



public works

Department:
Public Works
REPUBLIC OF SOUTH AFRICA

MANUAL FOR PRIVATE ARCHITECTS: PW147

	Version control	Date
1	Version 1	01 August 2017

TABLE OF CONTENTS

CHAPTER 1 - DEFINITIONS.....	9
1 Definitions and Abbreviations	9
CHAPTER 2 – APPOINTMENT AND LEGAL DUTIES.....	15
2.1 General preamble and legal empowerment.....	15
2.2 Legal framework.....	15
2.3 Terms of reference.....	16
2.4 The Employer: Department of Public Works.....	17
2.4.1 The User Department or User Client	17
2.4.2 The Departmental Project Manager.....	17
2.4.3 The Departmental Professionals	17
2.5 Principal Agent and Agency	17
2.5.1 Delegation.....	17
2.5.2 Duties of the architect – Principal Agent.....	18
2.5.3 Duties of the architect – Not Principal Agent	18
2.6 Confidentiality and security projects	19
2.7 Duties in terms of the OHS Act.....	19
2.8 Appointment of other consultants	20
2.9 Communication / recording – minutes	20
2.10 Use of reasonable skill and care	20
2.10.1 Scrutiny of work.....	20
2.11 Multiple appointments/ Firms in Association or Joint Ventures	20
2.12 Scope of architectural work: Summary of services	21
2.13 Work Stages	22
2.13.1 STAGE 1: Inception	23
2.13.2 STAGE 2: Concept and viability (concept design)	24
2.13.3 STAGE 3: Design development.....	25
2.13.4 STAGE 4: Documentation and procurement	27
2.13.5 STAGE 5: Construction	28
2.13.6 STAGE 6: Close-out.....	29
2.14 Partial Services	30
CHAPTER 3 – INCEPTION AND DESIGN DEVELOPMENT	31
3.1 General preamble	31

3.1.1	Batho Pele	31
3.2	Convention of the briefing meeting	32
3.2.1	Brief / Scope of Works.....	32
3.2.2	Briefing meeting.	33
3.3	Inception and feasibility of the project.....	33
3.3.1	Site considerations.....	34
3.4	Local Authority	34
3.5	Site: demarcation and suitability	34
3.5.1	Demolitions	35
3.6	Site: Technical considerations.....	35
3.6.1	Geotechnical.....	35
3.6.2	Dolomitic soils and related issues (illegal mining).....	36
3.7	Services	36
3.7.1	Electrical	37
3.7.2	Potable water.....	37
3.7.3	Sewerage	37
3.7.4	Solid waste	37
3.7.5	Storm water	37
3.7.6	Information, Communication Technology (ICT)	37
3.8	Project Execution Plan (PEP).....	38
3.9	Responsibility of Consultants.....	42
3.10	Regulatory compliance	43
3.10.1	National Building Regulations – Deemed-to-satisfy preference	43
3.10.2	By-laws and town-planning regulations	43
3.11	The design	44
3.11.1	Adherence to brief.....	44
3.11.2	Design and Planning considerations – General.....	44
3.11.3	Standards of Fittings and Finishes	46
3.11.4	Flexibility and Adaptability	46
3.11.5	Inclusivity of user requirements	46
3.11.6	Service Delivery to the public.....	47
3.11.7	Certified accommodation schedule and norms.....	47
3.11.8	Economic design and cost control.....	47
3.11.9	Approved Accommodation Requirements/Space norms.....	48
3.11.9.1	Open-plan accommodation	48

3.11.10	Space and Cost Planning and Control	48
3.11.11	Amendments required to conform to space and cost limits	49
3.11.12	Removal or substitution of uneconomical elements	49
3.12	Consultation with Client/User Departments	49
3.13	Acoustical requirements	49
3.14	Natural lighting and natural ventilation	50
3.15	Structural requirements	50
3.16	Electrical Services	50
3.16.1	Electronic and associated Services	51
3.17	Mechanical Services	51
3.17.1	Consultation	51
3.17.2	Noise and pollution control	51
3.17.3	Access and positioning on site	51
3.17.4	Plant rooms for mechanical equipment and tank rooms	52
3.17.5	Kitchen design	52
3.18	Universal access	52
3.19	Existing facilities	52
3.20	Buildings and artefacts of historical importance and National Monuments	53
3.20.1	National Heritage Resources Act	53
3.20.2	Recovery of building elements, object or artefacts	54
3.21	Demolition of any building / part of building	54
3.22	Acceptance of design proposals	54
3.22.1	Approval by Client Department – non binding on DPW	55
CHAPTER 4 – CONSTRUCTION REQUIREMENTS		55
4	General preamble to the construction section	55
4.1	General deterioration of buildings – Design for low maintenance	55
4.1.1	Sample construction	56
4.2	Energy	56
4.3	Building Indoor Environmental Quality (IEQ)	56
4.3.1	HVAC	56
4.3.2	Access to fresh air	57
4.3.3	Lighting – natural and artificial	57
4.3.4	Air pollutants	57
4.3.5	Acoustics	57
4.3.6	Access to views	57

4.4	Life cycle, maintenance costs and initial cost	57
4.5	Materials	58
4.5.1	General preamble to materials: new materials	58
4.5.2	Asbestos and asbestos containing materials	58
4.5.3	Cleaning of surfaces that cannot be replaced.....	58
4.5.4	Corrosion zones	59
4.6	Foundations	59
4.7	Surface beds and ground bearing slabs	59
4.8	Walling.....	60
4.8.1	Masonry walling	60
4.8.2	Alternative building technologies	60
4.9	Roofing.....	61
4.9.1	Conventional Flat concrete roofs: Restricted use	61
4.9.2	Roofs over slabs	61
4.9.3	Insulation of roofs	61
4.9.4	Roof configuration – parapet walls	62
4.9.5	Materials	62
4.10	Internal box gutters	62
4.11	Eaves gutters	63
4.12	Downpipes	63
4.13	Ceilings.....	64
4.13.1	Ceiling heights.....	64
4.13.2	False ceiling voids.....	64
4.14	Doors	64
4.14.1	Safe and Record room doors	64
4.14.2	Evidence rooms (Corpus Delicti)	64
4.14.3	Locks and master keying.....	64
4.14.4	Hollow core doors	65
4.15	Windows	65
4.15.1	Air leakage	65
4.15.2	Burglar bars	65
4.16	Services to buildings	65
4.16.1	Preamble to professionals.....	65
4.17	Domestic water supply and Drainage	66
4.17.1	Potable water supply (Drinking water)	66

4.17.2	Hot water supply	67
4.17.3	Reserve supply	67
4.17.4	Domestic drainage / Wet Services.....	68
4.17.5	Gas installations.....	69
4.17.6	Design of service installations	69
4.17.7	Sanitary fittings	69
4.18	Lightning protection	70
4.18.1	Thatch.....	70
4.19	Lift installations.....	70
4.19.1	Sumps to lift pits.....	70
4.19.2	Lift motor rooms	70
4.20	Anticipated life span of building elements.....	70
CHAPTER 5 – TECHNICAL DOCUMENTATION		74
5.0	General preamble technical documentation and procurement	74
5.1	General considerations relating to drawings	74
5.1.1	Full and comprehensive information.....	74
5.1.2	Language policy relating to drawings and documentation	75
5.1.3	Size of drawings.....	75
5.1.4	Layout of sheets and title block	75
5.1.5	Drawing and graphic standards.....	75
5.2	Duplicating and copying documents	76
5.3	Submission of drawings and documents to the DPW	76
5.4	Copyright.....	77
5.5	Posting and courier services	77
5.6	Drawings and documentation required	77
5.6.1	Design development	77
5.6.2	Sketch Plan Committee.....	77
5.6.3	Construction phase	77
5.7	Specification.....	77
5.7.1	Responsibility of the architect.....	77
5.7.2	Departmental Standard specification.....	78
5.7.3	Specification format.....	78
5.8	Brand names and propriety products.....	78
5.9	Local products and materials.....	79
5.10	Relationship between specification and drawings.....	79

5.11	Numbering of drawings	79
5.12	Drawings scale.....	81
5.13	Fittings and equipment to be shown on drawings	84
5.13.1	Fittings to be shown as “in contract”	84
5.13.2	Fittings to be indicated “not included in contract”	85
5.13.3	Fittings not to be shown	85
5.14	Completeness and correctness of documentation	86
CHAPTER 6 – Contract Administration and Building Handover		87
6.1	General preamble to Contract Administration	87
6.2	Ethics and integrity.....	87
6.2.1	Fair administration.....	87
6.2.2	The Prevention and Combating of Corrupt Activities	88
6.3	Care and skill	88
6.4	Tendering procedure	88
6.5	Form of Contract	89
6.6	Administration of the Contract	89
6.7	Handing over of the Site.....	90
6.7.1	Forms.....	90
6.8	Drawings.....	91
6.8.1	Drawings; handover	91
6.8.2	Drawings; Supplementary	91
6.9	Construction program.....	91
6.10	Construction progress	92
6.10.1	Monitoring of progress and reporting.....	92
6.10.2	Delays and procedures	92
6.10.3	Default by the professional team	92
6.10.4	Default by the client Department	93
6.10.5	Default by the contractor	93
6.11	Extensions of the contract period and claims for compensation	93
6.11.1	Actions by the Architect/principal Agent	93
6.11.2	Claims involving other disciplines/professionals	94
6.11.3	Actions by the Departmental Project Manager	94
6.12	Inspection, Quality Assurance and Quality Control.....	94
6.12.1	Architectural professionals	94
6.12.2	Engineering and other disciplines.....	95

6.13	Comprehensive contracts.....	95
6.14	Separate and direct contracts.....	95
6.15	Decisions and instructions on site	96
6.15.1	Preamble.....	96
6.15.2	Authority to issue and receive instructions.....	96
6.15.3	Instructions and clarification of documentation	96
6.15.4	Contract Instructions – formerly called Variation Orders.....	97
6.15.5	Origins and causes of Contract instructions	97
6.15.6	Issuing of Contract Instructions	98
6.15.7	Timeous issue of instructions	99
6.16	Financial control.....	99
6.17	Handing over procedures	99
6.17.1	Practical Completion	99
6.17.2	Contract Completion Report.....	100
6.17.3	Final Completion	100
6.18	Close out procedures	100
A1.0	Definitions and salient aspects concerning the architect’s responsibilities	101
A1.1	Health and Safety Officer.....	101
A1.2	Health and Safety Agent of the Client	101
A1.3	Health and Safety Specification – by the H & S Agent	101
A1.4	Health and Safety Plan – by the Main Contractor.....	101
A1.5	The principal agent – compliance with legislation.....	101
A1.6	The architect’s responsibilities in terms of legislation	102
A1.7	Specific tasks required of the Architect as Principal Agent.....	102
A1.8	The role of the building contractor.....	102
B1.1	Compliance with the Act	103
B1.2	Schedules.....	103
B1.2.1	Schedule 1	103
B1.2.2	Schedule 2	103
B1.2.3	Schedule 3	103
B1.2.4	Schedule 4.....	104
B1.2.5	Schedule 5.....	104

CHAPTER 1 - DEFINITIONS

1 Definitions and Abbreviations

The following are a list of common terms and abbreviations which may be encountered when working for the Department of Public Works. Not all the terms used are necessarily found in this manual but may be referred to in meetings and correspondence with the Department. The list is not extensive and is offered as guidance.

Act	Legislation enacted by the government of the Republic of South Africa
Additions and new work	Additions and new work arising from functional reasons could be considered by the Department
Approved Accommodation Requirements and Funds	Approved Accommodation Requirements and Funds is a document generated by space and cost norms used by the Department for various building typologies and client departments
Architect	A person registered by SACAP as a professional architect (PrArch)
Architect's Act	Act 44 of 2000 as amended
Architectural Technologist	A person registered by SACAP as a professional senior architectural technologist (PSAT) or a professional architectural technologist (PAT)
Bid Evaluation Committee (BEC)	A Departmental committee that reviews the bids or tenders received from prospective contractors. This committee scores the bids received in terms of the tender documentation and recommends a contractor to the (National) Bid Adjudication Committee (BAC or NBAC). This committee consists of the Department Project Manager and several nominated Departmental officials
Bid Specification Committee (BSC)	A Departmental committee that reviews the bid or tender documentation and approves the documentation as being acceptable for tender purposes. This committee consists of the Department Project Manager and several nominated Departmental officials
BMS	Building Management System. Integrated system for general building management
Brief/Scope of Works	"Brief" – term commonly used in architectural practice to describe a document that outlines and

	describes, in detail, the instructions of the employer/client to the professional team. This document defines the scope of the work of the professional team
Client (employer of the architectural service provider)	The sole client (termed “Employer” in the PSP Tender document) is the Government of the Republic of South Africa in its National Department of Public Works and its named representative shall be the Departmental Project Manager. The Department may from time to time nominate other officials to represent itself
CMP	Conservation Management Plan
CoC	Certificate of Compliance
Competent person	A person who is qualified by virtue of his/her training, experience and contextual knowledge to make a determination regarding the performance of a building or part thereof in relation to a functional regulation or to undertake such duties as may be assigned to him/her in terms of the National Building Regulations (ref s3.7 SANS 10400-A)
Consulting Architect / Private Architect	An architect, usually in private practice, who is contracted for a specific service to the National Department of Public Works
Contract Instructions (CI's) formerly called Variation Orders or VO's	Instructions issued to the contractor in terms of the applicable contract. These instructions are issued regarding e.g.: Alteration to design, quality or quantity of the works but may not substantially alter the scope of the works. Rectification of errors etc. These were formerly known as Variation Orders (VO's) in earlier versions of contracts such as the JBCC. Internal DPW processes may still refer to CI's as VO's.
Departmental Architect	An architect who is permanently or temporarily employed by the DPW to represent the Department

Departmental Engineer(s)	An engineer(s) of different disciplines who is(are) employed by the DPW to represent the Department
Departmental Project Manager	A project manager who is employed by the DPW to represent the Department and is the sole entry point through whom all parties must communicate
Departmental Town Planner	A Town Planner(s) who is(are) employed by the DPW to represent the Department
DPW, NDPW or Department	The National Department of Public Works of the Republic of South Africa as represented by its Head Office or any of its Regional Offices.
Employer (client of the architectural service provider)	The sole employer (“Employer” is the term used in the PSP tender document) is the Government of the Republic of South Africa in its National Department of Public Works and its named representative shall be the Departmental Project Manager. The Department may from time to time nominate other officials to represent itself The term “employer” and “client” are used interchangeably in this manual.
Environment Conservation Act	Environment Conservation Act – Act 73 of 1989 as amended from time to time
Environmental Management Act	National Environmental Management Act – Act 107 of 1998 as amended from time to time
GBCSA	Green Buildings Council of South Africa is an independent, non-profit company that was formed to lead the greening of South Africa’s commercial property sector. They are members of the World Green Building Council. The Department of Public Works is a Council member.
Heritage Act	National Heritage Resources Act – Act 25 of 1999 as amended from time to time. This Act binds the State and guides the architectural interventions on heritage buildings
HIA	Heritage Impact Assessment in terms of Act 29 of 1999
IA	Implementing Agent; person/body/organisation who will see to the implementation of the project
IDoW	Identification of Work. SACAP document which demarcates the work that may be done by the

	different classes of professionals registered with the Council
ISCC	Interdepartmental Security Coordinating Committee
NBR	National Building Regulations. Regulations promulgated in terms of National Building Regulations and Building Standards Act No. 103 of 1977. This is not to be confused with SANS 10400 which is “The application of the National Building Regulations”
NIA	National Intelligence Agency
Planning Instruction (PI)	Document issued by the Department which formalises the procurement process of a project
Principal Agent / Agency (PA)	Person identified in terms of various documents but not limited to the contract (such as the JBCC) and letter of appointment who acts as the principal agent of the Department and has delegated powers (with restrictions) to act on behalf of the Director General of the Department
Professional Service Provider (PSP)	In the context of this manual – a registered professional, that has been appointed to provide a service to the Department – an architectural professional
Professional Services Legal Committee (PLC)	This is a Department of Public Works committee which issues directives to Professional Service Providers and Departmental staff on how to proceed with various contractual and legal matters
Project Execution Plan (PEP)	A comprehensive plan which outlines how and when the project will be brought to fruition. This plan outlines planning, communication, risks and financial implications. A template is offered in this document
Public Finance Management Act-PFMA	Public Finance Management Act – Act 1 of 1999 as amended from time to time. This elaborates on the spending of public funds
Refurbish/refurbishment	The remodelling, refashioning including general cleaning, decorating, fitting out and re-equipping of a building, site, product or infrastructure where significance of the fabric is not important. This implies extensive work and a greater intervention

	<p>than that implied by 'renovate' and can include new parts and systems to improve and extend the service life of such part product or system. Typical examples would be office blocks where much new material by way of floors, walls, electrical, mechanical and wet services and so on are required.</p>
Registered person – Architect/engineer/town-planner/land surveyor/landscape architect/project manager or any other profession	A person registered by a Council established by an Act and whose registration is required with such body, in order to provide a service
Renovate / renovation	Refers to the process of returning something to a good state of repair or to make it look new. It implies a lesser intervention than that implied by 'refurbish'. Typical examples here are courts of law where much of the significant existing architectural fabric i.e. woodwork will be serviced and some services i.e. electrical and mechanical may be replaced.
Restore / restoration	The reinstatement of a part, product, finish or element within the building to its former state where most if not all of the existing fabric is deemed significant. This implies extensive retention and use of original parts, materials and techniques and is general associated with an ethical approach to the returning of an object to its original state in its history. Typical examples here are heritage buildings such as the Union Buildings, the Castle and so on. Typical examples are both significant buildings and separate elements in buildings such as artwork in buildings or mosaic walls in passages etc.
SABS	South African Bureau of Standards. An organisation established by a statute
SACAP	The South African Council for the Architectural Profession. An organisation established by a statute
SANS 10400	The application of the National Building Regulations: a document published by the South African Bureau of Standards
SANS XYZ	One of the South African National Specifications as published by the SABS

SAPS	The South African Police Service
SASA	South African Security Agency – an organ of State charged with security of individuals and the buildings they occupy
Senior Architectural Technologist	A person registered by SACAP as a professional senior architectural technologist (PSAT)
Service Provider or Professional Service Provider (PSP)	See Professional Service Provider
Site Clearance (and Certificate)	A document issued by the Directorate: Town Planning Services which certifies legal compliance in terms of several Acts and which certifies that a site(s) may be used for the envisaged project and is suitable for the scope of the Works and the specific services required are available
SLA/Letter of Appointment	Service Level Agreement. This is termed “Contract” in the “Invitation to tender for Professional Services”. To differentiate between the Building Contract, termed the “contract” in this manual, the Agreement between the Department and the Professional Service Provider in termed the “Service Level Agreement/Letter of Appointment” in this manual
Standards Act	South African statutory body that was established in terms of the Standards Act, 1945 (Act No. 24 of 1945) and continues to operate in terms of the latest edition of the Standards Act, 2008 (Act No. 29 of 2008) as the national institution for the promotion and maintenance of standardisation and quality
Status Quo report / SQ report	Status Quo report. A comprehensive report that details and describes the status quo of the building, services and the like and informs the client of a possible approach to achieve the desired outcome
VO	Variation Order. Generally now referred to as “Contract Instruction” or “Instruction” depending on the form of contract used

CHAPTER 2 – APPOINTMENT AND LEGAL DUTIES

2.1 General preamble and legal empowerment

This manual is given contractual and legal empowerment by the formal Letter of Appointment/Service Level Agreement. Architects are expected to comply with the provisions of the Manual. This manual not only stipulates mandatory requirements of the Department but also offers recommendations and preferences in terms of architectural work. Therefore the definitions below indicate how the use of certain words are interpreted.

