for working drawings
- (c) Programmed completion date for specification
- (d) Percentage of work completed to date:
 - (i) 1:00 drawings = % X 15% of total =
 - (ii) Detail drawings = % X 50% of total =
 - (iii) Schedule of finishes = % X 5% of total =
 - (iv) Water, drainage, telephone
lay-out and co-ordinating
drawings, etc % X 30% of total =

TOTAL =====

(V) Specification

- (e) Outstanding information required by Architect to be listed here:

- (f) Reasons for delay, if any:

3. REMARKS

4. CONSULTANTS

Has information been passed to any Consultants and/or Quantity Surveyor?
(give dates)

SIGNATURE _____ **DATE:** _____
(Private Architect)

DEPARTMENT OF PUBLIC WORKS
MONTHLY PROGRESS REPORT FROM ARCHITECTS

For attention:

WCS NO: _____
REFERENCE NO: _____

- 1. **Mr/Ms.....** Departmental Project Manager
- 2. **Mr/Ms.....** Principal Agent

Report on progress for the month and year of

PROJECT:

1. SKETCH PLANS

- (a) Authorised to start on
- (b) Programmed completion date
- (c) Percentage of work completed to date
- (d) Outstanding information required by Architect to be listed here

- (e) Reasons for delay, if any

2. WORKING DRAWINGS AND SPECIFICATION

- (a) Authorised to start on
- (b) Programmed completion date for working drawings
- (c) Programmed completion date for specification
- (d) Percentage of work completed to date
 - (i) Drawings % X 15% of total =
 - (ii) Detail drawings % X 50% of total =
 - (iii) Schedule of finishes % X 5% of total =
 - (iv) Water drainage telephone lay-out and co-ordinating drawings % X 30% of total =

TOTAL _____
=====

- (v) Specification
- (e) Outstanding information required by architect to be listed here:
- (f) Reasons for delay, if any:

3. REMARKS

4. CONSULTANTS

Has been passed to any Consultants and or Quantity Surveyors? (give dates)

SIGNATURE: **DATE:**
(Private Architec

ANNEXURE B
REPORT ON PROPERTY
PRM 011

DEPARTMENT OF PUBLIC WORKS
REPORT ON PROPERTY

WCS NO: _____
REFERENCE: _____

PROJECT
MANAGER: _____

NOTE-

- i) Before completing this form, read the explanatory notes and instructions on the last page.
- ii) Complete the appropriate sections as requested please.

1. PROJECT NAME/SITE

- a) City/Town: _____
- b) Name: _____
- c) Address: _____

2. DETAILS OF PROPERTY

- a) Is the recommended site State/private-owned property? _____ Yes/No
 - b) If State-owned, is the proposed site situated within the boundaries of a larger area of State owned land? _____ Yes/No
 - c) Furnish the Title Deed description of the property:

 - d) Furnish the deed transfer number, if State-owned: _____
 - e) State how land was acquired by State (purchased, donated, exchanged, acquired under township conditions or unalienated State-owned land).

 - f) The property is not recommended for this service for the following reasons:

 - g) Give particulars of other available State-owned land, suitable for this service:

 - h) Full name of owner (in the case of privately-owned land)

 - i) Address of owner:

- Postal code _____ Tel no: _____

3. SIZE OF PROPERTY

- a) Give the boundary dimensions and area (in metres):

- b) Does the size correspond with the Surveyor-general's diagram? _____ Yes/No
- c) Have the survey beacons been located? _____ Yes/No
- d) Is a survey of resurvey required? _____ Yes/No
- e) In case of encroachments, furnish details:

4. VALUATION OF PROPERTY

- a) My valuation based on the market value of properties (in the case privately-owned land) in the vicinity is:
- | | | | |
|------|--------------------|---|-------|
| i) | Site | R | _____ |
| ii) | Buildings | R | _____ |
| iii) | Other improvements | R | _____ |
| | Total | R | _____ |
- b) Municipal valuation:
- | | | | |
|------|----------------------|----|-------|
| i) | Site | R | _____ |
| ii) | Buildings | R | _____ |
| iii) | Other improvements | R | _____ |
| iv) | Total | R | _____ |
| v) | Year when determined | 19 | _____ |

5. MINING RIGHTS

- a) If the site is situated on proclaimed mining land and held under surface right permit, give the number of surface right permit.

- b) Section of the Mining Rights Act, 19967 (Act 20 of 1967) as amended or Mining Titles Registration Act 1967 (Act 16 of 1967) as amended, under which it was granted.

- c) Purpose for which it was granted.

- d) Name of freehold title holder. Name of mining title holder.

- e) Mine rights according to Mineral Act 50 of 1991.

- | | | | |
|-----|--------------------------|------|--------------|
| i) | Prospector permit | iii) | Mine permit |
| ii) | Reclaiming authorisation | iv) | Mine licence |

6. RESTRICTIVE CONDITIONS

Do any servitude and/or restrictive conditions, which may interfere with the proposed use of the site, exist in the following (give details of the restriction):

- a) Title deed _____
- b) Township Establishment Conditions _____
- c) Local By-laws _____

- d) Local Town Planning Scheme
 - i) Zoning (residential, business etc.) _____
 - ii) Building-line restriction _____
 - iii) Height restriction _____
 - iv) Density _____
 - v) Coverage _____
 - vi) Any new roads or road widening _____
- e) Provincial ordinances relating to roads and buildings _____
- f) Advertising on Roads and Ribbon Development Act 1940 (Act 21 of 1940) as amended. _____
- g) Abolition of Racially BASED Land Measures Act 1991 (Act 108 of 1991). _____
- h) Abolition of Influx Control Act 1986 (Act 68 of 1986). _____
- i) Physical Planning Act 1967 (Act 88 of 1967) as amended. _____
- j) Mining regulations _____
- k) Any other statutes applicable to the area (quote the Act or Ordinance). _____
- l) Is the site subject to a lease agreement (if so, furnish conditions, particulars of lessee and whether lessee is using the property for his purpose). _____

7. SITE PLAN

State whether the following information has been indicated on the site plan:

- a) Boundary beacons, site dimensions and angles
- b) Positions and dimensions of improvements (e.g. buildings, lenses, encroachments, etc.)
- c) Positions and dimensions of existing features (e.g. rock outcrops, furrows, etc.).
- d) Positions, diameters, heights and species (if known) of trees, hedges and shrubs.
- e) Any trees that are a danger to people and property, that must be removed.
- f) Distances to, positions and dimensions of adjoining property, roads, etc.
- g) Notes on the construction and finish of buildings on adjoining sites.
- h) North point.
- i) Building lines where set back from boundaries.
- j) Services (e.g. electrical supply, water supply, storm water pipes, sewer pipes, etc.)
 Their dimensions and depths with recommendations about removing or diverting where applicable.
- k) Positions of connections to services (e.g. water supply, electricity, etc.)
- l) Spot levels, floor levels, bench marks and contours (if possible)
- m) Position of trial holes, with detail sections.
 - n) Areas subject to flooring or marshy conditions during rains. (All negative replies should be explained in a covering letter)

- 8. a) The following roads, streets, footpaths, drains, cables, power lines, water mains, furrows, etc. traverse the site. _____

- b) These exist under the following authority: _____

9. SITING

Give recommendations as to the siting of buildings with particular reference to the relative importance of streets bounding or adjoining the site, and adjoining property.

10. CLIMATIC CONDITIONS

- a) Describe local climatic conditions whether in mist-, rain-, or snow belt direction of prevailing winds and whether the temperature is subtropical or tropical.

- b) Is the site in a Malaria area: _____ Yes/No

- c) Should fly/mosquito proofing be provided to the following:

i) Opening portions of all windows _____ Yes/No

ii) Verandas _____ Yes/No

iii) All doors _____ Yes/No

iv) Kitchen and pantry windows and doors only _____ Yes/No

v) If not required, state reasons: _____

11. DESCRIPTION OF IMPROVEMENT

- a) Give a brief description of the improvements with reference to the construction and finish of roof, walls, floors and joinery.

- b) Are floor plans/sketches of the improvements attached? _____ Yes/No

- c) Can these improvements be adapted? _____ Yes/No

- d) How can they be adapted? (Give details):

- e) Estimated cost of alterations

i) Building R _____

ii) Electrical R _____

iii) Mechanical R _____

Total R _____

- f) Are full appropriation drawings, foundation remeasurement plans and any other information available attached? _____ Yes/No

- g) Are photographs of the building showing main construction features, attached? _____ Yes/No

- h) In case where existing building on the site are to be demolished, should this:

i) Be done departmentally? _____ Yes/No

ii) Be carried out under separate contract? _____ Yes/No

iii) Be included in the main building? _____ Yes/No

- iv) Are full appropriation drawings and a short demolition specification attached? _____ Yes/No
 _____ Yes/No
 i) Is the site immediately available for building work? _____ Yes/No
 j) Is the whole site suitable for building work? _____ Yes/No

12. FOUNDATION INFORMATION

- a) Have trial hole samples been submitted to Head Office? _____ Yes/No
 b) Probable proportions of subsoil are as follows:
 i) Hard rock _____ %
 ii) Soft rock _____ %
 iii) Earth _____ %
 c) Recommended depth of satisfactory foundations.
 d) Should the foundations be reinforced? _____ Yes/No
 e) Should the ground under the building be treated with termite poison? _____ Yes/No
 f) Do buildings in the vicinity show signs of cracking? _____ Yes/No
 g) Is there any danger of sink holes in the area? _____ Yes/No

13. BUILDING MATERIALS

Which of the following materials are available and recommended?

- a) Type of face brick (e.g. A39, B20. etc.) _____
 State nearest source of supply. _____
 b) Type of general purposes brick for foundations. _____
 c) Type of general purposes brick for superstructure. _____
 d) Nature of stone available suitable for concrete work? (e.g. mountain stone, granite, freestone, etc.) _____

 e) Distance to be transported.: _____
 Nature of sand available, suitable for concrete work? _____

 f) Distance to be transported.: _____
 Nature of sand available, suitable for building and plaster work? _____

 g) Distance to be transported.: _____
 Details of roof required, considering surrounding and climatic conditions (e.g. tiles, galvanised iron, etc.). _____

 h) Other materials used in the district for construction, state type. _____

14. FENCING

- a) Is the site fenced or is there any other means of enclosure? _____ Yes/No
 b) If Yes/No, state whether the fencing:
 i) Can be retained for future use. _____ Yes/No
 ii) Can be repaired and re-used. _____ Yes/No
 iii) Can not be used. _____ Yes/No
 c) State details of fence if reusable (e.g. type, height size of gates, etc.).

- d) May the fencing on boundaries of adjoining sites be removed, if unsuitable for future use? Yes/No
- N.B. Any new fencing required must be indicated on the site plan together with suitable positions for entrance gates.
- e) State type of fencing recommended. If not a standard type, give full details of recommended fencing
-
-

15. PROVISION OF SERVICES

Which of the following services are available? Yes/No

a) Local authority water

i) Cost of the following connections (if available)

| | | | | | | | |
|-------|-------|---|-------|------|-------|---|-------|
| 12mm | _____ | R | _____ | 37mm | _____ | R | _____ |
| 18mm | _____ | R | _____ | 50mm | _____ | R | _____ |
| 25mm | _____ | R | _____ | 75mm | _____ | R | _____ |
| 100mm | _____ | R | _____ | | | | |

ii) Water pressure available at site boundary _____

iii) Is the water supply metered? Yes/No

Domestic _____

Fire Fighting _____

Irrigation _____

b) Bore hole water _____ Yes/No

i) Depth _____

ii) Equipment _____

iii) Yield _____

c) Other source (perennial springs, rivers, tanks, etc.) _____

d) Local authority water borne sewer network: _____ Yes/No

i) Are the position, depth, size and ground levels of existing sewers indicated on the plan? _____ Yes/No

ii) If not state reasons. _____

iii) What is the cost of connection? _____ R _____

e) Vacuum tank water borne sewerage system _____ Yes/No

i) What is the minimum size of tank specified by the local authority? _____

ii) State number of removals per week. _____

iii) State cost of removals _____ R _____

f) Septic tank water borne sewerage system.

i) Are septic tanks permitted? _____ Yes/No

ii) Are details of the standard absorbency test shown on site plan? _____ Yes/No

g) Bucket removal or other system _____ Yes/No

i) Description of system (pit chemical. etc.) _____

ii) State cost of system _____ R _____

- iii) State number of weekly removals _____
- h) Waste water
Where soil conditions are unfavourable for the disposal of waste water, and there is no water borne system, suggestions should be given for the disposal of waste water.
-
-
- i) Stormwater disposal
- i) Are positions, sizes, depths and levels of existing stormwaterpipes, channels, culverts, in- and outlets indicated on the plan? _____ Yes/No
- ii) Is the site traversed by any natural stormwater courses? _____ Yes/No
- iii) Is protection from natural run-off from higher lying areas required? _____ Yes/No
- iv) State recommended method of stormwater disposal.
-
-
- j) Fire service
- i) Is a professional fire brigade available? _____ Yes/No
- ii) What is the distance between the fire station and the site in kilometre?