In this manual the meaning of intent is in line with the International Standard ISO/IEC, and the following modal verbs are used for the expression of provisions:

- “shall” and “must” is used to indicate a mandatory requirement;
- “should” is used to indicate a recommendation;
- “may” is used to indicate permission;
- “can” is used to indicate possibility and capability.

2.2 Legal framework

The Constitution is the supreme law of the Republic of South Africa. Any law or conduct inconsistent with it is invalid, and the obligations imposed by it must be fulfilled. Various other Acts and regulations promulgated in terms of these Acts govern and regulate the practice of architecture. Some of these Acts have a direct relationship with the profession as a whole whilst other have an indirect relationship or influence only parts or aspects of the practice of architecture in the Republic of South Africa.

The appointment of a consulting architect by the State is in terms of this legal framework and architects are expected to know and understand the legal framework under which they practice their profession. Ignorance of or lack of knowledge of the legal framework cannot be advanced as a reason for condonation of any actions, either by commission or omission on the part of the architect. Nothing in this manual can be construed to override any provisions of any Laws, Acts or the Constitution of the country.

Numerous Acts and regulations either directly or indirectly impinge upon the profession and the construction industry. Further chapters / paragraphs in this manual refer in detail to the most important pieces of legislation of which architects must be aware. They also expand upon the most important aspects that need to be taken into account during the design and documentation of buildings. The following is a summary list of the most prominent of these:

- Architectural Profession Act – Act 44 of 2000 as amended for time to time. This act is the basis for the establishment of SACAP. Architectural Professionals must comply with Act 44 of 2000 as well as the various directives, rules, ethical statements and the Code of Conduct of SACAP, which may be amended from time to time.
- National Building Regulations and Building Standards Act – Act 103 of 1977 as amended from time to time. This act is the basis for the establishment of the National

Building Regulations as well as for the establishment of SANS 10400 – the Application of the National Building Regulations which regulate the construction industry.

- Occupational Health and Safety Act – Act 85 of 1993 as amended for time to time. This act is the basis for the establishment health and safety rules on site as well for some design decisions.
- Public Finance Management Act – Act 1 of 1999 as amended from time to time. This elaborates on the spending of public funds.
- Environment Conservation Act – Act 73 of 1989 as amended from time to time.
- National Environmental Management Act – Act 107 of 1998 as amended from time to time
- National Water Act – Act 36 of 1998 as amended from time to time. This Act binds the State and outlines various issues with which architects may have to deal for example on rural sites owned by the Department of Public Works.
- Water Services Act – Act 108 of 1997 as amended from time to time. This Act binds the State and determines the design parameters for the design of water supply and drainage in buildings. This act also determines parameters for the installation of Fixed Electric Storage Water Heating Systems in buildings.
- National Heritage Resources Act – Act 25 of 1999 as amended from time to time. This Act binds the State and guides the architectural interventions on heritage buildings.

2.3 Terms of reference

The purpose of this document is to act as a guide to the functions, duties and responsibilities of consulting Architects and Architectural Professionals in all aspects of appointments held with the National Department of Public Works, including but not limited to the design, documentation and administration of architectural projects. It does not implicitly or explicitly set out to relieve the architectural professional of any duties in terms of the professional code(s) of ethics or duties set out in the documentation of SACAP or the contract documentation of JBCC or other recognized authority of the Department but solely attempts to guide the professional in the discharge of their duties.

This document does not attempt to be exhaustive in its field, and should not be interpreted as such. It does, however, aim at setting out the task of the architectural professional more succinctly, specifically in terms of the requirements of the Department.

In the event of a discrepancy between this document and/ or the Letter of appointment and/ or the Invitation to Tender for Professional Services and/or Service Level Agreement, the latter documents shall have preference over this document.

The term Architect or Architectural Professional are, for the interpretation of this document, interchangeable as far as the “Identification of Work” (IDoW), as set out by SACAP, permits. It should be noted that basic duties in terms of the execution of the contract held with the Department, are similar for all categories of registration with SACAP.

2.4 The Employer: Department of Public Works

The sole employer/client is the Government of the Republic of South Africa in its National Department of Public Works and its customary representative shall be the Departmental Project Manager. The Department may from time to time nominate other officials to represent itself.

2.4.1 The User Department or User Client

The designated occupant of the building is the User Department or User Client being one of the Departments of the State. The Architect shall not receive or act upon any instruction from the User Department. Solely the Departmental Project Manager shall issue instruction to the Architect and shall arrange, via the Project Manager, any discussions with the User Department.

2.4.2 The Departmental Project Manager

The Departmental Project Manager is the Departments' representative and single point of entry to the project. Their function is to manage, control and co-ordinate the project on behalf of the Employer and client department. Their functions do not relieve the Architect of the duties of the co-ordination of the consultants' work or the duty of quality control or duty of care or any other duty set out in any of the SACAP documentation.

2.4.3 The Departmental Professionals

It is the duty of the Architect to liaise with the Departmental architects and/or other professionals from time to time and to see to it that the other professionals appointed on the project similarly liaise with the respective Departmental professionals. A list of names of the Departmental professionals and contact persons concerned with the particular project will be made available by the Departmental Project Manager.

2.5 Principal Agent and Agency

In general terms the law of agency in South Africa regulates the performance of a juristic act on behalf or in the name of one person ("the principal") by another ("the agent"), who is authorised by the principal to act, with the result that a legal tie (*vinculum juris*) arises between the principal and a third party, which creates, alters or discharges legal relations between the principal and a third party. In legal contexts, the word "agent" is most commonly used of a person whose activities are concerned with the formation, variation or termination of contractual obligations, and that agency has a corresponding meaning. It is the agent's position as the principal's authorised representative in affecting the principal's legal relations with third parties that is the essence of agency.

2.5.1 Delegation

Certain powers in terms of this agency are limited. The Employer retains the authority in respect of the following:

- Appointment of nominated subcontractors
- Granting of extension of time and/or ruling on claims associated with claims for extension of time
- Acceleration of the rate of progress and determination of the cost for payment of such acceleration
- Rulings on claims and disputes
- Suspension of the works

- Final payment certificate
- Issuing of *mora* notices to the Contractor
- Cancellation of the contract between the Employer and Contractor

Thus the Principal Agency has limited authority. See later section on Contract Instructions/VO's. The delegation of authority may change from time to time. The Departmental Project Manager must be asked to clarify delegations should the need arise.

2.5.2 Duties of the architect – Principal Agent

Unless otherwise stated in the documents of appointment, it shall be construed that, the Architect will act as the Principal Agent of the Department along with the privileges and duties aligned therewith. The Principal Agent shall, inter alia, co-ordinate the architectural design as well as the work of the other members of the professional team and incorporate and reflect their requirements in the architectural documentation. These endeavours shall be monitored and facilitated by means of regular meetings with all consultants.

The duties of the principal agent throughout this contract, over and above those as design architect will include inter alia:

- concluding a Service Level Agreement (contract) with the Department of Public Works
- receiving of instructions from the departmental project manager and distributing to the relevant parties
- co-ordinating the work of the consultants
- compiling and updating the project execution plan (PEP)
- co-ordinating and arranging site meetings and inspections
- liaising with the client department only if specifically so instructed
- liaising and co-operating with the Departmental Project Manager
- furnishing of monthly project reports
- issuing of written instructions
- receiving notices according to the building contract
- issuing of monthly interim payment certificates, final payment certificates for practical and final completion and advise on the release of Guarantees
- making recommendations in respect of the extension of the building contract period and periods where penalties are applicable
- administration of building contract and inspection of the Works in accordance with the requirements, where applicable, as set out in Manual for Private Architects PW 147, and
- other duties not listed above but which could reasonably be expected of the architect as principal agent as well as those duties listed in the SACAP Scope of Work/Standard Service
- actions required by the National Environmental Management Act. See Addendum B for an outline of these responsibilities

2.5.3 Duties of the architect – Not Principal Agent

Where the architect is not appointed as principal agent, the following duties shall nevertheless apply:

- Co-ordination of the architectural design as well as the work of the other members of the professional team and the incorporation and reflection of their requirements in the architectural documentation
- Reception of instructions from the principal agent
- Liaison with the user department if specifically so requested
- Issuing of written instructions applicable to the architectural discipline
- Receiving notices in accordance with the building contract
- Issuing of monthly interim payment certificates, final payment certificates and certificates for the various stages of completion if delegated to do so
- Making recommendations in respect of the extension of the building contract period and in respect of penalties
- Administration of the building contract and inspection of the Works
- Other duties not specifically mentioned above but which could reasonably be expected of an architect as well as those listed in the SACAP documentation pertaining to the work of an Architect.

2.6 Confidentially and security projects

All projects, regardless of their nature, should be regarded with confidentiality and their planning and design should not be discussed with, made known or made available to third parties.

The Departmental project manager will advise in the event of certain projects requiring security clearance of the consultants and/ or contractor(s). These projects should be treated with due care and security as required by South African Security Agency (SASA) and SAPS. The Departmental project manager will arrange meetings with SAPS (Security Advisory Services) and SASA on a project driven basis in order to inform the consultants of the latest requirements in that regard.

SAPS and SASA shall in the above event be part of the planning and approval processes and shall be afforded the opportunity to express security needs by way of additional written or verbal information. Their technical inputs shall serve as the basis of instruction regarding security matters, to both the Architect as well as the security specialist, if appointed.

The principal agent shall consult with the Interdepartmental Security Coordinating Committee (ISCC) regarding approvals and planning. The ISCC is located within the Chief Directorate: Security Management Services.

2.7 Duties in terms of the OHS Act

The architect is usually initially appointed as the Principal Agent in terms of the client/architect agreement for a building project. When operating as such, the OSH Act requires that the architect then also act as the Health and Safety Agent. An OHS agent may be delegated to carry out certain functions.

See Addendum A for a review of duties of the PA and a summary of the responsibilities of an Architect as Health and Safety Officer in terms of the Occupational Health and Safety Act (Act 81 of 1993 as amended)

2.8 Appointment of other consultants

The other members of the professional team, such as but not limited to, engineers, quantity surveyors, and specialists, such as acoustic and façade consultants etc. are usually separately appointed by the Department and will be briefed by the Departmental Project Manager. The architect may be requested to attend the briefing meeting(s) after which he should set up his own consultant co-ordination meetings.

2.9 Communication / recording – minutes

The language of preference shall be English which should be used in all correspondence, minutes of meetings and all drawings. Communication should be precise, explanatory and technically accurate.

The Principal Agent shall follow up in writing all verbal communications, i.e. telephonic discussions, meetings, specifications and instructions. Due minutes shall be kept of all meetings and distributed to the Departmental project manager, consultants, specialists and all attendees, within one week of the date held. The Departmental project manager shall be kept informed in writing of developments concerning the project, inclusive of meetings with consultants. Consultants are required to channel their enquiries to the Department via the Principal Agent.

2.10 Use of reasonable skill and care

It will be expected of the Architect to apply reasonable skill and due diligence in the execution of the duties and not limited to those stipulated in this document which shall include inter alia the items listed elsewhere in this manual and in the SLA/Letter of Appointment.

2.10.1 Scrutiny of work

Although the Architect's documents may be scrutinised by the Department, this shall in no way relieve the Architect of professional responsibility for the proper and prompt execution of his duties. The Department shall also be entitled to have any documentation or calculations verified by Others. In the event of mal-performance, default or negligence, the Department shall have the right to claim compensation or damages and offset such against any amount payable.

2.11 Multiple appointments/ Firms in Association or Joint Ventures

The Department may in its discretion, appoint Firms in Association or Joint Ventures for the professional duties related to a project. The Department may in its discretion, appoint a lead firm that shall act as principal agent, but in the absence of such appointment, the Firms in Association and Joint Ventures shall appoint a lead firm from their ranks to act as principal agent. This appointment is to be communicated to the Department Project Manager in writing.

Attention is drawn to the formalised agreement that shall be reached between Firms in Association as set out in the Letter of Appointment and/ or the Architects' Tender for Fees document. It is imperative that a formalised agreement shall be in place prior to the

commencement of architectural work. A copy of the signed formalised agreement is to be sent to the Departmental Project Manager for record keeping.

2.12 Scope of architectural work: Summary of services

The Architect shall render professional services in order to find solutions to the Brief that are functional, cost effective, environmentally responsive, energy and water saving, aesthetically acceptable, low in maintenance and architecturally accountable.

Unless otherwise stated in the documents of appointment, duties will cover the full field of architectural functions. These are briefly, but not exhaustively, summarised as follows:

- Establishment of an effective liaison with all other consultants
- Appraisal and definition of the project
- Design concept
- Design development (Sketch Plans) inclusive of dimensions, heights and materials. Work stage 3 is considered at the Sketch Plan Committee.
- Technical documentation
- Contract administration and inspection
- Manuals and operational training

The DPW broadly follows the SACAP work stages. Due to DPW procedures the work demanded in some stages may well overlap with a preceding or succeeding stage but the overall work is of the same order. Many DPW projects are for the refurbishment and renovation of buildings which demand a slightly different work flow. In some instances Departmental Professional Services may have already prepared documents. Full services shall include, but are not limited to, the following:

- New projects
- Repairs, renovations, adaptation, alterations, upgrading and refurbishment
- Restorations; (specialist Architect appointment)
- Discussions and negotiations with the executive officer of the local authority, including the ascertainment of statutory or town planning and building clauses, or any statutory authority, including the submission of a full set of drawings to the same for approval (as contemplated by the Act) by the Building Control Officer or for “information” or “comment” only in terms of section 2(3) of the National Building Regulations and Building Standards Act, 1977 (Act No. 103 of 1977), subject to provisions of section 2(4) of the said Act. Where security is a requirement of the design and/or the documentation, the correct procedure in respect of the liaison with the local authority should first be established with the Departmental Project Manager
- Community participation workshops and meeting with the community or its representatives. These may attract additional fees or may be considered as a disbursement. The Architect should address this in writing through the Departmental Project Manager prior to rendering the service.
- Services as Principal Agent throughout this appointment with special reference to the co-ordination and control of progress, quality and financial matters

- Energy conservation by way of the design of buildings with good passive thermal characteristics, north/optimum orientation and sufficient natural light and ventilation
- Inspections and surveys of existing buildings which may attract additional fees
- Purpose made items of architectural nature that will form part of the building contract
- Graphical work associated with any signage for the project i.e. name, number and notice boards as well as safety and fire escape signs according to the requirements of the National Building Regulations and NOSA
- Quality control and quality assurance
- Demolitions. Demolishing of State owned buildings requires a motivation from the Architect according to the prescripts of the Department.
- The Architect shall evaluate tenders in consultation with the Principal Agent (if the Architect is not the Principal Agent) and the professional team and compile and submit a tender report via the principal agent in the prescribed format to the Departmental Project Manager. During this process the Service Provider will maintain confidentiality of information and not negotiate with any tenderer without written instruction from the Departmental Project Manager
- Any major work contemplated by the Architect in terms of insolvency or liquidation of a contractor, such as:
 - Inspections and surveys of the Works
 - Compilation of defects lists
 - Alterations to drawings to reflect defective work
 - Variations to drawings for the letting of a new contract
 - Meeting attendance over and above those that would have been necessary in the normal execution of the contract

must be referred to the Departmental Project Manager for a decision in writing as to the specific appointment of the Service Provider in this regard, and in regard to the remuneration thereof before any work is contemplated in this regard. The Architect will be expected to be pro-active in protecting the Employer's interest with regard to this item and advise the Project Manager from time to time regarding the matter.