- iii) Are hydrants available? _____ Yes/No
- iv) Are the positions of the nearest hydrants indicated on the plan? _____ Yes/No
- v) In cases of additions, state number and positions of existing fire hose reels and/or extinguishers.
-
-
- vi) What size water supply is available for fire service? (Give cost of connection)
- | | | | | | | | |
|-------|-------|---|-------|-------|-------|---|-------|
| 75mm | _____ | R | _____ | 100mm | _____ | R | _____ |
| 150mm | _____ | R | _____ | | | | |
- vii) Average pressure of water supply for fire service _____
- viii) Will the local authority permit a combined fire and domestic water supply?
_____ Yes/No
- ix) Does the local authority require the separate fire main to be metered?
_____ Yes/No
- k) Heating, lighting and cooking.
- NB (i), (ii) and (iii) must be completed by the electrical consultant.
- i) Is an electricity supply available? _____ Yes/No
(If yes, from OW300, must be submitted as well).
- ii) If not, when will it be available? _____
- iii) If not, state proposed method of lighting etc.

- iv) What fuel is recommended for cooking?

- v) What fuel is recommended for heating?

-
-
- l) Public transport.
- i) Name of nearest railway station. _____
- ii) Distance from station to site. _____

16. GENERAL

PRINCIPAL AGENT

DATE

EXPLANATORY NOTES

- NOTE :
- i) Full details are to be furnished with a view to facilitating the preparation of working drawings.
 - ii) A detailed site plan together with photographs which illustrate the site's features as well as photographs from the site in all directions to show the outlook, must be submitted with this form.
 - iii) A locally plan/sketch should also be submitted.
 - iv) The form, photographs, plans and other relevant information must be submitted in triplicate to Head Office.
 - v) Attach a loose sheet of paper for all items where the space is insufficient with the necessary cross referencing.
 - vi) The following notes should be carefully read:

Trial Holes and Foundations

The officer must view the trial holes and check levels before particulars are submitted to Head Office. All trial holes other than those where rock is encountered, are to be excavated to a depth of three metres at least, even if gravel or shale formations are encountered, as these formations often occur in a thin layer with doubtful material below. A full description of each trial hole is to be submitted to Head Office, detailing the thickness of the formations cut through, to the full depth of trial holes. The average depth to approved bottom is also to be given. Samples of the formations cut through in sequence from the top to bottom of holes are to be submitted to Head Office, giving descriptions and thicknesses.

Accurate particulars and levels are essential as it is on this information that foundations, surface and soil drainage, and other factors are determined.

Works on Site and Demolitions

The short specification submitted for the demolition of existing buildings, when such demolitions are to be included in the main building contract, must include a description of the materials of which the foundations, superstructure, roof, floors, ceilings, windows, etc., are constructed. In addition the overall dimensions of the buildings must be given. In the most cases those dimensions will appear on the appropriation drawings but if such drawings are not available or dimensions are not given thereon, then they must be given separately.

State whether any of the old materials or fitting should be handed over to the Department. Describe such materials and state where they should be handed over (i.e. on site, at P.W. and LA Store, etc.) Also give full particulars of any materials or fittings considered serviceable and suitable for re-use in a new building.

When furrows are to be filled in, or any other such work is to be done on the site, give the length, width and depth of such furrows or word.

When walls and similar structure have to be pulled down, give their length, height and thickness and state the materials of which they are constructed.

When earth, stone or other surplus materials debris have to be removed from the site, and estimated amount in cubic metres should be stated.

Alterations and Additions to Existing Buildings.

State whether any of the old materials or fitting should be handed over to the Department. Describe such materials and state where they should be handed over (i.e. on site, at P.W. and LA Store, etc.) Also give full particulars of any materials or fittings considered serviceable and suitable for re-use in a new building.

When furrows are to be filled in, or any other such work is to be done on the site, give the length, width and depth of such furrows or word.

When walls and similar structure have to be pulled down, give their length, height and thickness and state the materials of which they are constructed.

When earth, stone or other surplus materials debris have to be removed from the site, and estimated amount in cubic metres should be stated.

Alterations and Additions to Existing Buildings.

Comprehensive and explicit information must be furnished in this respect. In addition to appropriation drawings. Remeasurement of Foundation plan and photographs, full information must also be submitted in regard to the materials of which the walls, floors, ceiling, windows, roof covering, caves, gutters, rainwater pipes etc., are constructed. The interior and exterior finishing, especially of those portions of the buildings that will be afflicted by the alterations and/or additions, must be specified.

Particulars of drains, water supply, fire, lighting and other services must be furnished.

Fencing:

It is recommended that the existing fencing should be repaired and re-used, a full description of the fence should be given. State the materials of which the fence is constructed, the number of wires, the distance between posts, the number of standards and droppers and the estimate amount of material required to repair the fence.

ANNEXURE C

DRAWING TITLE BLOCK

**The Drawing Title Block can be obtained from the Chief Architect:
Project Manager Advisory Services: Architectural
Central Government Offices: Pretoria**



| NO. | DNE | AMENDMENT | DPW |
|-----|-----|-----------|-----|
| | | | |

Copyright vests in the
Department of Public Works

Use the space



DATE

PROJECT

DESCRIPTION

ISSUE NUMBER

ISSUED BY

| | |
|-------------|-------------|
| DESIGNED BY | DESIGNED BY |
| DRAWN BY | DRAWN BY |
| CHECKED BY | CHECKED BY |
| APPROVED BY | APPROVED BY |

DPW

ANNEXURE D
SKETCHPLAN CHECK LIST
PRM 017

**The Coat of Arms can be obtained from Chief of Architect:
Project Manager Advisory Services: Architectural
Central Government Offices: Pretoria**

**DEPARTMENT OF PUBLIC WORKS
SKETCH PLAN CHECK LIST**

PROJECT: _____

WCS NO : _____

REFERENCE NO: _____

To be completed by the Private Architect
 Indicate in box next to EACH item whether provided or not applicable