Actions not required, as listed above, are considered minor work which the Service Provider may undertake in the event of the insolvency or liquidation of a contractor – which may be necessary to protect the Employer's interests in terms of the building contract – shall be deemed part of the standard services, and part of the normal remuneration.

2.13 Work Stages

The various stages of standard services for which the Service Provider is responsible are, for the purposes of departmental work, defined as below. The SLA takes precedence over the general guideline as set out below.

2.13.1 STAGE 1: Inception

Guidance to professionals

SACAP lists the following as the “essential functions” of a standard service:

- *Receive, appraise and report on the Department’s requirements with regard to:*
 - *The clients brief*
 - *The site rights and constraints*
 - *Budgetary constraints*
 - *The need for consultants*
 - *Project programme*
 - *Methods of contracting*

In respect of Construction of new projects, additions, adaptations, alterations and upgrading

Receive, appraise and report on the Department’s requirements/briefing with particular regard to accommodation particulars, site information, planning and statutory requirements.

Report, in collaboration with the professional team, on the Approved Accommodation Requirements and Funds. Compile a cost plan and submit a detailed execution programme for the project. Review the need for other consultants other/additional than/to those that have been appointed by the Department to the professional team.

Prepare a Preliminary Project Execution Plan – see elsewhere in this manual

Deliverables:

- Report, in collaboration with the professional team, on the Approved Accommodation Requirements and Funds.
- Compile a cost plan and submit a preliminary Project Execution Plan for the project.

In respect of repairs and renovations, rehabilitation and restoration projects

Receive, appraise and report on the Department’s requirements/briefing with particular regard to:

- the extent of defects/damages
- proposed methods of remedy (brief works statement)
- preliminary cost estimate of proposed remedies
- Preliminary Project Execution Plan – see elsewhere in this manual

Deliverables:

- Report, in collaboration with the professional team, on a concise “Repairs and Renovations Report” or a brief works statement.
- Compile a cost plan
- Preliminary Project Execution Plan for the project.

Note: A Departmental Guideline is available for the abovementioned types of projects which lists the documentation required at each stage of submissions and for Sketch Plan approval submission

2.13.2 STAGE 2: Concept and viability (concept design)***Guidance to professionals***

SACAP lists the following as the “essential functions” of a standard service:

- *Prepare an initial design and advise on;*
 - *The intended space provisions and planning relationships*
 - *Proposed materials and intended building services – including the site*
 - *The technical and functional characteristics of the design*
- *Check for conformity of the concept with the rights of the use of the land*
- *Review the cost estimate and budget*
- *Review the project programme*

In respect of the construction of new projects, additions, adaptations, alterations and upgrading type projects

Advised by building professionals/ Service Providers from other disciplines, if any appointed, prepare suitable drawings indicating space provision, planning relationships, standards of materials intended to be used and standards and suitability of services, in sufficient detail to enable the design to be approved by the Client Departments. These approvals by Client Departments may be sought from personnel who are not technically orientated and drawings must present enough detail such as basic room sizes, furniture, fittings and finishes but must remain clear enough to be interpreted by non-architecturally trained people. Likewise the relationship with the site must be show with access (human and vehicular) and parking shown.

As agent for the Department the Architect will ensure compliance with all applicable legislative prescripts and incorporate same in the design concept. Obtain the relevant statutory authorities comment on the proposed concept design, evaluate same and include in final sketch plans.

Deliverables:

- Report, in collaboration with professional team, on project execution
- Drawings in appropriate scale and detail to enable the Client and Public Works Departments to approve the conceptual design of the building(s)

In respect of repairs and renovations, refurbishment, rehabilitation and restoration projects

Advised by building professionals/ Service Providers from other disciplines, if any appointed, prepare a comprehensive Status Quo Report together with suitable photograph evidence, drawings and other appropriate material of the building(s). This Status Quo Report is to fully describe all remedial work required to return the building to a good condition of service. The report should detail a work description to achieve the above. Information must be specific to the building and its site and give reasons why the work is required. Generic statements such as “replace roof or ceilings” without photographic and / or written motivation is not acceptable. Likewise statements such as “repair cracked wall” is not acceptable as it does not address the underlying reason for the cracking.

If the above is to include aspects of capital expenditure in order to achieve a good condition of service, these must be noted, reported separately and estimated separately.

Deliverables:

- Status Quo Report
- Cost estimate
- Scope of Works document in accordance with Departmental guidelines – see separate document

2.13.3 STAGE 3: Design development***Guidance to professionals***

SACAP lists the following as the “essential functions” of a standard service:

- *Confirm the scope and complexity*
- *Review the design and consult with the Local and statutory authorities*
- *Develop the design, construction system, materials and components*
- *Incorporate and coordinate all services and the work of all consultants*
- *Review the design, costing and program with the consultants*

This is the stage at which the Department will either accept, accept with conditions or reject the work of the professional team in a formal meeting known as the Sketch Plan Committee

Meeting (SPCM). Fees are claimable for the project after acceptance by SPCM and therefore this is a significant project milestone.

In respect of new construction, additions, adaptations, alterations and upgrading

After noting possible comment by the Department's Professional Services and possibly the User Department, prepare 1:100 scale preliminary working drawings, sufficient for service providers from other disciplines and specialists to proceed with their planning and to co-ordinate all work and services. If no drawings are available then "as-built" documentation is required and measuring-up on site is required.

Discuss the design with the statutory authorities, including local authorities, amend drawings if necessary and supply copy of full set of drawings to relevant statutory authorities and local authorities for final comment and/ or approval as may be required.

Architectural drawings are to show room dimensions, all furniture and fittings, materials to be used, annotations as appropriate and appropriate construction notes. Preliminary schedules may be required by the Department at this stage to finalise its comments. The Specification, according to PW371-B is generally not required at this stage.

Sections with dimensions and heights are required.

Review the budget and time schedule.

Deliverables:

- Comprehensive sketch plans
- Cost estimate
- Project Execution Plan
- Certification that the project complies with the Approved Accommodation Requirements and Funds document

In respect of repairs and renovations, rehabilitation, restoration and refurbishment projects. May not be applicable to restoration projects

After approval of the Status Quo Report or the Repairs and Renovations Report, inspect the building(s) in greater detail and prepare 1:100 scale preliminary working drawings, sufficient for service providers from other disciplines and specialists to execute their planning and to co-ordinate all work and services. Review the budget and time schedule.

Architectural drawings are to show room dimensions, all furniture and fittings (if applicable), materials to be used, annotations as appropriate and appropriate construction notes. Preliminary schedules may be required by the Department at this stage to finalise its comments. The Specification, according to PW371-B, is generally not required at this stage.

Sections with dimensions and heights are required.

Review the budget and time schedule.

Deliverables:

- Comprehensive plans, sections and elevations
- Cost estimate
- Project Execution Plan
- Certification that the project complies with the Approved Accommodation Requirements and Funds document
- Status Quo report should be included when submitting to the Sketch Plan Committee although it is a deliverable of the previous stage

2.13.4 STAGE 4: Documentation and procurement***Guidance to professionals***

SACAP lists the following as the “essential functions” of a standard service:

4.1 Prepare documentation for Local Authority submission:

- *Coordinate technical documentation with the consultants and complete primary documentation*
- *Prepare specifications for the works*
- *Review the costing and programme with the consultants*
- *Obtain the client’s authority and submit the documents for approval*

4.2 Complete construction documentation and proceed to call for tenders:

- *Obtain the client’s authority to prepare documents for procuring offers for the execution of the works*
- *Obtain offers for the execution of the works*
- *Evaluate offers and recommend on awarding the building contract*
- *Prepare the contract documentation and arrange for the signing of the building contract*

Applicable to all projects

Finalise full working drawings, schedules and specification and other technical documents necessary for the execution of the project. Co-ordinate the work of all service providers throughout the project and monitor progress in accordance with the agreed time schedule. Certify Approved Accommodation Requirements and Funds document as described below under the heading “Approved Accommodation Requirements and Funds document /Space and Cost Norms”, if applicable.

Generally the Department of Public Works compiles the tender documentation using its own specific documentation and formalities. The Department then convenes a Bid Specification Committee that review the Bid or tender documentation.

Upon the closing of the tender or bid the Department convenes a Bid Evaluation Committee to evaluate the bids received according to the criteria advertised in the bid. This committee recommends a contractor to a Bid Adjunction Committee for the award of the contract. The professional team may be required to make inputs during these procedures.

Call for tenders and/or negotiate the building contract where required. Note that it is more usual for the Department to call for tenders.

Advise the Department regarding the award of the building contract (and sub-contract(s)) and the completion of contract documents. Compile a Risk Assessment of the preferred bidder if required. The professional team is responsible for the contract data for the completion of the building contract.

2.13.5 STAGE 5: Construction

Guidance to professionals

SACAP lists the following as the “essential functions” of a standard service:

- *Administer the building contract*
- *Give possession of the site to the contractor*
- *Issue construction documentation*
- *Initiate and/or check sub-contract design and documentation that are appropriate*
- *Inspect the works for conformity to the contract documentation and acceptable quality in terms of industry standards*
- *Administer and performs the duties and obligations assigned to the principal Agent in the JBCC building contract, or fulfil the obligations provided for the other forms of the contract*
- *Issue the certificate of practical completion*
- *Assist the client in obtaining the occupation certificate*

Applicable to all projects

Administer the building contract as set out in Chapter 6 of this manual and generally assist the Departmental Project Manager with the project. Inspect the works to ensure that the State receives value for money in terms of quality to generally acceptable standards.

The Architect's duties shall specifically include the administration of the building contract and inspection of the Works during construction in such a way and at such times as will ensure that the Works are being executed in accordance with the building contract documents. The tendering Architect's duties also include the certification of the acceptance of materials and workmanship for the issue of payment certificates in favour of the contractor prepared by the quantity surveyor, the issue of architects instructions/site instructions/contract instructions as may be necessary and generally to safeguard the Department's interests under the building contract.

Coordinate the work of the professional team and scrutinise the contractor's and subcontractor's shop drawings.

Note that the compilation of site meeting minutes is not regarded a supplementary service and no additional remuneration will accrue to the Architect as the PA.

Deliverables:

- Documentation such as minutes of site and other on-site coordination meetings
- Interim payment certificates
- Lists of faults
- Certificate of Practical Completion as per the conditions of the building contract
- Documentation generated in terms of the specific form of contract (CI's etc.)

2.13.6 STAGE 6: Close-out

Guidance to professionals

SACAP lists the following as the "essential functions" of a standard service:

- *Facilitate the project close-out including the preparation of the necessary documentation to effect completion, handover and operation of the project*
- *When the contractor's obligations with respect to the building contract have been fulfilled, the architectural professional shall issue the certificate related to contract completion*
- *Provide the client with as-built drawings and relevant technical and contractual undertakings by the contractor and sub-contractors*

Applicable to all types of projects

Provide the Employer with "as built"-drawings and the relevant technical data such as manuals, in the prescribed format, for equipment, services and materials installed in the building from suppliers when the building is completed. The Architect must coordinate the Building Manuals with the professional service providers in all disciplines.

The Architect/Principal Agent must coordinate the documentation required to facilitate the finalisation of the Final Account. It is the experience of the Department that this process take more time than is desirable and hence the PA must set realistic time allocations and these must be adhered to by all concerned.

The PA is to issue the completion certificate of Final Completion as per the conditions of contract.

Deliverables:

- Documentation; “as built” drawings
- Building Manuals
- Certificate of Final Completion
- Final account

2.14 Partial Services

Architects may be appointed for partial services. The specific provisions and duties relating to these appointments should be fully described in the tender document or bid specification document. It is expected of architectural professionals to adhere to the same levels of expertise, integrity and ethics as in any other appointment. The applicable letter of appointment should be used as the base document and should describe the deliverables required from the architectural professional in such appointment.

CHAPTER 3 – INCEPTION AND DESIGN DEVELOPMENT

3.1 General preamble

The State through its Department of Public Works subscribes to the principle of sustainability and sustainable development. The State is signatory to numerous international protocols and agreements and in so doing confirms its commitment to the principles of sustainability in the South African context.

Sustainability is the concept that encompasses the concepts of the maintenance and enhancement of environmental, economic and social resources and must not be restricted to be understood to mean green and energy efficient architecture only. It is expected of architects to understand the underlying theory and approach to sustainable architecture and building and to advise the Client Department (and the DPW) on how to promote this. All buildings must be designed to:

- Be fit-for-purpose. This design parameter is expanded upon in subsequent sections.
- Be inherently flexible and be able to respond to changed requirements and future needs during the progression of time
- Take the general context of the location into account in terms of urban design, availability of local materials, skills of local labour, context of local economy and the context of the local social culture
- Require low levels of periodic maintenance
- Conserve energy
- Conserve water
- Conserve materials
- Reduce and manage waste
- Produce an acceptable level of indoor environmental comfort for the inhabitants of the building which is interpreted to encompass;
 - Thermal comfort
 - Acoustic control commensurate with building typology
 - Materials that are safe and are low VOC emitters
 - Water supply which is uncontaminated

Designers and their consultants therefore need to be focussed on the sustainability of buildings throughout the design, documentation and construction phases of the entire project. It is of little value to the State to entertain high level concepts incorporating sustainable design only for this to be rendered ineffective during subsequent stages of the project.

Standards and legislation governing the built environment include the National Building Regulations, standards developed by the South African Bureau of Standards (SABS) and the Occupational Health and Safety Act. These are being continuously improved to reflect local needs and international best practice. Increasing concerns about sustainability are likely to lead to more stringent performance requirements within the areas of water and energy consumption as well as access for people living with disabilities.

3.1.1 Batho Pele

The Batho Pele policy sets out standards that government should maintain with regard to service delivery. These standards include value for money, the setting of specific service

standards, courtesy, consultation and access. There are clear implications of this policy for the design and management of government buildings, including:

- Providing adequate, well designed and clearly signposted reception and public service areas so as to enable the general public to access required services promptly and effectively; and,
- Ensuring all facilities used by the general public can easily be used by everyone, including senior citizens and people with disabilities.

Designs must be monitored and approved by relevant Built Environment Professionals of the Department responsible for the provision of the accommodation to ensure that the building will be practical, effective, efficient, cost-effective and value for money.

3.2 Convention of the briefing meeting

The principal agent shall, upon acceptance of the appointment, arrange to meet with the Departmental Project Manager in view of an inspection of the site and further briefing.

3.2.1 Brief / Scope of Works

The professional team should be provided with a comprehensive brief by the Departmental Project Manager which outlines the requirements of the Department / client department. The architect is to review the brief and make recommendations to the DPW Project Manager to address any possible shortcomings in the brief and for any supplemental information that may in the opinion of the Architect and the professional team, be required to successfully execute the project. This may include any further facilities and accommodation or further work that is in the opinion of the architect, required to provide a building that is fit for the purpose which it is intended. This opinion of the architect is to be motivated in writing to the Department Project Manager and the Departmental Architect.

The brief document should contain, at least the minimum information indicated below:

- The overall objective of the project in terms of
 - Renovation
 - Repairs
 - Additions
 - New work to be executed
 - General description of the project
- Accommodation list of:
 - rooms with sizes
 - number of people/functions to be accommodated
 - all storage
 - ancillary accommodation
 - parking requirements and secure parking for VIP officials and State owned vehicles
 - access and parking for special vehicles e.g. at police stations, military installations etc.
- Standard design requirements and norms that are applicable to the design e.g. police 5-star design norms
- Anticipated life span of the building / facility

- Specific maintenance issues relating to location (e.g. high corrosion areas) that need to be addressed
- Any issues relating to materials e.g. materials to be matched to existing, heritage materials to be preserved etc.
- Extent to which repairs / renovations are required to upgrade the building to current National Building Regulations.
- Specific security requirement over and above generally accepted access control to State buildings
- Budget for the project and cash flow projections for projects that span multiple budgetary cycles
- Time scheduling for the project including any phased handovers that may be required
- In the case of repair / renovations will any part of the building remain occupied and are there any restrictions to the working hours of potential building contractors
- Any specific goals in terms of energy targets other than those required by statutory compliance, such as the installation of PV panels etc.
- Any specific goals in terms of water usage other than those required by statutory compliance
- Any environmental, social or economic targets such as Green Star Rating or any other rating tool.
- Any meetings with the local community and its representatives as part of community engagement must be addressed in the brief.
- The need for any special surveys, including but not limited to Environmental Impact Assessments, Historical Impact Assessments, Social Impact Assessments, Geotechnical Surveys and the like.
- Protection of Heritage Artefacts contained in the building(s) that cannot be removed.
- Site specific restrictions that may apply

3.2.2 Briefing meeting.

The Briefing Meeting shall be chaired by the Departmental Project Manager and will be attended by a representative of the client / user department where possible. Representatives of all professions appointed to the project shall also attend. The keeping of minutes and the distribution thereof within 1 week of the meeting shall be the responsibility of the Principal Agent.