- | | |
|--|--|
| <p>1. SITE PLAN</p> <p>1.1 Site dimension..... <input type="checkbox"/></p> <p>1.2 Building line setbacks..... <input type="checkbox"/></p> <p>1.3 Contours at suitable intervals and spot levels of pavements and floors <input type="checkbox"/></p> <p>1.4 North point <input type="checkbox"/></p> <p>1.5 Prevailing winds <input type="checkbox"/></p> <p>1.6 Street names <input type="checkbox"/></p> <p>1.7 Type of existing and proposed- 1.7.1 boundary fences, walls and gates..... <input type="checkbox"/> 1.7.2 retaining walls..... <input type="checkbox"/></p> <p>1.8 Existing buildings on adjoining sites likely to affect the design of new buildings..... <input type="checkbox"/></p> <p>1.9 1.9.1 rights of adjoining owners..... <input type="checkbox"/> 1.9.2 need for lateral support, etc..... <input type="checkbox"/></p> <p>1.10 Existing buildings on site to be - 1.10.1 retained <input type="checkbox"/> 1.10.2 demolished..... <input type="checkbox"/></p> <p>1.11 Trees to be removed or retained..... <input type="checkbox"/></p> <p>1.12 Natural water courses with flood lines and levels..... <input type="checkbox"/></p> <p>1.13 Servitudes and Departmentally owned service mains which - 1.13.1 cannot be disturbed..... <input type="checkbox"/> 1.13.2 need to be diverted..... <input type="checkbox"/></p> <p>1.14 New buildings..... <input type="checkbox"/></p> <p>1.15 Site terracing, with treatment of banks <input type="checkbox"/></p> <p>1.16 Site terracing, with treatment of banks-grassed, stone pitched, concrete retaining walls, etc. <input type="checkbox"/></p> <p>1.17 Roads, paths and paving with finishes-gravel, tarmac, concrete etc. <input type="checkbox"/></p> <p>1.18 Positions and depths of connection points of sewer, stormwater drain, water and fire service..... <input type="checkbox"/></p> <p>2. BUILDING PLANS</p> <p>2.1 Overall dimensions of new work..... <input type="checkbox"/></p> <p>2.2 Treatment at junction of new and old work. <input type="checkbox"/></p> <p>2.3 Structural column grid..... <input type="checkbox"/></p> <p>2.4 Room dimensions and areas (toilets excepted) and corridor widths..... <input type="checkbox"/></p> <p>2.5 Engineering service rooms and ducts..... <input type="checkbox"/></p> <p>2.6 Position of sanitary and other fittings..... <input type="checkbox"/></p> <p>2.7 Floor finishes..... <input type="checkbox"/></p> | <p>3. ACCOMMODATION</p> <p>3.1 Comparative schedule of rooms required and provided with areas..... <input type="checkbox"/></p> <p>4. ELEVATIONS</p> <p>4.1 General architectural treatment <input type="checkbox"/></p> <p>4.2 Principal materials <input type="checkbox"/></p> <p>5. SECTIONS</p> <p>5.1 Dimensioned floor to floor and floor to ceiling heights..... <input type="checkbox"/></p> <p>5.2 Floor levels and adjacent natural and formed ground levels, showing excavation and filling..... <input type="checkbox"/></p> <p>5.3 Roof slopes and type of construction and Consideration given to-covering..... <input type="checkbox"/></p> <p>5.4 Material and finish of walls..... <input type="checkbox"/></p> <p>6. CONSULTATIONS : Has the scheme been discussed with :</p> <p>6.1 Specialist Department..... <input type="checkbox"/></p> <p>6.2 User Department..... <input type="checkbox"/></p> <p>6.3 Divisional Engineer, Telkom, for telephone requirements..... <input type="checkbox"/></p> <p>6.4 Local Authority for - services..... <input type="checkbox"/> town-planning requirements..... <input type="checkbox"/> Quantity Surveyor for costs..... <input type="checkbox"/> Consultant and/or Departmental Specialist</p> <p>6.6 Structural..... <input type="checkbox"/></p> <p>6.7 Civil Works for - roads, drainage and stormwater..... <input type="checkbox"/> 6.8 Mechanical, for - fire service..... <input type="checkbox"/> heating, ventilating, and air-conditioning mechanical plant/equipment..... <input type="checkbox"/></p> <p>6.9 Electrical Emergency Generators for lifts..... <input type="checkbox"/></p> <p>6.10 Chemical Technology: Process design of water and sewerage treatment facilities..... <input type="checkbox"/></p> <p>7. GENERAL</p> <p>7.1 Any other information likely to affect the Estimate (state) (Items 1 to 6): </p> |
|--|--|

8. CERTIFICATE BY PRIVATE ARCHITECT

The Department's instructions given in the letter of appointment, the "Architects' Manual", with annexures, and the items on this Check List and the "Schedule of Construction and Finishes, etc." have been studied by me/us and, where applicable, complied with items which have not been complied with, or for which alternative proposals are made, are as follows :

PRIVATE ARCHITECT / PRINCIPAL AGENT

DATE

9. APPROVAL BY DEPARTMENTAL PROJECT MANAGER:

PROJECT MANAGER

DATE

10. REMARKS BY CLIENT / USER:

CLIENT/USER REPRESENTATIVE

DATE

ANNEXURE E
SCHEDULE OF CONSTRUCTION AND FINISHES,
USE FACTOR ANALYSIS AND ESTIMATE
PRM 018

DEPARTMENT OF PUBLIC WORKS
SCHEDULE OF CONSTRUCTION AND FINISHES, USE FACTOR
ANALYSIS AND ESTIMATE

PROJECT : _____

WCS NO: _____
 REFERENCE NO: _____

This form is to be completed by the private Architect in every detail and submitted with the Sketch Plan and Sketch Plan Check List. Indicate applicable items by marking the appropriate line:-