It will be required of the Principal Agent to, at the end of briefing meeting or shortly thereafter, advise the Departmental Project Manager on the suitability of the site for the purpose intended. To this end, the principal agent shall be advised by all the consultants, including the architectural discipline, regarding the suitability of the site from the viewpoint of their particular discipline.

3.3 Inception and feasibility of the project

The Architect and the professional team is to proceed with due diligence with the necessary investigations, feasibility and viability studies to commence with Stages 1 and 2 of the project as outlined in this Chapter 2 of this manual.

3.3.1 Site considerations

Each site is carefully analysed to address the unique environmental opportunities, such as solar gain, wind harvesting, views, as well as natural and man made features.

Sustainable Strategies considered in response to site and climate include proper building orientation to maximize the structure's passive heating and cooling capacities, building shape and form to capture (or provide shielding from) prevailing winds, and roof configuration alternatives for rainwater catchment, solar control, and natural daylight and ventilation opportunities.

3.4 Local Authority

Except where express conditions are laid down by the Department, the architect shall consult with the responsible officer in the Local Authority as well as the local community to establish attitudes to the design proposal and take due note of any advice which may be offered. The outcome of the consultation process shall be reported to the Departmental Project Manager.

The Principal Agent may request the Department to appoint a professional land surveyor to undertake a comprehensive survey of the site, indicating boundaries, contours, salient features and any/ all information required by the members of the professional team to carry out the stipulations of their contracts/ appointments.

3.5 Site: demarcation and suitability

It will be expected of the Architect to report at the briefing meeting on the suitability of the site for the project from an architectural point of view, including not only adequacy of size and topography, characteristics and nature of the site itself, but also whether the site is considered to be suitably located for its purpose. The relationship of the site to its environment shall furthermore be highlighted. The site clearance procedures and documents are available from the Directorate: Town-planning shall have reference.

The Department by way of its Project Manager shall issue the Principal Agent with a surveyor's diagramme of the site and will point out the boundary pegs at the initial meeting on site. The Principal Agent shall be responsible for obtaining all other site particulars which may be required for the design and execution of the project.

The Principal Agent shall be responsible for obtaining a Site Clearance Certificate from the Director: Town-Planning Services and the professional team under his/her guidance shall compare the information contained therein with the actual conditions on site and the information available from the Local Authority. Any discrepancies shall be reported to the Departmental Project Manager for further action prior to commencement of planning work.

If there is no Site Clearance Certificate available or required for the project, the Principal Agent shall nevertheless obtain a copy of the Title Deed(s) of the property and:

- Verify that ownership is in the hands of the State
- Determine any restrictive clauses and conditions appertaining to the site

- Determine if any notarial deeds/ties exist
- Determine if any servitudes, rights-of-way or any other restrictions are registered on the site
- Determine if the site is a single or multiple land parcels that require consolidation

The Principal Agent is to formally report any problems relating to the above to the Departmental Project Manager for resolution.

The Principal Agent shall, in consultation with the other consultants, inter alia, verify the following salient particulars as detailed on the applicable Departmental form:

- Levels, dimensions, orientation and view
- Physical features, their size and positions, i.e. rocky outcrops, water streams, etc.
- Salient vegetation, i.e. prominent trees, groups of plants, protected species etc.
- Means of access to the site and restrictions thereto
- Adjoining properties, roads and buildings
- Site services with sizes, capacities, positions and depths of subterranean services as well as
- Servitudes and encroachments
- Regulations of local authorities, including restricted materials, floor space ratio, height restrictions, coverage, building lines, etc.
- Occurrence and direction of wind
- Average rainfall along with rainy season
- Local availability of building materials
- Cost implications

3.5.1 Demolitions

The Department has formal processes to approve the demolition of any State property. No State property may be demolished without approval from the accounting officer of the Department.

3.6 Site: Technical considerations

3.6.1 Geotechnical

The Principal Agent (architect) shall be advised by the structural and/ or civil engineer regarding soil conditions, the necessity of a geotechnical survey and the outcome thereof. Should such an engineer not have been appointed, the Principal Agent shall consult with the Departmental Project Manager regarding ways of obtaining such information.

The outcome(s) of the geotechnical survey shall be duly considered by all consultants in the preparation of their designs and resulting documentation. The findings of the survey potentially inform:

- Building typology – single or multi storey solutions
- Design, depth of, and foundation type
- Extent of excavation and fill

- Estimated percentages of hard rock, soft rock and soil which is to be made available to the consulting quantity surveyor for estimation purposes
- Extent of potential movement of the structures anticipated

It is the responsibility of the architect to ensure that the team of consultants has all the information that they require in order to execute their work.

3.6.2 Dolomitic soils and related issues (illegal mining)

The State has many buildings and assets built on dolomitic soils and has risk management measures in place to identify, grade risk and manage new construction, refurbishment and renovation on dolomitic soils. Due to the strategic nature of some of these assets, for example military bases and police stations alternative sites cannot be considered. It is thus the responsibility of the professional team to strictly adhere to all the prescripts of the Department during the planning and execution phases of projects located on dolomitic land. The following must be noted:

- The appointed Principal Agent, Architect, Civil and/or Structural engineer and the Departmental Project Manager shall jointly and severally verify whether a proposed new site development and/or renovation, upgrade or repair is located on dolomite formation
- Whenever a site has been confirmed as located on dolomite, all architectural and sub-surface civil and structural engineering planning/design shall be performed conforming to and integrated with, all specified requirements as contained in the Dolomite Status Certificate (DSC), which certificate is issued by the Directorate: Civil & Structural Engineering (located at DPW Head Office in Pretoria)
- During the planning, design or execution (construction) stage of a project the Project Manager (PM), the consultant team and the contractor should be alert and/or be made aware to be pro-active in locating and/or detecting any trace or sign of the presence of dolomite
- Should any trace or sign of dolomite formation be found, it must immediately be notified and brought to the attention of the PM and the Directorate: Civil & Structural Engineering situated at Head office
- As and where applicable, appropriate designs/specifications/details for dolomite conditions should conform to the Department's manual titled: "Appropriate development of infrastructure on dolomite", Document PW 344
- Should there be any uncertainty about the presence of dolomite and/or unscheduled ground movement event, such enquiries should be referred to the Directorate: Civil & Structural Engineering at Head Office for further investigation and subsequent certification.

3.7 Services

Notwithstanding the fact that the Site Clearance Certificate issued by the Directorate: Town-planning Services determines the availability of bulk services the provision of sufficient capacity is to be verified by the consultant team. Due to scope creep the demand may eventually exceed the supply. Not all projects will require the issue of a Site Clearance Certificate issued by the Directorate: Town-planning Services and in these cases upgrades and extensions to buildings may exceed the capacity of services that are already supplied to the site by the Local Authority. **It is thus essential to check this with the Local Authority before work is put in hand.**

Excessive infrastructure cost must be reported to the DPW before proceeding with the project.

3.7.1 Electrical

It is the responsibility of consulting Electrical Engineer to determine the restrictions and requirements in respect of the electricity supply and to provide the Architect with the information which is required. The availability of the bulk supply is to be verified with the Local Authority. If no electrical engineer is appointed for the service the Architect is to verify the availability of supply with the Local Authority

3.7.2 Potable water

It is the responsibility of consulting Civil Engineer to determine the restrictions and requirements in respect of the potable water supply and to provide the Architect with the information which is required. The availability of the bulk supply is to be verified with the Local Authority. If no civil engineer is appointed for the service the Architect is to verify the availability of supply with the Local Authority

3.7.3 Sewerage

It is the responsibility of consulting Civil Engineer to determine the restrictions and requirements in respect of the sewerage disposal and to provide the Architect with the information which is required. The availability of the sewerage disposal capacity is to be verified with the Local Authority. If no civil engineer is appointed for the service the Architect is to verify the availability of sewerage disposal capacity with the Local Authority

3.7.4 Solid waste

It is the responsibility of consulting Civil Engineer to determine the restrictions and requirements in respect of the solid waste disposal and to provide the Architect with the information which is required. The availability of the solid waste disposal capacity and frequency is to be verified with the Local Authority. If no Civil Engineer is appointed for the service the Architect is to verify the availability of solid waste disposal capacity with the Local Authority

3.7.5 Storm water

It is the responsibility of consulting Civil Engineer to determine the restrictions and requirements in respect of the storm water disposal and to provide the architect with the information which is required. The availability of the storm water disposal capacity or on site attenuation is to be verified with the Local Authority. If no civil engineer is appointed for the service the Architect is to verify the availability of sewerage disposal capacity with the Local Authority

3.7.6 Information, Communication Technology (ICT)

The Architect must confirm with the Departmental Project Manager the ICT strategy for the particular project. The availability of data links to the Internet and on-line services must be considered during the inception phase. Whilst many projects in urban settings may have connectivity, projects in rural areas may not have suitable connectivity and this may influence site selection. ICT and security installations should preferably be an integral part of the building and form part of the building contract.

3.8 Project Execution Plan (PEP)

The principal agent shall, in consultation with the Consultants, set up a detailed programme for the design and documentation of the project, and oversee the strict adherence thereof by all Consultants. The Principal Agent shall furthermore execute financial control of the project throughout all stages of the work in consultation with the other consultants. The PEP must be formally issued to the Departmental Project Manager for distribution to Departmental professional staff. As with drawings, the PEP may be updated at any time and the changes made must be recorded in a table on the last page of the PEP. The updated PEP must be re-issued to the Department Project Manager as stated above.

The principal agent is responsible to the compilation of the Project Execution Plan (PEP) and may be aided by other members of the professional team. This is a very important document as it outlines the work to be done and commits the professional team to specific deadlines for the provision of their services as well as their view for the most beneficial execution of the project.

The following guide to professionals is based upon CiDB documentation and has been adapted for use by Built Environment Professionals.

Guidance to professionals

The following is offered as a template for the drafting of the PEP but it is in no way prescriptive and must be altered and expanded upon in accordance with the complexities of the project.

Purpose

State the purpose of the project which is to be realised. This should be a short condensed version of the scope of the project. This typically could be:

“Additions to mess of Pretoria Military Base to increase the capacity of the mess to serve 200 persons in 2 sittings.”

Mandate

Confirm the approval given to initiate the project. This section should record the appointment (whether by appointment or tender procedure) recording the name of the official who confirmed the appointment, date of the appointment, approval of funding and other pertinent information. Make reference to any client department project number or DPW WCS number. A copy of the official appointment letter should preferably be attached as an addendum.

Project Scope

This section should be a detailed view of the scope of the project. If the architect has been given a detailed brief it should be summarised under this section. If the brief is not

detailed enough or if the architect needs to expand upon or add to the brief it must be recorded under this section. It could be, for example, that the brief calls for the repair of cracking of walls in the brief but, upon closer inspection it appears that underpinning of foundations is required and that this will have an impact on both the budget and the schedule of the project, the architect must comment to it here. Additions to the schedule of accommodation must be recorded here and a full schedule of accommodation should be recorded under this section.

Objective/s

Any specific objective of the project should be expanded upon under this section. For example it could be the part of the terms of appointment to produce a Green Star Rated building, including the application of the mandatory DPW Expanded Public Works Program (EPWP) which calls for the employment of local labour, skills development, skills transfer etc.

Another example could be the design of an “A grade” accommodation in terms of some organisation or entity such as SAPOA.

Project Team / Institutional Arrangements

State who the project team will be, including all consultants and role players such as project managers – both Consultant project manager, if applicable, and the name of DPW Project Manager. Define all the roles that each will play as well as the responsibilities that accompany the role.

Further, list all other service providers and companies that may be required to render a service to the project team during the planning and procurement stages of the project – i.e. up to SACAP stage 4. These could also include specialists that may not necessarily be appointed by the DPW but those who will be remunerated on a disbursement basis.

Note in terms of good project management, single point accountability for each work component is essential i.e. who is the specific person/functionary responsible for each element. This is particularly important when consortia and Joint Ventures are appointed – who will be the spokesperson or person responsible within the Joint Venture. Any changes in this structure due to resignations, incapacity or for whatever reason whatsoever will require the submission of a new PEP to the Department of Public Works for notification and approval of changes to the project team. On large projects it may be desirable to recommend the employment of a Clerk of Works.

Procurement/Contracting Arrangements

Under this heading the strategy of procurement must be proposed. The Principal Agent must together with the project team make proposals to the Departmental Project Manager as to what contracting arrangements are required for the effective delivery of the project. These proposals must be based on their collective experience and considered view for the cost effective completion of the project. This part of the PEP will inform the Departmental Project Manager who together with other DPW officials will make the final decision.

For example on large contracts it may be necessary to have various contracts such as bulk civil work and the provision of bulk services precede the appointment of the building contractor. There may be several building contracts for different buildings or various phases of the contract. The following can be used to inform this section of the PEP:

- *Separate contracts for large projects; Civil works, bulk electrical services, building works, general contractors for smaller works etc.*
- *CIDB rating that will typically be required of contractors*
- *Form of contract proposed per contractor. GCC, JBCC, Negotiated contract and form (cost reimbursable), schedule of tariff type of contract (maintenance), turn-key type contracts, JV types of contract etc.*
- *Whether this PEP is for emergency type work or a conventional type of service*
- *Will contracting personnel be required to have security clearance*
- *What penalties make be considered appropriate*
- *Guarantees / sureties that make be required for the type of work being undertaken and options such as retention, institutional sureties etc.*
- *Insurance if the project is exceptional in terms of risk to the client*

Note: the Department of Public Works does not, in general, support separate contracts, provisional sums in contracts, nominated sub-contracts and opened ended / non-specific financial arrangements.

Any specific Terms of Reference for the contracting parties is to be included as an annexure

Project Stages

State the project stages from start to completion comprising the major work components and deliverables/results to be achieved within each work component. In terms of SACAP rules these work stages these are clearly defined with clearly defined deliverables. However, due to the complexities of a specific project there may be certain other actions and deliverables which need to be recorded here. Allowance must be made for Department approvals as required. Community/public participation meetings/workshops must be included in this section.

The work stages of any other consultants must be collated into a comprehensive flow diagram of the total project.

Financial Implications

State the project budget/QS cost plan and elaborate on the various components that make up the budget. This is to include:

- *Professional fees for all disciplines and per work stage*
- *Major cost items – estimated cost of the project at that stage*
- *Escalation*
- *Other services providers – surveys, geotechnical investigations*
- *Production of documentation, travel cost and all other disbursements*

- *Other cost such as community/public participation workshops*
- *Productions of manuals and other media*

Timetable / Project schedule

Provide a summary timetable of the actions to be undertaken from project inception to handover / completion. This is to be broken down into

- *Start date*
- *Duration*
- *Completion date*
- *Responsibility*

The project schedule is to make provision for Departmental approvals processes.

If appropriate back up the summary timetable with a detailed Gantt type chart or Critical Path Analysis

Monitoring and Reporting

State how the project will be monitored in order to ensure that it is on schedule. This section of the PEP should list Key Performance Indicators (KPI's) which will be used to monitor progress of the project team. This could include:

- *Cash flow monitoring*
- *Physical progress of project (product produced, time lapsed etc.)*

Furthermore state the reporting procedures by way of:

- *Co-ordination meetings (frequency and between what parties)*
- *Reports sent to Program Manager (frequency – weekly, bi-weekly, monthly etc.)*
- *Formal site meetings*

Risk Management

State the major risks that the project may encounter and how the risks will be mitigated (i.e. actions to reduce and manage the risks), who is responsible for each action. There may be actions outside the scope of this project that may pose a risk. For example another Department may be responsible for access roads, bridges or signing of contracts with neighbouring countries which may impact upon the project.

Quality Management

What actions will be taken to ensure the quality of the end products/results and how they will be assessed? This could include adherence to design protocols, specifications, measurement of works, peer review of designs / calculations etc. State when (at what stages) and by whom these will be managed.

Communication Management

State the communication plan for the project including:

- *Diagram showing who reports to whom and who will report to the Departmental Project Manager*
- *Medium of communication – email, mail, registered mail, courier*
- *Format of communication – reports, schedules, letters*
- *Target audience – summaries to management, detail technical report to team members/other disciplines*
- *Frequency of communication – monthly, bi-weekly, weekly, annually*
- *Procedures to acknowledge receipt of communication*
- *Costs involved for communication (courier)*
- *Confidentially / Security issues related to communication – confidential, secret etc. applicable for the project*
- *Retention period of records (filing and archiving of records – secure or not secure)*

3.9 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. Refer also to the Work Stages breakdown elsewhere in this manual.

This responsibility includes inter alia the following:

- Obtaining complete and correct site particulars.
- Compliance with the functional requirements of the Client Department.
- 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 liaison with the Project Manager.
- Compliance with the National Building Regulations and requirements of Local Authorities and other statutory requirements.
- Execution of the project within the stated Approved Accommodation Requirements and Funds 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 Approved Accommodation Requirements and Funds. Early engagement with DPW professionals is essential.
- 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. Early engagement with DPW professionals is essential.
- 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.
- Monthly reports to the DPW Project Manager and professional counterparts on progress during design, documentation and construction.