- | | | | |
|---|-------|---|-------|
| 1. FOUNDATIONS | | 5. WINDOWS | |
| 1.1 FOOTINGS | | TYPE : _____ POSITION : | |
| 1.1.1 Conventional unreinforced concrete strip..... | _____ | 5.1 Steel, painted..... | _____ |
| 1.1.2 Reinforced concrete..... | _____ | 5.2 Steel, galvanized..... | _____ |
| 1.1.3 Foundation beams and piles average length.....metres..... | _____ | 5.3 Aluminium, untreated..... | _____ |
| | | 5.4 Aluminium anodized..... | _____ |
| | | 5.5 Other (specify on separate sheet)..... | _____ |
| 1.2 FOUNDATION WALLING | | 6. CEILING TREATMENT | |
| 1.2.1 Brickwork (not reinforced)..... | _____ | TYPE : _____ POSITION : | |
| 1.2.2 Reinforced brick..... | _____ | 6.1 Gypsum or fibreboard on brandereng..... | _____ |
| 1.2.3 Reinforced concrete..... | _____ | 6.2 Plaster on concrete..... | _____ |
| 1.2.4 Other (describe on separate sheet). | _____ | 6.3 Suspended under concrete..... | _____ |
| | | 6.4 Acoustic panels..... | _____ |
| 1.3 FINISH | | 6.5 Other (specify on separate sheet)..... | _____ |
| 1.3.1 Face brick..... | _____ | 7. FLOOR FINISH | |
| 1.3.2 Plaster and paint..... | _____ | TYPE : _____ POSITION: _____ | |
| 1.3.3 Precast terrazzo..... | _____ | 7.1 Vinyl asbestos tiles..... | _____ |
| 1.3.4 Other (describe on separate sheet)..... | _____ | 7.2 Granolithic..... | _____ |
| | | 7.3 Ceramic..... | _____ |
| 2. SUPER STRUCTURE | | 7.4 Wood Mosaic..... | _____ |
| 2.1 Load bearing brickwork..... | _____ | 7.5 Concrete paving..... | _____ |
| 2.2 Reinforced concrete frame..... | _____ | 7.6 Other (specify on separate sheet)..... | _____ |
| 2.3 Structural steel frame..... | _____ | 8. EXTERNAL SUN PROTECTION | |
| 2.4 Beam and panel slab floors..... | _____ | Required? (Described on separate sheet)..... | _____ |
| 2.5 Other (describe on separate sheet)..... | _____ | 9. SPECIAL GLAZING | |
| 3. EXTERNAL WALLING SYSTEM | | Required? (Describe on separate sheet)..... | _____ |
| TYPE : _____ POSITION : | | 10. USE FACTOR ANALYSIS | |
| 3.1 Brick with the following facings: | | Total area of building, all floors but excluding basement | _____ |
| 3.1.1 Face brickwork..... | _____ |square metres | |
| 3.1.2 Plaster and paint..... | _____ | Total net usable area, excluding corridors, foyers | _____ |
| 3.1.3 Precast terrazzo..... | _____ | toilets, engineering service roomssquare metres | |
| 3.1.4 Other (describe on separate sheet) | _____ | Usable area expressed as a percentage of the total area | _____ |
| 4. INTERNAL WALLING SYSTEM | | 11. ESTIMATE | |
| 4.1 Brick, plaster and paint..... | _____ | All inclusive estimate of cost of service excluding -VAT | _____ |
| 4.2 Other (describe on separate sheet)..... | _____ | R..... | _____ |

Note: Describe on a separate sheet any additional features likely to affect the estimate. If necessary, also elaborate in like manner on any items appearing on this sheet, quoting the relevant reference numbers

PRIVATE ARCHITECT

PRINCIPAL AGENT

DATE

DATE

BUILDING ECONOMY: CATEGORISATION OF BUILDINGS

1. Upon allocation, each service is placed in one of four categories:
 - A. Prestige buildings, such as Supreme Courts, offices and residences for members of the Government, the Diplomatic corps and other highly placed officials, and buildings of special national importance or aesthetic significance such as National Monuments.
 - B. The bulk of the State loan vote building programme comprising offices: magistrate's courts; police divisional and district headquarters, stations and quarters; hospitals and nurses' homes; schools: agricultural research stations: buildings for the Departments of Defence and Prisons, and the like.
 - C. Minor buildings connected with those in Category B and certain buildings in smaller centres.
 - D. Utility buildings such as factories, garages and stores.
2. Attached is a list of components, materials and finishes of the maximum standards which may be used for each category. These are to be regarded as a general guide and other articles in equivalent cost brackets will be admissible subject to the Department's approval on grounds of suitability.
3. Exceptions to the standard lists will be allowed for the following reasons;
 - 3.1 Buildings such as research establishments, laboratories, hospitals and the like, in respect of those areas of such buildings where special finishes are required by the Client Department. Such exceptions must be authorised by the Department of Public Works in each individual case.

Some examples of special provisions under this heading are as follows:

Encaustic tiles to floors (for acid resistance).

Note - No type of special glass may be used in any case unless specifically authorised by the Department

Examples of such special glass are as follows:

Glazing with 7,5 mm high impact glass (for security).

Glazing with 9,5 mm high impact glass (for security).

Bullet-resisting glass.

- 3.2 Besides the above special finishes, where finishes from a higher category may be necessary for buildings in a lower category to satisfy practical requirements. The Architect will be given specific instructions in such cases.
- 3.3 Specific requirements of Local Authorities, e.g. for roofs, where sheet materials may not be permitted and slates or tiles may be required. Such requirements must be brought to the notice of the Department and must be complied with unless the Department gives written directions to the contrary.
- 3.4 Buildings in coastal areas, in respect of materials required to combat corrosion. Examples of such materials are listed below: in each category the materials are given in order of cost, with the cheapest first.

Roofs:

Corrugated asbestos.

Tiles (concrete or clay),

where approved by the Department, generally for aesthetic reasons or statutory requirements.

Windows:

Hot dip galvanised steel.

Aluminium or wood,

where approved by the Department, generally for aesthetic reasons.

External doors and gates:

Wood, painted.

Hardwood, where approved by the Department.

Fencing:

Aluminium wire mesh.

Precast concrete walling.

Brick walling, where approved by the Department.

Rainwater goods:

Fibre -cement
P.v.c, where available sizes are adequate.
Copper, where approved by the Department.

Flashings:

Aluminium.
Copper where approved by the Department.

3.5 Where other physical conditions require special provisions e.g.:

3.5.1 Where the nature of the soil or water would cause corrosion of galvanised iron supply and service pipes, necessitating the use of alternative materials such as p.v.c or copper.

3.5.2 For acoustical correction, where appropriate ceiling, wall and floor finishes are necessary.

4. CATEGORY A: PRESTIGE BUILDINGS AND NATIONAL MONUMENTS

No restrictions subject to the exercise of reasonable economy. Some of the items the use of which is limited to Category A are as below:

Marble flooring.

Wall to wall carpeting to Court-rooms, prestige offices and elsewhere where approved by the Department.

Glazed wall tiling, coloured.

Wall panelling, blockboard (by special approval).

Wall panelling, moulded (by special approval).

Purpose made hardwood doors.

Hardwood windows.

5. CATEGORY B: MAJORITY OF BUILDINGS**Maximum Standards****Roofs:**

Corrugated iron, including timber roof construction.

Rib trough, long span, including timber roof construction.

Fibre cement sheeting, including timber roof construction.