- Other (mandatory) reports as required from Project Manager to enable financial and progress reporting

3.10 Regulatory compliance

As mentioned under Legal Framework architects and architectural professionals, together with their appointed consultants, must comply with the current regulations in force at the time of going to tender. Any changes to the regulation that occur during documentation must be complied with unless exemption is obtained from the Local Authority and such exemption is approved by the DPW Project Manager.

3.10.1 National Building Regulations – Deemed-to-satisfy preference

National Building Regulations as promulgated by the National Building Regulations and Building Standards Act – Act 103 of 1977, as amended for time to time, must be complied with in all respects. This applies in particular to SANS 10400 – the Application of the National Building Regulations as the Department requires architectural professionals and consultants to adhere to the “deemed-to-satisfy” rules rather than to use rational designs in the projects that they carry out for the Department.

3.10.2 By-laws and town-planning regulations

Architectural professionals must comply with all Local, District and Provincial Authority, by-laws, ordinances, environmental, aesthetic requirements and town-planning regulations as amended from time to time and which relate to the specific local area in which the work is being performed. The head of Fire Services (and/or emergency services if combined) must sign off on the fire drawings.

This includes but is not limited to the following:

- Entrance and exit to site both for vehicles, including fire fighting and emergency vehicles and pedestrians
- Pedestrian crossings from adjoining streets
- Building lines
- Height restrictions
- Coverage
- Floor area ratios
- Drainage
- Potable water supply
- Solid waste disposal
- Storm water discharge and attenuation
- Fire water connections
- Positions of meters – both water and electrical (and others such as gas where applicable)
- Environmental parameters such as acoustics and sound levels at site boundaries
- Aesthetic parameters and restrictions of choice of materials.

Architectural professionals are required to familiarise themselves with these requirements. In the event that the architect considers that the by-laws, ordinances, environmental, aesthetic requirements and Town-planning regulations restrict the planning and design to an extent

which prevents making the most advantageous utilisation of the site or provision of the accommodation requirements, they are to have preliminary informal discussions with the responsible officer of the Local Authority with a view to the possible relaxation of the regulations which are deemed necessary or desirable. The results of such discussions must be reported to the Department, but no action is to be taken until such sanction is received in writing from the Departmental Project Manager.

3.11 The design

The architect, together with the professional team is to proceed to design the building (in the case of new work) or document the alterations, additions or refurbishment with diligence in accordance with the sentiments expressed in the preamble to this chapter. The architect is also referred to the chapter on Construction Requirements and in particular to the section on services.

Once a documentation programme for the execution of the project has been drawn up and agreed to (in terms of the PEP), the architect 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.

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

3.11.1 Adherence to brief

Architects and consultants are to adhere to the design brief and in particular to the Certified Accommodation Schedule as closely as possible. Architects may be asked to comment on the adequacy and suitability of the schedule of accommodation supplied to them on acceptance of the commission. Comments on any aspect of the project in the light of their professional knowledge and experience will be welcomed by the Department, not only at the briefing meeting, but also throughout the progress of work on the project as it develops, and architects are free to put to the Department at any stage their suggestions for the improvements of the project with regard to general or detailed planning and all aspects of design, construction, equipment, materials, finishes etc.

The accommodation requirements will be discussed in detail and the Client Department(s) will indicate the arrangement and interrelation of the elements thereof.

3.11.2 Design and Planning considerations – General

In the interest of the State, it is required that the planning and design of all buildings be directed to functionality, energy and water 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. This includes but is not limited to the following:

- Most advantageous siting of the building in relation to the ground formation, topography, natural assets of the site such as indigenous/endemic vegetation etc.
- The envelope of the building shall be designed to present a stable indoor temperature, with as little variation in diurnal temperatures as possible, in other words, the difference between indoor daytime and indoor night-time temperatures (internal swing) shall be kept to a minimum and should never exceed 5K. Massive construction with high thermal

mass is appropriate to achieve this aim. Lightweight construction may also be used where appropriate, subject to it being able to satisfy the functional requirement demanded of the building typology.

- Professionals who are employed to design buildings outside the borders of South Africa must perform the necessary climatological, contextual and localization studies before design commences.
- Most advantageous orientation of the buildings with regard to north-south aspect and climatic conditions such as prevailing winds, solar geometry, rainfall etc. Habitable rooms should orient towards north, in preference to all other points of the compass.
- Proper solar orientation shall have preference over pleasant view
- Most advantageous orientation of building with regard to both heat gain in summer and heat loss during winter. Consult SANS 204 for the optimum orientation of the long axis of the building.
- East and particularly west facing windows must be avoided or limited to the minimum required for ventilation and lighting. West facing windows must have external shading devices
- Day lighting and glare prevention should receive due attention by way of roof overhangs, louvres, solar glass and similar
- Design solutions that focus on the sustainability of buildings and inherent flexibility for future use
- 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
- Planning of low buildings in preference to high-rise, due regard being paid to site value and the surrounding area
- Planning of future extensions to buildings in the horizontal direction
- Use of fire-resisting materials of South African manufacture with low cost maintenance characteristics
- Minimising the use of basements, semi-basements and any part of a building that retains soil so as to prevent ground water ingress in to the building.
- Pitched roofs shall have preference over concrete roofs, due to cost and maintenance considerations
- All rooms shall have natural lighting and natural cross ventilation, to standards set in the National Building Regulations, or better except those where specific function requirements demand no natural lighting nor ventilation
- Air conditioning shall only be considered for technical and health reasons and/ or when specifically required by the user client
- If air conditioning is used, it shall be architecturally integrated with the design and due consideration shall be given to energy efficiency, fresh air supply, the reticulation of condensate and aesthetics. Split units mounted on the façade of buildings with bundles of ducting running along the façade will not be permitted
- Simply decreasing the size of windows without due consideration to day lighting and increasing the depth of buildings without due consideration of natural ventilation shall not be permitted

- 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:
 - 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 SANS 10400
 - Plan the entrances of lavatories for the different sexes so that they are suitably spaced and screened to prevent embarrassment
- 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. 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

Care should be taken to ensure that there is a good 'fit' between the organisation, its functions and the building. Organisations have many characteristics such as size, structure, culture, work patterns, change and internal and external relationships that should be matched with physical aspects of accommodation including size, layout, servicing and location.

3.11.3 Standards of Fittings and Finishes

Buildings should represent effective and efficient use of government resources. Standards should therefore, be reasonable and supportive of productive work, but not ostentatious or wasteful. Finishes and fittings must be uniform, durable and easily maintainable. Prestige properties and prestige areas of buildings may require fittings of a higher standard which must be agreed upon in consultation with Departmental Professionals at sketch plan stage.

3.11.4 Flexibility and Adaptability

Government buildings should be built to suit specific purposes. This consideration should be reflected in structural design, emergency egress, circulation and services strategies, layout design and in the selection of furniture. New government buildings should, as far as practically possible, be designed on a column and slab principle so that all brick walls or infill panels, can be removed without impeding the structural integrity of the structure.

For buildings above two storeys in height (i.e. ground floor + first floor)

- a concrete frame is the preferred structure
- composite structure, i.e. some concrete columns and some load bearing brickwork will not be permitted

3.11.5 Inclusivity of user requirements

All buildings used by government should be inclusive of all anticipated user requirements. This requires layouts, procurement and management processes to comply with environmental standards that enable a wide diversity of people to visit and work in the building comfortably

including senior citizens, parents, children and people with disabilities. These must align with User Requirements as set out in the Planning Instruction.

3.11.6 Service Delivery to the public

Where a government building has a component/accommodation which could be open to the general public, care should be taken to ensure that the building design enables appropriate environmental and service standards to be maintained. The design of the building should prevent the broad public from straying into restricted areas.

3.11.7 Certified accommodation schedule and norms

The Certified List of Accommodation Requirements coupled to the applicable Accommodation Requirements and Approved Funds and cost limits are the major control features employed by the Department. For this reason the architect must pay specific attention thereto. The Department of Public Works and the Client Department will ensure that the Certified Accommodation Requirements are correct. You are therefore required to comply with them and strictly adhere to the following conditions:

- 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 the architect may vary any one room size by 10% smaller or larger, provided such rooms are identified and specifically approved by the Client Department if smaller than required and provided that the total nett Certified Accommodation Requirements are not exceeded.
- Spaces must be functional and odd shaped rooms that do comply with area requirements but not functional requirements (such as desks and other furniture) are not acceptable.
- If any change to the Certified Accommodation Requirements becomes necessary for any reason whatsoever the architect may not incorporate such changes in the design until it is specifically authorised in writing by the Client Department and DPW.
- The Department will only consider authorising changes after receiving a written, motivated request from the Client Department.
- 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. Compliance must be certified by the PA.
- A summary of accommodation areas and deviations thereof must be submitted in a spreadsheet / tabular form at the SPCM.

3.11.8 Economic design and cost control

As far as costs are concerned, the major aim is to design all building projects as economically as possible – this must not be confused with “low-cost” which is not necessarily cost effective over the life span of the building or its components. Planning within a Departmental cost provision of a project is not necessarily cost effective if the required accommodation can be designed more economically.

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

Economy of design in terms of planning, simplicity of form (both 2 as well as 3 dimensional) and regularity of structure shall receive due attention and vast unused ceiling voids resulting from design features such as wide span mono pitch roofs will not be permitted. Spans and structural sizes of components shall be co-ordinated with the structural engineer and recorded on the sketch plans.

3.11.9 Approved Accommodation Requirements/Space norms

Space norms apply to all government buildings, as per the definition in this document, used by organs of State in South Africa. Space norms and cost limits are set for projects. 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 jointly and severally, be for the account of the Consultants. The space guidelines should be applied at particular stages in space planning and management processes of buildings. Designs must in all cases meet the requirements and needs of the client and the local authorities and must be practical, effective, efficient, cost effective and value for money. Cost comparisons are to be carried for different design options and selections made are to be motivated to the Department based on these estimates.

Where there are no space guidelines for specialised buildings, the designs must be monitored and approved by relevant Built Environment Professionals of the Department responsible for the provision of the accommodation to ensure that the building will be practical, effective, efficient, cost-effective and value for money whilst complying with Client requirements.

3.11.9.1 Open-plan accommodation

Open-plan accommodation for offices could result in a saving of between 15% and 20% of floor area compared with cellular office space. Open office planning is suitable for a large proportion of functions performed by Government. It is expected of the architect to support open-plan offices by the use of separate meeting and group work spaces. Some cellular offices may be provided where required, from a functional perspective. Particular attention should be paid to the acoustic qualities of open plan offices.

3.11.10 Space and Cost Planning and Control

The Department makes a financial provision for each of its projects for budgeting purposes only and architects are nevertheless to design as economically as possible even it is less than the budgeted for amount. An estimate of cost will be approved concurrently with the building design and in documenting the project architects are required to adhere strictly to approved cost and space limits.

Consultants are to apply cost control and provide elemental estimates at each Work Stage, adjusted to a common date and compared with the set limit(s). Cost reconciliation schedules are to be provided. Spaces and areas must also be checked and reconciled with the approved limit(s). All planning units referred to in the norms are to be provided and if these are not provided, this must be pointed out to the Project Manager and the Departmental Architect.

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

- prior to approval of sketch plans
- upon approval of sketch plans
- at completion of working drawings

- at completion of project

Whilst primary cost control occurs during the design stage, it serves to be noted that if the tender estimate exceeds the Sketch Plan estimate by 5% another SPCM will need to be held.

3.11.11 Amendments required to conform to space and cost limits

If, in designing a building, the architect unjustifiably exceeds the authorised cost limit, the architect shall be required to amend the documentation at own cost as required to comply with the cost limit/s. In addition, the architect will be held 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 the architect finds any difficulty in complying with this instruction he or she must consult with the Project Manager immediately for resolution of the problem.

3.11.12 Removal or substitution of uneconomical elements

Where the Department considers components, materials and/or finishes or other design features or constructional elements unnecessarily luxurious the Department reserves the right to require the Architect to amend the documents to substitute less costly elements. This will be without payment of any additional remuneration if not specifically indicated on the approved sketch plans, but incorporated in working drawings. This is not related to whether the agreed cost limit has been exceeded or not.

3.12 Consultation with Client/User Departments

As the Department of Public Works is most often not the occupier or user of the building, the architect is to arrange for discussions and coordination with the relevant client department or authority. This must be arranged via the Departmental Project Manager. The Client Department's role is to check functionality of the proposal by way of area, position of equipment, furniture etc. Any changes to accommodation, deviations from norms or planning are to be confirmed by the DPW before any changes are made to drawings and other documentation.

3.13 Acoustical requirements

Determine at the earliest stage of consultation and design if Client/User Department has specific requirements in terms of acoustic treatment of rooms. This may apply to:

- Courtrooms
- Conference / meeting rooms
- Open plan offices
- Lecture and training rooms
- Theatres and music rooms
- Workshops / testing rooms

These must be placed in quiet areas of the site or complex if possible and not adjacent to noisy streets. Other accommodation should be used to act as a buffer zone to noise sensitive rooms. Likewise noise generating rooms must be placed in areas of least acoustic impact.

It is the duty of the architect to undertake acoustic interventions and make these requirements known to the other consultants and in particular the Mechanical Engineer to limit structure borne sound. The Architect must coordinate acoustic interventions among consultants.

If the nature of the work is beyond the normal design capabilities of the Architect a motivation must be written to the Department Project Manager seeking the appointment of an acoustic specialist.

3.14 Natural lighting and natural ventilation

All rooms must be designed so that they have adequate natural light and natural cross ventilation. This requirement must be complied with even if rooms are air-conditioned or artificially ventilated as they must remain functional in the event of equipment failures or power outages. Compliance with Part O of the NBR is mandatory. Requirements for fresh air as set out in SANS 10400 O for the various occupancies listed is compulsory, even if independently controlled air conditioning units such as split units, console units or ceiling cassette units are used.

3.15 Structural requirements

If a structural engineer has been appointed to the project then structural requirements must be dealt with by him / her. This applies to structural elements that are reserved for design and supervision by a Competent Person as set out in SANS 10400. Conventional non reinforced strip footings, non-reinforced concrete surface beds and timber roof trusses that are designed to the deemed-to-satisfy criteria in SANS 10400 are the responsibility of the Architect (see also Chapter on Construction Requirements). Architects that wish to deviate from this practice must provide a well-motivated submission to the Project Manager. This submission requires approval by the Department before structural engineers may design these elements.

The Architect is to work with the structural engineer to coordinate and integrate structural requirements into the architectural design to provide a cost effective solution.

3.16 Electrical Services

If an electrical consultant has been appointed for the project then electrical requirements must be dealt with by him / her. It is essential that the Architect is to work with the electrical engineer to coordinate and integrate electrical requirements into the architectural design as applicable to:

- Sub-station size and position including access for equipment installation and servicing. Includes mini-substations and kiosks
- Accommodation for emergency generators, including adequate access for fuel delivery and servicing
- Lifts and conveyors
- Ducts sizes required for cabling
- Strategy for distribution of electrical services inside the building by way of floor based power trunking and cableways in ceilings
- Meters and sub-metering

Requirements must be verified by the architect at the inception and concept design stage.

3.16.1 Electronic and associated Services

If a specialist consultant(s) has been appointed for the project then specialised requirements must be dealt with by them. It is essential that the Architect is to work with the consultant to coordinate and integrate specialised requirements into the architectural design as applicable but not limited to the following. The Project Manager must advise whether these form part of the building contract or are Client Department installations

- Security control, CCTV cameras and associated cabling.
- Building Management Systems (BMS)
- Audio-visual equipment
- Recording equipment

3.17 Mechanical Services

3.17.1 Consultation

If a mechanical consultant has been appointed for the project then the mechanical requirements must be dealt with by him / her. This applies to all HVAC requirements as well as lifts, escalators, pumps and ancillary mechanical equipment. It is essential that the architect is to work with the mechanical engineer to coordinate and integrate mechanical requirements into the architectural design as applicable to:

- Plant room size and position including access for equipment installation and servicing.
- Positioning of plant within or on the building, including adequate access for installation and servicing
- Ducts shape and sizes required for ducting
- Position of fresh air intakes and return air
- Strategy for distribution of mechanical services inside the building by way of raised floor based distribution and ducting in ceilings
- Toilet ventilation – natural or mechanical ventilation
- Off peak heating and cooling and associated energy storage requirement
- Position of meters and sub-metering
- Fire – general detection and protection
- Fire – specialised gas suppression systems in archives

Requirements must be verified by the architect at the inception and concept design stage.

The architect is to determine and implement energy saving and energy efficiency strategies in collaboration with the mechanical engineer.

3.17.2 Noise and pollution control

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 economic 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.

3.17.3 Access and positioning on site

It is the duty of the architect to ensure that access to mechanical services is adequate:

- For installation and replacement of equipment
- So that equipment can be serviced and maintained with minimum disruption to the functioning of the building
- For delivery of fuel and other
- So that discharges of condensate from HVAC systems does not occur into gutters, on roofs and walkways and is done in a controlled manner to a suitable drainage system

3.17.4 Plant rooms for mechanical equipment and tank rooms

Where central air-conditioning or central heating rooms are required or are in existing buildings the following apply:

- The floors must be waterproofed and be provided with an overflow outlet provided to the exterior of the building to prevent flooding in the event of a water leak
- They must be located so as to minimise the length of pipe-runs and energy losses
- Must be provided with opening-out doors
- Adequate access for installation and removal of equipment

3.17.5 Kitchen design

If a specialist consultant has been appointed for the project then specialised requirements must be dealt with by them. It is essential that the Architect is to work with the consultant to coordinate and integrate specialised requirements into the architectural design.

3.18 Universal access

All State buildings must, as a minimum requirement, comply with the requirements of SANS 10400 – S in terms of access for the physically disabled. This is considered a minimum standard. The application of this standard is compulsory for all new projects and major refurbishment projects. The information document “Facilities for Disabled Persons” (PW 350) is available at www.publicworks.gov.za .

In line with DPW policy the following building typologies must also be made accessible to the disabled even if their scale is such that they would not need treatment under SANS 10400-S:

- Courts of Justice
- Magistrates courts and offices
- Clinics
- Police Stations
- Public areas at prisons
- Offices that have a public interface such as Department of Home Affairs and the like

3.19 Existing facilities

During assessment of any existing facilities, which may have a bearing on the Project, the Architect shall determine deficiencies and opportunities prevalent at such facilities in terms of the Occupational Health and Safety Act, 1993 (Act 85 of 1993), the SANS 10400, etc. and recommend measures to rectify those before or during the project execution phase, as may be appropriate to the rectification of the deficiency.

The Departmental Project Manager shall be notified by the Architect of any transgressions of either the OHS Act, the National Building Regulations or any other statutory compliance as soon as these become evident. For example it could be that User Departments have, during their tenancy removed walls or blocked up doors that impact upon fire regulations or emergency escape routes have become blocked. Environmental legislation requirements in terms of discharge of effluent may have become sub-optimal due to maintenance problems and the like. These transgressions must be reported to the Departmental Project Manager regardless of who may have been involved.

3.20 Buildings and artefacts of historical importance and National Monuments

Where the service comprises any kind of work that could alter sites, structures, buildings and objects with heritage significance in any way, including repainting of walls and roofs or cleaning of stone, an application for the approval of such work shall be lodged with the Heritage Authority.

Interaction with the Sub-Directorate: Heritage Advisory Services (HA Serv) of the DPW is essential and it must be informed at the same time of all proposals and developments. A copy of the permit as well as of the approved documentation must be forwarded to (Heritage Advisory Services). Information shall be conveyed in writing.

The document titled: "Directives on the management of Heritage Assets for the National Department of Public Works", available from Heritage Advisory Services, must be referred to during all stages of the project.

Where the service comprises work of any kind that might alter an asset with heritage significance and particularly where demolition is involved, an application for approval of such work must be submitted to the Heritage Authority (either the National or the Provincial Heritage Resources Agency depending on whether the asset has been graded as Grade 1 or a Grade 2) at the pre-planning stage of the project. Confirmation that a permit has been obtained will be required when such a project is submitted at the Departmental Sketch Plan Committee. Should any changes be made to work that was not included in the permit submission, a separate submission must be made for such changes. See section 3.21 – demolitions in this manual.

3.20.1 National Heritage Resources Act

The Architect must familiarize himself/herself of all the requirements of the National Heritage Resources Act no 25 of 1999. Although reference is mostly made to Section 34 (the 60-year clause) other criteria also apply that determine heritage significance. In such instances the Architect must notify the Project Manager, HA Serv and the Heritage Authority before commencement of design work to establish the possible significance and to determine the implications for the project.

The determination of significance, the implications thereof for the project and the design component thereof shall be discussed with HA Serv with due notification to the Departmental Project Manager.

3.20.2 Recovery of building elements, object or artefacts

Where demolition or removal of any elements of an existing building forms part of the project, the Architect is required to identify any element which could be of heritage significance and to consult HA Serv as well as the Project Manager as to whether such element should be preserved and, if not, the method of disposal to be followed.

If, during the course of excavations on the Site of the project, any object is unearthed which may possibly be an object of archaeological, anthropological or heritage significance, the Project Manager must be notified immediately before any further work is done. The Project Manager must notify the heritage resources authority before its removal.

Where the Site is that of a National Monument or other building of historical significance, the heritage authority must be informed. They may require that the services of an archaeologist or other relevant expert be employed in accordance with the stipulations of the Heritage Act. The Contractor must be instructed to exercise great care during excavation work to ensure that any possible artefacts are not disturbed.

Ownership of any such artefacts or other elements recovered as described above vest in the State and professional team will be instructed as to their dispossession.

3.21 Demolition of any building / part of building

The Architect shall report on building(s) that are envisaged for demolition, stating reasons and necessity. The Department has its own internal policy and process to ensure approval (or non-approval) of any demolition with which must be complied. Due authorization must be sought from the Department prior to the demolition of any state owned building. The approved Demolition Certificate must form part of the SPCM submission.

3.22 Acceptance of design proposals

The Department of Public Works convenes a formal meeting termed “Sketch Plan Committee Meeting” to review the project at an interdisciplinary level and this meeting is attended by all disciplines and the client/user Department. The purpose of this design review meeting is to formally record the acceptance or non-acceptance of the project by the users and all disciplines involved in the project. This is a “milestone” meeting as formal acceptance is given by the Director General (or by delegation of authority) in writing and disciplines may proceed to further stages in the development of documentation. This coincides with SACAP Stage 3 of the Standard Service as outlined elsewhere in this manual.

Until this acceptance of the project is recorded, the Department may require amendments at any stage, or at its sole discretion may require the preparation of new design proposals, without the obligation of any further and additional remuneration except where there is a major amendment of the brief.

Refer to the National Department of Public Works: Sketch Plan Committee Manual as amended from time to time for more detail, requirements, checklists and forms to be completed. This manual is available on the Departmental website.

Architects must discuss their projects from time to time with the appointed Department architectural professional and adopt a pro-active approach in order to ensure that projects are not summarily rejected by the Sketch Plan Committee. To this end the Consulting Architect should prepare line drawings and other concept drawings to illustrate the general intent of the project and discuss these with departmental officials and the Client Department. Acceptance of these in no way relieves the architect of the duty to prepare formal sketch plan drawings for the Sketch plan Committee meeting.

3.22.1 Approval by Client Department – non binding on DPW

Approval or acceptance of line drawings or sketch plans either verbally or in writing by a Client Department is not binding on the Director-General of the Department of Public Works and does not relieve the architect in any way from the responsibility of obtaining written approval of final sketch plans from the Director-General by way of the Sketch Plan Committee.

CHAPTER 4 – CONSTRUCTION REQUIREMENTS

4 General preamble to the construction section

4.1 General deterioration of buildings – Design for low maintenance

Over time all buildings will deteriorate. Architects play a vital role in being able to minimize this deterioration. There are four primary areas that can be identified as contributing to this. They are:

1. Detailing
2. Specification
3. Supervision
4. Maintenance

The architect and designers have a direct influence and span of control over the first 3 items. Maintenance is generally in the hand of the building owner or operator. The Department of Public Works directs consulting architects to pay particular attention to items 1 – 3 in the technical preparation of documentation for the projects for which they are appointed to order to minimize the maintenance requirements of its buildings.

- 1 Detailing
Good detailing results from background knowledge of physics, chemistry and material properties as well as practical experience. Good knowledge of the properties of materials is essential in that it addresses factors such as strength, thermal expansion, moisture movement, behaviour under various loading conditions as well as factors such as durability and suitability for use under the various regions in South Africa. These need to be translated into sound construction practice.
- 2 Specification
A good understanding of performance based specification is required in order that appropriate materials of the required quality are used. Quality can in good measure be controlled by good specification. Incorrect specification of a single component can lead to accelerated degradation of a well-designed detail.
- 3 Supervision

Regular and thorough site supervision is essential to ensure that the well specified materials are built or assembled as detailed. Poor workmanship is often responsible for premature building failures.

4 Maintenance

Timeous maintenance can prolong the lifespan of building materials and finishes so that a cost effective as well as acceptable life-cycle cost is achieved. As stated this aspect is not under the direct span of control of the consulting architect.

4.1.1 Sample construction

Consideration should be given to the construction of samples (walls etc.) and mock-ups that form a basis for comparison of workmanship during the duration of the contract. These should be set out in the tender documentation and measured by the Quantity Surveyor. The build-ability and sequencing of trades can be tested using these sample constructions.

4.2 Energy

Architects undertaking work for the DPW are directed to make all buildings and additions and renovations as energy efficient as possible within the scope of the specific contract. Consulting architects are directed to refer to Departmental Sustainability Manual as well as the DPW Green Building Norms and Standards for specific intervention and directives. These manuals are periodically updated and the onus is on the consultants to ensure that the latest version is used.

Buildings are to have smart meters / sub-metering so that energy consumption and demand can be determined per block/floor/subdivision.

4.3 Building Indoor Environmental Quality (IEQ)

Indoor Environmental Quality directly influences the wellbeing and productivity of the occupants. IEQ is generally influenced by, but not limited to the following:

- HVAC system
- Access to fresh air
- Lighting – both natural and artificial
- Air pollutants – smoke, dust, VOC's, mould spores, etc.
- Acoustics – both internal noise levels and external ingress
- Access to views – distance from external windows

4.3.1 HVAC

Users should be provided with appropriate means to control their local environment and an over-reliance on mechanical systems should be avoided. It will be expected of consultants to, at each stage of the work, expose their thinking regarding energy saving and environmental quality, pertaining to both the interior of the building as well as the site. Compliance with statutory requirements is required in terms of fresh air supply/ ACH.

A narrow thermal comfort band of for example 21 – 22°C results in high energy usage. A more reasonable thermal band of 18 – 25°C may be considered. In any event the diurnal swing should not exceed 5K.

4.3.2 Access to fresh air

No occupant should be further than 6m from an operable window. Windows that have no opening sections are not permitted.

4.3.3 Lighting – natural and artificial

Natural light is the preferred option in all cases. At least 40% of lighting levels (not to be confused with fenestration as a % of floor area) should be provided by natural light. Passages and services areas should have access to natural light and ventilation. Supplementary artificial light may be used and the lighting levels must comply with those prescribed legislation (SANS 10400 P and SANS Codes of Practice).

4.3.4 Air pollutants

Air pollutants must be kept to the minimum by placing ventilation openings such as grills, vents and windows judiciously so as to minimise the ingress of smoke and dust. High levels of ventilation reduce the potential for condensation and hence mould in areas of high humidity such as ablution facilities.

4.3.5 Acoustics

High noise levels lead to fatigue of the occupants, affect effective communication in offices and productivity. The selection of materials in the offices and the design of services must be undertaken so that acceptable levels of internal noise are in accordance with those recommended in SANS 10103: 2008. Internal noise levels should not exceed:

- 40dB(A)eq. For general office space
- 45dB(A)eq. For open plan office space (>50m²)

4.3.6 Access to views

Personnel in sedentary occupations should preferably have direct access to daylight and windows but should not be more than 6m away from a window.

4.4 Life cycle, maintenance costs and initial cost

The operational costs of maintaining facilities, as well as cleaning, maintenance, replacement of building elements and equipment as well as energy costs, must be carefully considered and minimised. Sound construction detailing must focus on these. For example detailing should focus on facilitating the casting off of water from building elements, the avoidance of dust and water/moisture traps and the pooling of water against the building must be avoided.

Whilst the Department is sensitive to the cost of construction, initial cost is less important than on-going or life cycle costs. Higher costs of quality and durable material can be offset against reduced maintenance cost and the determining factor is the life-cycle cost. The Department reserves the right to request that documentary proof be provided for particular choices at the SPCM stage

Materials and components should be accessible for maintenance, repair and replacement - i.e. pipe ducts should be 1m wide, flashings and gutters should be accessible, window cleaning should be addressed, changing of lamps and luminaires etc.

4.5 Materials

4.5.1 General preamble to materials: new materials

The DPW is committed to providing buildings with a healthy environment in which personnel may work effectively. Materials selected or proposed should fulfil the following criteria:

- Contain no Persistent Organic Pollutants (POP's)
- Contain limited Volatile Organic Compounds (VOC's) as outlined in the GBCSA criteria for star grading. The Total VOC content should be below the levels prescribed in GBCSA IEQ credit 13
- Materials should have low formaldehyde content
- Must aid reduction in internal noise levels by having suitable acoustic properties. These materials must be placed where damage to their surfaces is minimised
- Materials selected for toilets, showers and kitchens must aid in the prevention of mould formation on their surfaces
- Be hardwearing and resistant to damage
- Must require little maintenance over its life cycle. Maintenance free materials should be given preference over painted and varnished finishes
- Preference must be given to materials that can be recycled or reused

4.5.2 Asbestos and asbestos containing materials

Some older State building may contain asbestos and asbestos-containing products which may require removal of and disposal of in terms of current legislation. Asbestos may be found in insulation such as boiler lagging and elsewhere and asbestos fibres will be found in asbestos-cement flues of sanitary incinerators as well as bound in polymer as floor tiles.

If asbestos is found or if it is suspected that a building contains asbestos, in whatever form, the Departmental Project Manager must be contacted. The Department will investigate further and decide on the removal thereof or to the management of a process to mitigate risk.

4.5.2.1 Legislation and compliance – removal of asbestos

The general provisions of the Occupational Health and Safety Act (Act 81 of 1993 as revised) apply as well as the specific prescriptions of Government Notice. R:155; Asbestos Regulations (of 10 February 2002 as promulgated under section 43 of the Act). Compliance must be demonstrated by suitable documentation signed by a competent person that all asbestos has been removed and disposed of properly.

4.5.3 Cleaning of surfaces that cannot be replaced

Some State buildings contains many finishes that are, amongst other factors, robust, in good condition or desirable to keep. These may include stone cladding, granite or Terrazzo floors of unique good quality brickwork. In all cases interventions must be kept to a minimum and must follow a hierarchy of intervention. The hierarchy dictates that in all cases intervention must progress from minimal to maximal.

For example face brick walls should be cleaned by;

- Simply washing (scrubbing with soft bristle brush) down with water and possibly a small amount of mild domestic detergent
- Thereafter if the walls are not clean enough then a strong solution of sugar soap may be applied and scrubbing with a stiff bristle brush
- Progress thereafter to proprietary cleaners with dilute acid and other detergents

In all these cases the specification of the work to be done must contain precise and specific instructions in technical documentation to ensure a satisfactory outcome.

- New materials should be matched to existing in type as well as quality although, should the design approach require it, contrasting materials may be acceptable
- Heritage, legacy and significant materials must be preserved and treated with minimal intervention

4.5.4 Corrosion zones

Architects and the professional team is directed to determining the appropriate corrosion zone in which the project is located. For purposes of selecting and specifying the corrosion zone is accepted as being one of those of the ISO 9223 classification system. These are as follows:

- C1 very low
- C2 low
- C3 medium
- C4 high
- C5 very high

Maps of South Africa are available which indicate corrosion zones. If there is any doubt then a corrosion expert should be consulted.

These classifications are to inform the following but not limited to these elements:

- Thickness of anodizing
- Thickness of galvanizing
- Thickness of zinc-aluminium coatings
- Paint selection and coating systems
- Components used in assemblies exposed to the weather
- General guide to material selection and specification

4.6 Foundations

Conventional unreinforced concrete strip foundations for type 1 buildings, which do not require design by a competent person in terms of SANS10400-H, are the responsibility of the Architect and architectural professional and not by the structural engineer. Geotechnical tests that indicate the load bearing capacity and stability of the soil falls into class C, H, R and S sites shall be designed by the architect and strictly in accordance with SANS 10400-H. All other class sites shall be the responsibility of the Structural Engineer. Should the architect devolve this to the structural engineer, the Architect will be responsible for fees charged by the engineer or the work will be excluded from the calculation of fees attributable to the architect.

4.7 Surface beds and ground bearing slabs

Conventional unreinforced concrete surface beds/ground bearing slabs not specifically reserved by regulation for design by a competent person, are the responsibility of the Architect and not the engineer. The Architect is responsible for specifying the grade of concrete as well as thickness and joint layout strictly in accordance with SANS 10400-J. Should the Architect

devolve this to the structural engineer, the Architect will be responsible for fees charged by the engineer or the work will be excluded from the calculation of fees attributable to the architect.

Surface beds shall be saw cut into appropriate sections to prevent cracking.

Guidance to professionals – saw cuts

1. *All concrete panels should preferably be square in shape and the long side of any rectangular panel should not exceed 1,5 times the short side.*
2. *Avoid “L” shaped panels.*
3. *Contraction joints that are sawn into the slab should be $\frac{1}{4}$ the thickness of the slab but with a minimum depth of 25 mm*
4. *All general surface beds should have an underfloor damp proof membrane of 250 μ thick in accordance with SANS 952 and laid in accordance SANS 10021*

4.8 Walling

4.8.1 Masonry walling

Walling, whether of burnt clay masonry or concrete masonry units, is to strictly comply with the prescriptions of SANS 2001-CM1 and SANS 10400-K. Conventional walling not specifically reserved for design by a competent person, is the responsibility of the Architect and not the engineer.