Fibre cement slates, including timber roof construction.

Cement tiles, including timber roof construction.

Clay tiles, including timber roof construction.

Concrete flat roof including slab, screed and waterproofing membrane (only where approved by the Department).

Ceilings:

Fibre cement or gypsum board, including brandering.

Fibrous plaster board, including brandering.

The following only for the purposes stated:

Gypsum suspended ceilings, including galvanised steel (only where necessary to conceal service).

Acoustic ceilings on brandering (where necessary for acoustical correction).

Acoustic suspended ceilings (only where necessary for acoustical correction including reduction of height and for accommodation of services).

Note - Concrete slab ceilings are to be skim coated except in store rooms, etc. where off-shutter should be specified.

Floors:

Floated finish on concrete.

Granolithic cement.

2,0 mm Vinyl asbestos tiles.

2,0 mm Vinyl tiles.

2,0 mm Vinyl sheet.

Terrazzo tiles.

Ceramic tiles.
Strip flooring, S A pine, including joists (indoor sport facilities, stages).

Wall finishing:

Bagging.
One coat compo plaster.
One coat cement plaster.
Two coat plaster.

Hard finishes polyurethane stippled and / or glazed coatings.

Face brick (internal)
Vinyl sheeting.
Glazed tiling, white.

Doors:

F L & B boarded one face, plywood the other.
Hollow core.
Semi-solid core.
Solid core.
Solid laminated and veneered.

Windows:

Steel, stock industrial.
Steel, stock residential.
Steel, residential, purpose made.
Aluminium stock.
Aluminium, purpose made.

Glazing:

Clear float glass of require thickness in windows.
6 mm Laminated safety glass in doors and low windows or sidelights and where necessary for safety and security reasons.

Painting:

Cement wash.
Emulsion paint.
Enamel.

6. CATEGORY C: MINOR BUILDINGS

Maximum Standards

Roofs:

Corrugated iron, including timber roof construction.
Rib trough, long span, including timber roof construction.
Fibre cement sheeting, including timber roof construction.
Concrete flat roof, including slab, screed and waterproofing membrane (only where approved by the Department).

Ceilings:

Fibre cement or gypsum board, including brandering.
Acoustic ceiling on brandering (only where necessary for acoustical correction).

Note: Wherever possible, soffits of concrete slabs are to be left off-shuttering, e.g. in basements, stores, strong rooms, cells, workshops, covered ways etc.; elsewhere to be skim coated.

Floors:

Floated finish on concrete.
Granolithic cement.
Vinyl asbestos tiles.
Terrazzo tiles.

Wall finishing:

Bagging.
One coat compo plaster.
One coat cement plaster.
Hard finishes: polyurethane stippled and / or glazed coatings.
Face brick (internal).

Doors:

F.L. & B., boarded one face, plywood the other.
Hollow core.
Semi-solid core.

Windows:

Steel, stock industrial.
Steel, stock residential.
Steel, residential purpose made.
Aluminium stock.

Glazing:

Clear float, glass of required thickness in windows.

Painting:

Cement wash.
Emulsion paint.
Enamel.

7. CATEGORY D: UTILITY BUILDINGS**Maximum Standards****Roofs:**

Corrugated iron, including timber roof construction.
Rib trough, long span, including timber roof construction.
Fibre cement sheeting, including timber roof construction.
Concrete flat roof, including slab, screed and waterproofing membrane (only where approved by the Department).

Ceilings:

Fibre cement or gypsum board, including brandering.

Note: Wherever possible, soffits of concrete slabs are to be left off-shuttering, e.g. in basements, stores, strong rooms, cells, workshops, covered ways etc.

Floors:

Floated finish on concrete.
Granolithic cement.
Vinyl asbestos tiles.

Wall finishing:

Bagging.
One coat compo plaster.
One coat cement plaster.
Hard finishes: polyurethane stippled and / or glazed coatings.
Face brick (internal)

Doors:

F.L. & B., boarded one face, plywood the other.
Hollow core.
Semi-solid core.

ANNEXURE G

CODE NUMBERS OF TYPE DRAWINGS

| | |
|--------|---------------|
| 1. FUR | Furniture |
| 2. GEN | General |
| 3. JUS | Justice |
| 4. POL | Police |
| 5. PRI | Prisons |
| 6. SB | State Housing |

Note: - In Category 6 drawings of married and single quarters for all ranks, comprising houses, outbuildings, maisonettes and flats are available if required.

FURNITURE

| NO | DRAWING | REMARKS |
|---------|---------------------------|--|
| FUR 011 | Standard Office Furniture | Desk Type 1 – Typist (1 500 x 700) |
| FUR 002 | Standard Office Furniture | Desk Type 2 - (1 500 x 900) |
| FUR 003 | Standard Office Furniture | Desk Type 3 - (1 800 x 900) |
| FUR 004 | Standard Office Furniture | Desk Type 4 (1 500 x 700) |
| FUR 005 | Standard Office Furniture | Desk Type 5 - Data Typist |
| FUR 006 | Standard Office Furniture | Correspondence Rack |
| FUR 007 | Standard Office Furniture | Book Cupboard |
| FUR 008 | Standard Office Furniture | Easy Chair |
| FUR 009 | Standard Office Furniture | Coffee Table |
| FUR 101 | Standard Office Furniture | Bookcase with glass doors |
| FUR 011 | Standard Office Furniture | Book Cupboard (858 mm high) |
| FUR 012 | Standard Office Furniture | Map Table |
| FUR 013 | Standard Office Furniture | Telephone Table (replaces dwg No 10142/6/M) |
| FUR 014 | Standard Office Furniture | Stationary Cabinet (replaces dwg No. 10142/25/M) |
| FUR 015 | Standard Office Furniture | Pigeon Hole Fitting (30 Pigeon Holes) (replaces dwg No 10142/30) |
| FUR 016 | Standard Office Furniture | Pigeon Hole Fitting (replaces dwg. No 10142/31) |
| FUR 017 | Standard Office Furniture | Office Stool (replaces dwg. No 10142/32) |
| FUR 018 | Standard Office Furniture | Settee for Rest Room (replace dwg No. 10142/36) |
| FUR 019 | Standard Office Furniture | Bench (replaces dwg. No 10142/51/M) |
| FUR 020 | Standard Office Furniture | Pedestal Table (replaces catalogue No. A3186/5) |
| FUR 021 | Standard Office Furniture | Cumberland Chair for Judge |
| FUR 022 | Standard Office Furniture | Cumberland chair |
| FUR 023 | Standard Office Furniture | Conference Table |
| FUR 024 | Standard Office Furniture | Utility Table |

| NO | DRAWING | REMARKS |
|-----------|---------------------------|--------------------|
| FUR 025 | Standard Office Furniture | Steel Office Chair |
| FUR 026 | Standard Office Furniture | Desk Type 6 |
| FUR 028 | Standard Office Furniture | Hat Rack |
| FUR 029 | Standard Office Furniture | Telephone Shelf |