Guidance to professionals - masonry

- 1 *It is strongly recommended that professionals read SANS 2001-CM1 as it contains extensive information and guidance on how to achieve a good final product.*
- 2 *PW371 – Construction Works: Specifications dovetails with SANS 2001-CM1 and the professional is to exercise options and make selections in PW371-B. It is not sufficient to simply state that walling must comply with PW371 as the SANS 2001-CM requires the specifier to make choices in terms of various options offered in SANS 2001-CM1.*
- 3 *Particular attention is to be paid to wall ties in insulated cavity walls (when required in terms of SANS 10400-XA) as neither the insulation nor the cavity is to be compromised by the insertion of wall ties*

4.8.2 Alternative building technologies

Where appropriate the Department will accept Alternative Building Technologies (ABT). As an example these technologies involve, among others, the use of indigenous building methods, light steel frame construction and other forms of building. These will, however, only be accepted

after written permission is granted by the Department and a verifiable path of responsibility and competency can be established.

4.8.2.1 Light steel frame construction

This method of construction is becoming more well-known and accepted as an alternative to traditional masonry construction. SANS 517:2013 Light Steel Frame Building and SANS 10162-2:2011 The structural use of steel - Part 2: Cold-formed steel structures apply strictly to these forms of structures.

4.9 Roofing

4.9.1 Conventional Flat concrete 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, should be restricted to very minor sections of a building.

4.9.2 Roofs over slabs

In all cases where a concrete slab occurs at roof level for constructional, thermal reasons, or 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.

4.9.3 Insulation of roofs

The roofs of all buildings must be thermally insulated strictly in accordance with the requirements of SANS 10400XA. The insulation may be placed directly above the ceiling or in an over-purlin configuration depending on the design of the building or a combination of these techniques but the total R-value must be equal to or better than the requirement. The insulation may be of the:

- Resistive blanket type
- Resistive blanket and foil faced type laminate
- Resistive blanket and bubble foil clad type laminate
- Rigid board type of polystyrene, polyurethane type or other polymer (these may also be used as the ceiling material where practical)

The Architect is responsible for the specification and supervision of the installation of the insulation where it is not an integral part of the structure. This applies whether the deemed to satisfy rules are followed and the insulation is loosely laid on supporting boards. If the insulation material selected is a rigid board that is used in an over-purlin situation, where the sheeting is fixed directly through the insulation it is considered as part of the roof structure as it impacts upon the stability and integrity of the sheeting. In these cases this must be carried in **consultation** with the Structural engineer or the Competent Person designing and supervising the roof. In these case the Structural engineer or the Competent Person must certify the structural integrity of the system. The Architectural professional carries the responsibility for the insulation value required.

All types and categories of insulation are to conform to the SANS standards as set out in PW371. Particular attention is to be paid to the fire resisting properties and the building occupancies as per Table A20 of the National Building Regulations.

Guidance to professionals

- *Particular attention must be paid to the avoidance of heat bridges being formed:*
 - a. *where the insulation does not or cannot cover the entire area being insulated. Insulation is to cover the areas to be insulated completely. This is particularly important near the eaves area of pitched roofs where access is limited.*
 - b. *at connections in structure*
- *Over purlin insulation consisting of rigid boards must be certified by the Consulting Structural Engineer or the roof manufacturer in the case of design-and-supply prefabricated roofing trusses*

4.9.4 Roof configuration – parapet walls

Roof configurations that require the use of parapet walls are not acceptable. They will only be entertained in exceptional circumstances in complex alterations and additions to existing buildings where they are unavoidable.

4.9.5 Materials

Concrete tiles shall have preference over galvanised sheet iron for ordinary spans up to approximately 10m. All materials must conform to PW371 and be installed strictly in accordance with the manufacturers guidelines.

4.10 Internal box gutters

Internal box gutters are to be avoided if at all possible. They may only be used in exceptional circumstances, and upon written consent, where due to the configuration of the roofs they are unavoidable. Box gutters that are constructed of reinforced concrete and lined with a waterproofing membrane will not be allowed under any circumstances.

In such cases the following applies.

- The steel of the gutter is to be minimum 3 mm thick mild steel and the design is to be such that the gutter can accommodate a minimum of 2 workmen walking in the gutter. Larger gutters and longer span require thicker steel. The structural engineer is to specify all such gutters.
- All steel is to be hot dipped galvanizing in accordance with SANS 121 and this should give a galvanized coating of 55 microns or 395g/m² for a 3mm steel thickness. The use of thicker steel will result in thicker zinc coatings. The use of hot dipped galvanizing

precludes any welding or any site work after the application of the galvanizing and therefore welding and site work will not be allowed.

- In corrosion areas designated C4 and C5 a duplex system of hot dip galvanising and paint must be used.
- The gutters are to be wide enough to be cleaned with a broom but in any event shall be a minimum of 350 wide and 250 deep.
- All gutters are to be provided with an overflow to the exterior by means of a weir or other suitable design. The weir or overflow is to be 10 mm above the designed freeboard of such gutter.
- All gutters are to be provided with a minimum of 2 outlets.
- The use of launders is not allowed. Downpipes are to be exposed and drain to a suitable drainage system at ground level.
- All outlets in box gutters are to be provided with suitable drop boxes/receiver/ header boxes as applicable to the location in the country. Whilst conical drop boxes are the preferred option, pyramidal drop boxes are acceptable to the Department.
- Refer to the latest South African Steel Construction Handbook as published by The South African Institute of Steel Construction for more guidance on how to determine the size of gutters and downpipes. See: www.saisc.co.za

4.11 Eaves gutters

Eaves gutters are to be designed and sized according to the tables contained in the latest South African Steel Construction Handbook as published by The South African Institute of Steel Construction. See: www.saisc.co.za . Gutters must, if blocked or in the event of flash floods or hail storms, be able to discharge or to freely overflow to the exterior of the building without damage to any structure or finish of the building.

4.12 Downpipes

In all cases rainwater downpipes must be on the exterior of the building, not encased in the walls or structure. No downpipe of less than 100 mm diameter, or equivalent cross-sectional area if rectangular, may be used. Downpipes are to be designed and sized in accordance with the tables contained in the latest South African Steel Construction Handbook as published by The South African Institute of Steel Construction. See: www.saisc.co.za or equivalent design guide. All down pipes are to discharge away from the building structure / wall onto a suitable apron or rainwater channel for surface disposal. Surface disposal is the preferred method. In exceptional circumstances rainwater downpipes may discharge into a sump/catch pit if a piped system is contemplated.

Downpipes to large box gutters are to be provided with suitable drop boxes/receiver/ header boxes as applicable to the location in the country. Whilst conical drop boxes are the preferred option, pyramidal drop boxes are acceptable to the Department.

Where rainwater is being harvested for on-site use current best practice practices are to be used and discussed with the Departmental Architect.

Acceptable materials are high density polyethylene (HDPE) or galvanised mild steel (gms) where located in ducts (any height of building) or galvanised sheet iron (gsi) for external

application only and then only if the height of the building does not exceed 2 storeys. Aluminium and galvanised sheet iron that is pre-painted are also acceptable.

4.13 Ceilings

Materials and construction techniques must be appropriate to the service conditions expected in the spaces where the ceilings occur to ensure a long life and minimum maintenance.

In the case of suspended ceilings, concealed and semi concealed support systems must be avoided. Drop in tiles with exposed T-'s are acceptable. Gypsum skimmed and taper edge boards with skimmed joints are not acceptable for general applications. "H" connector strips must be used. Only in exceptional applications are skimmed ceiling acceptable.

Appropriate materials must be used in areas of high humidity such as kitchens, laundries and ablution facilities.

4.13.1 Ceiling heights

Room heights shall be commensurate with room area on plan and the population of the room. Domestic rooms and offices shall generally have unfinished floor to ceiling heights of 2 720 mm (32 brick courses of 85mm each) or 2800 if in masonry block work. For other construction methods a height of 2700 is acceptable.

4.13.2 False ceiling voids

With a view to making State buildings sustainable and flexible for changed functionality ceiling voids must be deep enough to accommodate the contemplated services and provide for future installations as well as far as possible.

4.14 Doors

Standard profiles shall be used (i.e. door frames) but the outcome of the functionality as well as architectural composition (window sizes, door compositions) should fit the architectural aesthetics, tectonics, natural lighting and ventilation requirements. Standard catalogue doors shall not necessarily have preference over doors designed to fit the building.

4.14.1 Safe and Record room doors

In general all record room and safe doors must comply with the level of protection/security/fire resistance required by the client department. This information should be stated in the client department brief. If not so stated then the Architect is to make an enquiry via the Departmental Project Manager. All these doors are to comply with the relevant specification of PW 371.

4.14.2 Evidence rooms (Corpus Delicti)

If not specifically stated in the Brief then the Architect must confirm the requirement and standard of protection required by the client (Dept. Justice and Constitutional Development) in the case of court buildings for rooms that store items (corpus delicti) to be used as evidence in trials. This includes built-in ventilators and burglar proofing. All items must comply with PW 371.

4.14.3 Locks and master keying

Unless specified differently in the brief the following levels of security apply:

Internal doors – houses and flats	2 lever mortice lockset
External doors – houses and flats	3 lever mortice lockset
Internal doors – institutional buildings and hostels	3 lever mortice lockset
External doors – institutional buildings and hostels	5 pin tumbler cylinder lockset
Office blocks, police stations and public buildings	5 pin tumbler cylinder lockset with single, double or knob-set as required
Cells doors in SAPS and prisons	Purpose made lockset to SAPS or DCS specifications

The need for master keying and the structure (suites and sub-suites) must be confirmed with the client Department before commencement of work.

4.14.4 Hollow core doors

Flush panel hollow core doors are not acceptable for any application in State buildings.

4.15 Windows

Standard profiles shall be used (i.e. window profiles and opening sections) but the outcome of functionality as well as the architectural composition (window sizes, door compositions) should fit the architectural aesthetics, tectonics, natural lighting and ventilation requirements. Standard catalogue windows shall not necessarily have preference over windows designed to fit the building.

4.15.1 Air leakage

All windows, irrespective of material, must conform to the air leakage rates requirements demanded by the National Building Regulations or SANS 10400. This is currently a requirement of SANS 10400 XA.

4.15.2 Burglar bars

Although burglar bars are generally fitted to all ground floor windows, architects are to check with client departments as to the provision of burglar bars/proofing required for the specific building. With steel frames burglar bars may be welded to frames. With aluminium, PVC and timber burglar bars must not be attached to the frames but to solid masonry or suitable structure.

4.16 Services to buildings

4.16.1 Preamble to professionals

Contemporary buildings generally require extensive services. One of the major challenges and sources of expenditure to the Department is the maintenance of these services. Designers are consequently instructed to integrate services into buildings so that maintenance is kept a

minimum and should maintenance be required, disruption to the functioning of the building and its staff is kept to a minimum. Minimising maintenance to services is achieved by the following:

- Correct and proper sizing of pipework, using accepted standards (particularly SANS documents) conduits to ensure adequate flow rates, operating pressures etc. See later for specific design codes to be used
- Place all soil fittings against or adjacent to external walls or walls of ventilated pipe ducts. Walls upon which sanitary fittings are fixed must be at least 230 wide brick or 190 wide masonry units with core filled with concrete. For light steel frame construction consult the manufacturer
- Surface mounting of pipe work, conduits and other services and ensuring that these cannot easily be damaged by vehicles, people – personnel and public.
- Securing pipework and services adequately with holderbats so that pipes and similar cannot be dislodged and falls are maintained
- All cleaning and access eyes and all points of access to services are visible and not built in to walls nor covered with ground or paving. Access panels are to be large enough to allow workers adequate access
- Duct doors and access panels, whether interior or exterior, are **not** to be affixed with screws which can be lost by workmen in the execution of their duties. They are to be installed with hinges so that they can easily be opened by at least 90° in any application to accommodate workers. A suitable method of closing and securing them as required by the building typology is to be provided. Locks with conventional keys are to be avoided as keys are misplaced
- No duct in which personnel are required to perform maintenance tasks may be less than 900 mm wide and should preferably be 1000 mm wide.
- The surfaces surrounding manholes for any service, drainage, electrical, telecommunications and data, must slope gradually away from manhole so as to minimise the ingress of water into the system. This applies equally to paved and non-paved surface finishes. Rainwater and other sources of water should not be allowed to pond on manhole covers.
- Access and rodding eyes in vertical stacks and horizontal branches must be well placed relative to duct doors so as to facilitate the use of rodding equipment.
- Duct should ventilate to the exterior if at all possible

4.17 Domestic water supply and Drainage

4.17.1 Potable water supply (Drinking water)

Water conservation and the responsible use of water is a priority for the DPW and designs and equipment must address these concerns. The potable water system is to comply with SANS 10400-W and XB (when published or the latest of these routes to compliance)

4.17.1.1 Design standard and compliance

The design of the potable water reticulation systems is to be strictly in accordance with the latest version of SANS 10252-1: Water supply and drainage for buildings Part 1: Water supply installations for buildings, as required by the regulations promulgated under the Water Services Act 108 of 1997. Compliance herewith is to be certified by a competent person.

All equipment, fittings and accessories must be compliant with the relevant SANS as set out in PW371 and other relevant DPW guidelines.

4.17.1.2 Metering of use

The bulk potable water is normally supplied to a building by the relevant Local Authority. If no meter exists then application must be made to the Local Authority for the installation of a suitable meter. Metering and sub-metering is also a requirement in State buildings where there is no Local Authority supply and used is made of boreholes or other sources of water.

To facilitate the acquisition of data to enable the use of a Building Management System (BMS) sub-metering of water to the various blocks and toilet clusters, mechanical plant and catering services is required. The sub-metering should be able to operate via electronic means and not require regular human intervention.

4.17.1.3 Water saving: Toilet flushing, shower heads and basins

All toilet cisterns must be equipped with dual flushing mechanisms as part of a water saving strategy. If exceptions are contemplated these must be brought to the attention of the Departmental Project Manager citing reasons.

All showers must be equipped with low-flow shower roses as part of a water saving strategy. Taps and mixer taps to wash basins, wash-troughs and similar fittings must also be fitted with low-flow fittings or flow restrictors to minimise water use.

The physical size and capacity of wash hand basins must be reduced to the minimum size needed whilst still maintaining the functionality thereof.

The use of rainwater and recycled grey water for flushing toilets and urinals must be investigated for building typologies where this water saving strategy is possible.

4.17.2 Hot water supply

Provision of hot water must be in accordance with the provisions of Facilities Regulations R1593 of 1990 or an amended promulgated in terms of Occupational Health and Safety Act (Act 6 of 1983). See 2.(4)(a) of the regulations which state that all wash hand basins must be supplied with hot and cold water, or if premixed, at not less than 35°C. Decentralised tea kitchens must receive hot and cold water as for wash hand basins. In addition Notice 943 of 20 September 2013 (National Norms And Standards Relating To Environmental Health In Terms Of National Health Act, 2003 (Act No 61 of 2003) Gazette 36849) requires hot water to be stored at minimum 60°C and distributed at at least 50°C in order to minimise the risks of legionella. Therefore the design of facilities must group fixtures and minimise pipe runs that are not energy efficient.

Solar water heating must be employed to maximum effect for the provision of hot water. Other alternative technologies such as heat pumps may be considered in areas or building typologies where solar water heating is not feasible. The minimum percentage required by NBR part XA of non-electrical resistance heating is mandatory but the DPW would welcome a higher percentage as this is in line with various DPW policies.

4.17.3 Reserve supply

There is often a need for a reserve potable and fire water supply. The capacity of reserve supply must be discussed with the Directorate: Engineering Services: Civil. The architect should be involved in the placing of the tank(s) in the optimum position in or surrounding the building.

4.17.4 Domestic drainage / Wet Services

In most State buildings the domestic drainage system is connected to the Local Authority system by way of a single or several connection points. The depth and position of this (these) connection point(s) must be determined by either the Architect (where responsible for site drainage) or by the Civil Engineer (where responsible for site drainage). In some instances State buildings make use of either conservancy tanks, septic tank systems or on-site treatment plants.

In general the responsibility of the Architect is limited to drainage systems (both wastewater and foul water) within the building envelope including connection to gullies / stub stacks. In larger projects on site drainage is usually the responsibility of the consulting Civil Engineer. On small projects the on-site drainage may be the responsibility of the Architect. The Architect is to check with the Departmental Project Manager if there is any doubt as to the person responsible.

In renovation and refurbishment type appointments the architect must establish the serviceability of the drainage system and report in the SQ report on the following:

- Alignment of pipework – whether there is significant displacement of pipe due to ground movement
- Extent of root invasion in pipe runs
- Accumulation of other debris in pipes

Where complete replacement is necessary current technology and materials should be used. Fire spread caused by PVC, HPDM and similar polymer materials in high rise projects is a concern for the DPW and designs and equipment must address these concerns. Replacement of main stacks with cast iron could be used in high-rise building typologies.

4.17.4.1 Design standard and compliance

The design of the wet services reticulation system is to be strictly in accordance with the latest version of SANS 10252-2 Water supply and drainage for buildings Part 2: Drainage installations for buildings. Compliance herewith is to be certified by a competent person.

All equipment, fittings and accessories must be compliant with the relevant SANS as set out in PW371 and other relevant DPW guidelines.

4.17.5 Gas installations

Gas installations in State buildings must conform to relevant legislation and all gas installations must have a Certificate of Conformity / Compliance (COC) according to the Pressure Equipment Regulations that have been promulgated under the Occupation Health and Safety Act (No 85 of 1993). The certificate must be issued by an authorised person who is registered with the Liquefied Petroleum Gas Safety Association of Southern Africa (LPGAS). The relevant Part of SANS 10087 is applicable. The COC must be submitted to the Departmental Project Manager.