GENERAL

| NO | DRAWING | REMARKS |
|-----------|---|--|
| GEN 001N | 3 Chamber Substation (one transformer) | Consult Electrical Branch for requirements |
| GEN 002 | Type single store for flammable liquids | Consult Fire Protection Officer |
| GEN 003 | Prison type security fences and gates | Consult Chief Architect if gumpoles are to be substituted by mild steel posts |
| GEN 004 | Security fences and gates | Consult Chief Architect if gumpoles are to be substituted by mild steel posts |
| GEN 005N | 3 Chamber Substation with emergency engine room (NORMAL) | Consult Electrical Branch for requirements |
| GEN 006N | Type Substation for 2 transformers (NORMAL) | Consult Electrical Branch for requirements |
| GEN 007 | Standard methods of lighting protection | Consult Electrical Branch for requirements |
| GEN 008M | 3 Chamber Substation with emergency room. (MIRRORED of GEN 005) | Consult Electrical Branch for requirements |
| GEN 009M | 3 Chamber Substation (one transformer) (MIRRORED of GEN 001) | Consult Electrical Branch for requirements |
| GEN 010 | Type garages (covered) | (Note: Alternative type roof for coastal area) |
| GEN 011N | Standard Substation. (NORMAL) (7,560 x 3,040) | Consult Electrical Branch for requirements |
| GEN 012M | Standard Substation. MIRRORED of GEN 011 | Consult Electrical Branch for requirements |
| GEN 013 | Type aluminium flagstaff | Normal type |
| GEN 014/1 | Timber trusses double pitch | Consult Structural Branch |
| GEN 014/2 | Timber trusses single pitch | A1 |
| GEN 014/3 | Timber bracing | A1 |
| GEN 015M | Type Substation for 2 transformers. (MIRRORED of GEN 006) | Consult Electrical Branch for requirements |
| GEN 016N | 2 Chamber Substation (one transformer) | Consult Electrical Branch for requirements |
| GEN 017M | 2 Chamber Substation (one transformer) (MIRRORED of GEN 016) | Consult Electrical Branch for requirements |
| GEN 018N | Combination (NORMAL) | Consult Electrical Branch for requirements |
| GEN 019M | Combination mains and standby plant Substation (MIRRORED of GEN 018N) | Consult Electrical Branch for requirements |
| GEN 020/1 | Type plant rooms: up to 20 KVA | Consult Electrical Branch for requirements |
| GEN 020/2 | Type plant room: 20kVA up to 80 kVA | |
| GEN 021/1 | Type plant room: 80 kVA up to 250 kVA | Consult Electrical Branch for requirements |
| GEN 021/2 | Type plant room: For two sets | |
| GEN 022 | Barrier Boom | Consult Co-ordinating Architect |
| GEN 023 | Type Substation (6,250 x 4,810) | Consult Electrical Branch for requirements |
| GEN 024 | Heavy type aluminium flagstaff | Heavy type suitable on buildings |
| GEN 025 | Magazine Type "E" | Consult QME (Police) for suitability etc. See also Structural Drawing No S6839/1 for reinforcement details |
| GEN 026 | Type covered parking with bracing (Rafters at 2,5m centres) | |
| GEN 026A | Type covered parking with bracing (Rafters at 2,5m centres) | |

| NO | DRAWING | REMARKS |
|-------------|---|---|
| GEN 027 | Type lettering for State buildings | Consult Co-ordinating Architect |
| GEN 028 | Conference table | This drawing supersedes Drawing No 13274/M |
| GEN 029 | Pistol range | Consult Police Training Department |
| GEN 030 | Double store for flammable liquids | Consult FPO |
| GEN 030/A | Double store for flammable liquids | Consult FPO |
| GEN 031 | Galleries for spherical and hemi-spherical bowl fittings | Consult Electrical Branch for requirements |
| GEN 032 | Chart of Departmental organisation | Consult Electrical Branch for requirements |
| GEN 033 | Type locker for Magistrate's gown | Consult Co-ordinating Architect |
| GEN 034/1-6 | Type motor transport servicing ramp for | Consult Co-ordinating Architect |
| GEN 034/1 | General plan and Elevations | |
| GEN 034/2 | Details of Type A | |
| GEN 034/3 | Details of Type B | |
| GEN 034/4 | Details of Type C | |
| GEN 034/5 | Details of Type D | |
| GEN 034/6 | Details of Type E | |
| GEN 035/1 | Type office furniture PWD details | Superseded in 1984 by type FUR 001 - 005 |
| GEN 035/2 | Full scale details for desk | Superseded in 1984 by type FUR 001 - 005 |
| GEN 036 | Rack unit, book rack, telephone cabinet | Superseded in June 1984 by type FUR 006-007 |
| GEN 037 | Stinkwood casket for presentation key | |
| GEN 038 | DPC at ground level in foundation wall at concrete bed for 270 mm walls | A4 sheet size |
| GEN 039 | Method of folding drawings (A1-sheet 594 x 841) | A4 sheet size |
| GEN 040 | Method of folding drawings (A0)-sheet 841 x 1180) | A4 sheet |
| GEN 041N | 3 Chamber Substation (14,260 m long) (one transformer) | |
| GEN 042 | Type shower | A4 sheet |
| GEN 043 | Security observation window | A4 sheet size |
| GEN 043A | Security communication window | A4 sheet size |
| GEN 044 | Security Communication window | A4 sheet size |
| GEN 045 | Security Communication window | A4 sheet size |
| GEN 046 | Security steel door | |
| GEN 047 | Type agricultural implements store | |
| GEN 047/1 | Plan, elevations, sections | |
| GEN 047/2 | Door schedule | |
| GEN 047/3 | Window schedule | |
| GEN 048A | Flagstaff to height 2450 (free-standing) | |

| NO | DRAWING | REMARKS |
|-------------|--|-----------------------|
| GEN 048B | Flagstaff to height 2100 (free-standing) | |
| GEN 048C | Type flagstaff for court-rooms (fixed to wall) | |
| GEN 049 | Type ironing board | |
| GEN 050 | Structure diagram of posts of the Chief Directorate Architecture | |
| GEN 051 | Folding Method of Drawing (A1) | A4 sheet size |
| GEN 052 | Folding Method of Drawing (AO) | |
| GEN 053 | Standard Mass Concrete Footings | |
| GEN 054 | Typical Eaves Detail | A4 sheet size |
| GEN 055/1-4 | Standard Toilet for Disabled Persons (High Level Cistern) | A4 sheet size |
| GEN057/1-4 | Standard Toilet for Disabled Persons (Flush Valve) | A4 sheet size |
| GEN 059 | Standards for the Planning of Messes and Recreation Facilities: Billiard Room | A4 sheet size |
| GEN 060 | Type Double Garage | |
| GEN 061/02 | Details, Notes & Schedules (60 Man Dormitory) | Ref 6048/0133/8/4A/15 |
| GEN 061/01 | Plan, Elevations Sections & details (60 Man Dormitory) | Ref 6048/0133/8/4A/15 |
| GEN 063 | Type Name Board | A3 sheet size |
| GEN 066 | Typical stoep screen & gate | |

JUSTICE

| NO | DRAWING | REMARKS |
|------------|------------------------------------|---------------------------------|
| JUS 001/1 | Furniture Layout and Sections | Consult Co-ordinating Architect |
| JUS 001/2 | Magistrate's Bench | |
| JUS 001/3 | Table 1500 x 750 | |
| JUS 001/4 | Table with lectern | |
| JUS 001/5 | Table 1500 x 750 – cupboard | |
| JUS 001/6 | Table 750 x 750 – cupboard | |
| JUS 001/7 | Barrier | |
| JUS 001/8 | Public Benches | |
| JUS 001/9 | Dock | |
| JUS 001/10 | Witness box and Recording cabinet | |
| JUS 001/11 | Type Locker for Magistrate's Gowns | |
| JUS 001/12 | Emblem for Department of Justice | |

POLICE

| NO | DRAWING | REMARKS |
|-------------|---|------------------------------------|
| POL 001/1-9 | Cell layout and details | Consulting Co-ordinating Architect |
| POL 005 | Type pistol and rifle racks for police station | Consulting Co-ordinating Architect |
| POL 006N | Type 1 Mortuary for 250 bodies. NORMAL | Consulting Co-ordinating Architect |
| POL 007N | Type 2 Mortuary for 300 bodies. NORMAL | Consulting Co-ordinating Architect |
| POL 008N | Type 3 Mortuary for 600 bodies. NORMAL | Consulting Co-ordinating Architect |
| POL 009M | Type 1 Mortuary for 150 bodies. MIRRORED | Consulting Co-ordinating Architect |
| POL 010M | Type 2 Mortuary for 300 bodies. MIRRORED | Consulting Co-ordinating Architect |
| POL 011M | Type 3 Mortuary for 600 bodies. MIRRORED | Consulting Co-ordinating Architect |
| POL 012 | Type Mortuary Type "S" (attached to a building) | Consulting Co-ordinating Architect |
| POL 013 | Police Emblem (Full size) | |
| POL 014 | Guard Hut Type A | |
| POL 014A | Guard Hut Type A - Drainage only | |
| POL 014B | Control Post Gate Opening Mechanism | |
| POL 015 | Security Fence and Gates and Window protection for SAP and premises | |
| POL 015A | Security Fence (Inland Areas) for S A Police stations and premises | |
| POL 015B | Security Fence (Coastal Areas) for S A Police stations and premises | |
| POL 016 | Rack for 4-37mm Anti-riot Rifle and 12 cartridge bags | |
| POL 017 | Bicycle hook, benches in cells and screen wall next to w.c. in cell | |
| POL 018 | Elevation and plan of partitioning between Charge Office and Detention Area | |
| POL 019 | Section and isometric of drink fountain, w.c. pan and wash hand basin | |

PRISONS

| NO | DRAWING | REMARKS |
|----------|--|--|
| PRI 014 | Prison type Maisonettes (3 bedrooms and outbuildings) | |
| PRI 015 | Type Double bed and Single bed | |
| PRI 016 | Type L-flats | 2 Storeys: 4 flats ± 76,3 m ² flat |
| PRI016R | Type L-flats | 2 Storeys: 4 flats ± 76,3m ² flat |
| PRI 017 | Type 3L-flats | 3 storeys: 6 flats ± 79,5m ² flat |
| PRI 017R | Type 3L-flats | 3 storeys: 6 flats ± 79,5m ² flat |
| PRI 018 | Type 5L-flats | 2 & 3 storeys staggered: 5 flats 78,3m ² flat |
| PRI 019 | Type 2m - flats | 2 storeys: 4 flats ± 86m ² flat ,staircase in vertical position |
| PRI 020 | Type SM-flats | 2 Storeys: 4 flats ± 86m ² flat staircase in horizontal position |
| PRI 021R | Type 3M/R flats | 3 Storeys: 6 flats ± 89,2m ² flat |
| PRI 022 | Type prison window | |

ANNEXURE H

(Paragraph C.2.5.2 refers)

USE OF PREFABRICATED MULTI-NAIL TRUSSES

1. In all cases conventional bolted trusses are specified in the original documentation, but if the Contractor proposes the use of multi-nail trusses as an alternative, he must first offer a substantial saving in cost and until this has been approved the substitution of trusses of this type will not be considered.
2. The use of the prefabricated multi-nail timber roof trusses is subject to the approval of the Project Manager.
3. The Contractor is required to submit to you in good time, for forwarding to the Project Manager, an A1 size polyester print of 0,05 mm minimum thickness of a drawing signed by a Registered Professional Engineer who is on the Department's panel for structural work, which shows the following information:
 - 3.1 The type of roof covering and design loads, maximum purlin and bracing spacing, which must be in accordance with the Standard Specification.
 - 3.2 Complete details of the roof system, showing the positions of the trusses and purlins and typical elevations. The minimum bracing must comply with the recommendations of the Truss Plate Association. Truss angles or apex heights must be indicated.
 - 3.3 Sizes and grades of all timber members.
 - 3.4 Plate sizes for each connection to enable a thorough check to be made on Site; code numbers are not acceptable. Connections for hip, valley and jack trusses, etc., must be separately detailed.
4. Before the Contractor is authorised to proceed with the supply of multi-nail trusses, you must obtain information of approval from the Project Manager in writing.
5. To avoid any problems in this connection, the Contractor should be advised of the above conditions at the time of handing over of the Site.