Guidance to professionals

*Design parameters must be checked against the SANS 10087-1 figure 6
For the purposes of design and planning the following serve as a **guide** only relating to the position of gas bottles and they may not be:*

- *Less than 1 metre sideways from doors and windows*
- *Less than 2 metres from drains and air vents*
- *Less than 3 metres below windows (unless a non-combustible roof is installed)*
- *Less than 1 metre from the property boundary wall (unless it is a fire wall)*
- *Less than 5 metres sideways away from a switchable electric point or plug switch;*
- *Light bulbs cannot be less than 1.5 metres above a gas bottle.*

Other installation rules:

- *Only class 1 or 2 copper pipes, or other approved gas piping, may be used (Note: This is not the same copper piping as often used by plumbers)*
- *Copper pipes going through a wall must be sleeved*
- *Approved flexible gas hose may not be more than two meters long and may not go through any partition (including wood, dry wall, cupboard wall etc.)*

4.17.6 Design of service installations

4.17.6.1 Services built into walls

Services in walls should be avoided but where they do occur, such as bundled conduiting for electrical distribution boards and/ or cold and/ or hot water supply to showers, wash hand basins and urinals, they should be housed in one brick walls (230 walls) with access panels. Chasing into 115 mm walls is not permitted. Horizontal chases in walls in excess of 1000mm should be avoided as they weaken the wall.

4.17.6.2 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.

4.17.7 Sanitary fittings

Water control systems or taps to bowl urinals, wash hand basins and similar must be selected with a view to minimising maintenance and the saving of water. Architects are directed to carefully consider manually operated versus automatically (electronically) operated taps/valves in the specific project as there is no "one size suits all" policy within the Department.

Wash hand basins should generally be installed without plugs and chains.

4.18 Lightning protection

The Architect is to establish the level of lightning protection required in consultation with the Consulting Electrical Engineer and the placement of air terminals, conductor cables and earth mats (ground rods). The Architect must be involved with the siting of the elements in so that they occur in positions that impact least on the functioning of the building.

4.18.1 Thatch

No thatch roofs are allowed as “lapas” or entertainment/recreational structures either as standalone or connected to State buildings.

4.19 Lift installations

4.19.1 Sumps to lift pits

If sumps are required to keep lift pits free of water, these sumps and the pumps must be located outside the lift pit itself in order to facilitate maintenance. Lift shafts and pits may only be accessed by authorised personnel which creates a problem in terms of general maintenance of sump pumps and other equipment which require general maintenance.

4.19.2 Lift motor rooms

Lift motor rooms must be provided with a screed of 65mm minimum thickness to house metal ducts and conduits. The minimum floor to ceiling height required by the lift manufacturer must nevertheless be maintained.

4.20 Anticipated life span of building elements

A building contains many systems and subsystems as well as components and subcomponents. It is important for the DPW to acquire a building that provides a life-cycle that is in line with its intent, expectations of management and value of investment. The following is offered as a guide as to the general expectations of the life-cycle of components and systems that need to be provided for the building, along with standards for rejuvenation and intervention. Refer also to Life-cycle costing in Section 4.4

Line item	Component	Expected economic life span in yrs	Comments
1	Structure		
	Major structural components such as columns, slabs and walls	50+	Any structural interventions contemplated – life of the building
	Minor components; such as stone/tile cladding	35	With regular cleaning 35 years is expected
2	Building envelope		

	Façade: curtain walls/glass	30	With regular cleaning 35 years is expected
	Façade; stone and brick	30	With cleaning and refurbishment
3	Interior finishes		
	Carpets and carpet tiles	7	General service
	Ceramic floor tiles in general	20+	“full bodied” or through colour are preferred to glazed tiles as the glaze tend to wear through
	Stone floors of granite and quartz and encaustic tile surfaces	50+	With cleaning, honing and refurbishment
	Thermoplastic floor finishes	12	
	Cement plastered wall surfaces and skim-coated drywall	30	With regular maintenance
	Timber panelled wall surfaces	15+	With regular maintenance
	Paper and fabric finished walls	10	
	Ceilings; lay-in type tiles	15	
	Ceilings; skim-coated drywall types	30	
	Doors and door hardware	15	
	Wall finishes: vinyl type wall paper and paint	5	
4	Services		
	HVAC		
	HVAC; package units; including VRV units and machinery	20	With regular servicing and maintenance as per manufacturer’s instructions
	HVAC; split and cassette types	15	Ditto
	HVAC; Fan coil units	20	Ditto
	HVAC; extract fans in general as in bathrooms, toilets, store-rooms, kitchens	20	

	Lifts; traction systems in general with limited electronic upgrades	25	
	Lifts; door operators	20	
	Electrical		
	Electrical equipment; transformers, switchgear and main distribution switch boards	30	
	Light fixtures	20	
	UPS batteries	7	
	UPS systems	10	
	Emergency generator diesel engine and generator	20	
	General sockets and light switches	15	
	Access		
	Access control; turnstiles	10	
	CCTV cameras, monitors and other electronic components	5	
	Fire alarm, sprinklers generally	20	
	Wet services		
	Hot-water cylinders; electrical resistance type	10	
	Hot water cylinders; solar hot water systems	25	
	Toilet pans, wash-hand basins, urinals and sinks	25	
	Taps and flushing mechanisms	15	
	Domestic water piping system	30	
5	Roof and waterproofing		
	Bituminous, and polymer based waterproofing on concrete roofs exposed to the external elements	15	With regular maintenance as per manufacturer's instructions

	Bituminous, and polymer based waterproofing on concrete not exposed to the external elements as in plant room floors	20	ditto
	Bituminous, and polymer based waterproofing on concrete covered by granite/concrete/stone tiles	20	Minimum maintenance over life span
	Steel/aluminium roofing sheets on purlins exposed to the elements	25	
	Copper, stainless steel and titanium-zinc built up seemed roofing	75	

CHAPTER 5 – TECHNICAL DOCUMENTATION

5.0 General preamble technical documentation and procurement

The purpose of technical documentation – traditionally called working drawings – is to give clear instructions to the contractor as to how the design intent is to be realised. The information contained in drawings, schedules and specifications must be measurable and be able to be priced. Information contained in architectural technical drawings, schedules, specifications and instructions should strive to be clear, accurate and unambiguous.

It is often at this level of detail in the design and documentation that a major impact can be made in terms of:

- Sustainability of the building is determined to a great extent
- Energy use and efficiency is ensured
- Water saving and utilisation is achieved
- Green and healthy materials are specified
- The maintenance cycle is determined
- Sound architectural detailing is achieved

Architects are to prepare documentation that complies with generally accepted standards of drawing subject to specific directives of the Department who may require specific information and drawing practice. The Department reserves the right, as employer, to enforce standards of draftsmanship, graphic standards and information that it requires on architectural documentation. SANS 10143 – Building Drawing Practice, as amended from time to time, shall apply in terms drawing practice.

Architects are to be mindful of:

- Best standards of practice; this will achieve the desired outcome and will engage with standards that are possibly above minimum mandatory standards
- Compliance with regulatory frameworks; Government, as a leader, must comply with regulations.

5.1 General considerations relating to drawings

5.1.1 Full and comprehensive information

As stated in the preamble consulting architects must provide full and comprehensive information on their documentation. It has been noted by the Department that sets of drawings produced by consulting architects are sometimes not comprehensive. The following is offered as guidance.

- Fully dimension drawings – this applies to general arrangement drawings and details
- Fully annotate descriptions of the construction and all materials
- Draw **ALL** required drawings -
 - Foundation plans for new work
 - All floor levels
 - Ceiling plans
 - Roof plans

- Sufficient sections to fully illustrate all parts of the building – it is apparent that too few sections are being prepared by Architects to fully expose all details. Position of sections must be chosen to provide the maximum information
- All elevations of all facades – these may be part section and part elevation
- All material annotations must include the size or thickness of the material, the material and the name of the element in that order e.g. 38x38 SA Pine batten.
- Show all rain water downpipes on both plan and elevation
- All services must be shown on plan and elevation where appropriate
- Describe the work fully. For example use of the word “existing” conveys little information and should always be coupled with instructions such “retain existing ...” or “remove existing ...”
- All designs must be complete – no provisional items or “design by contractor” is acceptable
- A register of all drawings must be shown on the first sheet of any set of drawings prepared for either the Sketch Plan Committee Meeting or final Technical documentation. This list should be in tabular form and is to show the unique drawing number, the drawing name and include the revision number

5.1.2 Language policy relating to drawings and documentation

The titles, annotations and notes as well as the specification and other documentation for the project must be in the English language. Public buildings require extensive signage and adequate provision must be in the documentation. All signs, notices and corporate signage with the building must likewise be in the English language.

Specific instructions will be issued by the Departmental Project Manager where any additional language is required. This may be applicable in State buildings in non-English speaking countries and at border posts and Court buildings. The wording of all signs must be submitted to the Project Manager for approval.

5.1.3 Size of drawings

All drawings must conform to the A size series of sheet sizes. In general all drawings for a project are to be of the same size and A1 (841x594) is the preferred size. For large buildings A0 (1189x841) may be used if approved by the Director of Architectural Services.

Door, window and finishing schedules may be produced in A4 (297x210) format. The specification document shall be produced in A4 format.

5.1.4 Layout of sheets and title block

All margins and the vertical title panel along the right side of drawings, must be in accordance with the Department standard sheet and any later amendments thereof. A Computer Aided Drafting template in different formats is available at <http://www.publicworks.gov.za/consultantguidelines.html> .

5.1.5 Drawing and graphic standards

Prepare drawings in accordance with the latest edition SANS 10143 - Building Drawing Practice, unless otherwise directed, with specific reference to the following:

- Layout
- Scales applicable

- Dimensioning convention
- Graphic symbols to be used. It has been noted that architectural practices tend to develop their own graphic symbols or the standard CAD symbols are used on drawings presented to the Department. SANS 10143 symbols are to be used when working for the Department
- Lines types and line weights
- Lettering fonts and size of lettering
- North point position and size. The North point is **NEVER** to face the lower half of the drawing
- All drawings **must** have the same orientation regarding North
- All drawings must have the same service title in wording identical to that contained in the letter of appointment
- Drawing numbers in the title block shall not be less than 6 mm high
- Only “sans serif” text fonts may be used on drawings. Avoid “narrow” font types
- When reducing A1 size to A3, the text be still be legible

5.2 Duplicating and copying documents

The Architect together with consulting team must provide all copies of drawings that are needed for all stages of the project. The following apply:

- Development of the project; furnish copies of all applicable documentation to all consultants in order for them to complete their work. These may be electronic copies.
- Furnish 1 set of drawings to the Departmental Architectural Professional to review the documentation prior to the Sketch Plan Committee
- Sketch Plan Committee; furnish copies to all officials involved in the Sketch Plan acceptance process. Consult the Sketch Plan Committee Manual for number and formats of drawings to be submitted as these differ from project to project
- Tender documents; the Departmental Project Manager will determine the number of sets to be provided for tender purposes. Issue these to the Project Manager
- Construction documents; provide 3 (three) sets of all drawings and documents to the appointed contractor
- Central Drawings Archive; provide 1 (one) set of “as built” drawings and 1 (one) electronic copy of all drawings to the Central Drawings Archive.

The architect is to keep records of all drawings and duplicating costs as all claims for reimbursement must contain full records of costs.

5.3 Submission of drawings and documents to the DPW

Drawings submitted to Departmental Professionals **must be folded** to A4 size in accordance with SANS 10143. The title block is always to be placed uppermost. No rolled drawings are acceptable.

5.4 Copyright

Copyright over all drawings and documentation vests with the Department of Public Works. No drawings may be published, in whatever medium, without prior consent from the Department.

5.5 Posting and courier services

To facilitate quicker turnaround times drawings and documents are NOT to be posted to the Department. Courier services may be used after consultation with the Project Manager as the Department may have a contract with a service provider.

5.6 Drawings and documentation required

Projects may differ in scope and complexity and the documentation required for construction must be project specific and relate to that project. Generic drawings and specifications are not acceptable.

5.6.1 Design development

Line drawings of plans sections and elevations drawn to scale, are acceptable as discussion documents by the Department. These are considered to be sufficient to show the general design strategy, site development, room layouts and the overall concept of buildings.

5.6.2 Sketch Plan Committee

The drawings and documentation required for this phase of a project are listed in the Sketch Plan Manual. Drawings listed in the Sketch Plan Manual must formally be issued to the Department for distribution to various parties as listed in the manual.

5.6.3 Construction phase

Full technical documentation is required for this phase of a project. This documentation can be divided into three documentation types:

- Drawings – these are graphical representation of the proposed building.
- Schedules – Schedules usually contain a minimum of drawing and extensive text which more fully describes elements
- Specification – Specifications are written descriptions of the **quality** of the built product and its component products.

The Department of Public Works requires architects to produce all of these documents. These documents do not necessarily need to be formally issued to the Department but the Department reserves the right to demand any technical documentation or all such technical documentation should it be deemed necessary.

5.7 Specification

5.7.1 Responsibility of the architect

The policy of the Department is that in all cases a separate **PROJECT SPECIFIC** construction works specification is required. General specifications are **NOT** acceptable.

This is required for:

- New work projects
- Refurbishment projects
- Renovation projects
- Alteration and additions to buildings
- Restoration and conservation type projects

It is the duty and responsibility of the Architect to prepare this document and it is neither the duty of the Quantity Surveyor nor any other member of the Professional team to prepare the construction specifications. Individual disciplines are to prepare their own specification.

5.7.2 Departmental Standard specification

Architects are directed to the Departmental Construction Works Specification PW371. It is available at <http://www.publicworks.gov.za/consultantsguidelines.html> . Hard copy is available from the Project Manager or the Director: Architectural Services.

PW371 consists of two parts. Part A is the general specification and must not be changed or altered without written permission from the Director: Architectural Services. Part B is a project specific specification and must be completed by the architect for all projects. It is in Part B that the architect must select/specify various options allowed for in the SANS standards.

Alternatively in Part B the architect may specify products of a higher or different standard.

NOTE: as described elsewhere in this manual specification must be performance based and generic in nature and cannot contain trade names of products in order to comply with State policy.

5.7.3 Specification format

In line with international current best practice, the Department uses a “performance based” style of specifying and has departed from the “prescriptive” style specifying. Therefore any additions to PW371 must be drafted as such. Deviations from this style may be accepted in the following:

- Heritage and restoration projects where a “recipe” of how to make or apply construction elements, finishes and products require a prescriptive approach
- Specialized construction elements and finishes for which a “work method” and a prescriptive description are required

5.8 Brand names and propriety products

The State is committed to the use of local products and equipment in State buildings. Local products are to be specified in all cases unless there is a compelling reason not to do so.

The State supports the local open market system within the Republic of South Africa and architects are to describe and specify products and materials in a fully descriptive and performance based manner. Specifying any articles or manufactured building elements by using their proprietary or specific manufacturers' name is not allowed. To ensure quality the applicable SANS must be used where available and where SANS are not available for the specific product, European Union (EN), British Standards (BS) or Deutsches Institut für Normung (DIN) may be used.

Should the use of imported building products and materials be necessary due to the non-availability of South African products architects must compile a list of these and submit them to

the Departmental Project Manager for approval together with a written motivation.

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" in conjunction therewith. The approval in the statement "or equal approved" vests with the Department and not the consulting architect.

This may occur, for example, with refurbishment project where it may be necessary to match elements like door furniture to those that exist in the building.

5.9 Local products and materials

In line the Department's commitment to sustainable and economic building, building products, materials and finishes are to be sourced locally as they:

- Reduce of carbon emissions caused by transporting materials over long distances
- Support local industry and stimulate commercial enterprise
- Support the local economy
- Support creation of local employment

In this context "local " not only refers to South African but to products and services that are found within a 100 kilometre radius of the proposed project.

5.10 Relationship between specification and drawings

The principal information required by the Quantity Surveyor and ultimately the building contractor is supplied in the form of working drawings which must:

- Be fully detailed
- Be comprehensively annotated
- Show particulars of all component parts of the building
- Show materials and finishes and methods of application
- Show all joining and fixing
- Contain comprehensive schedules
- Show all services
- Show all site work including removal of vegetation, demolitions and stock piling of material for subsequent use

Clauses in PW371 and SANS documents refer to "as shown on the drawings". Architects must ensure that this cross referencing is done and the various documents are a seamless source of information.

5.11 Numbering of drawings

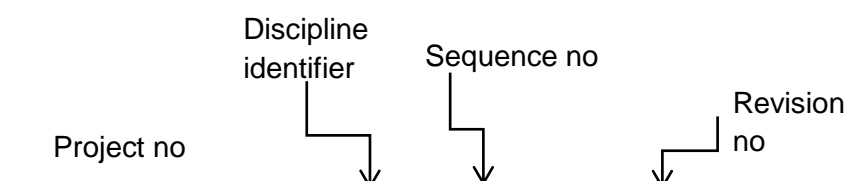
All drawings must be uniquely numbered so as to identify them. Drawings shall be numbered in sequence with a series so that all plans can be identified by their sequence number. Likewise all sections, elevations etc. can be identified by the series that they fall into. Use the following numbering convention:

No	Series number	Used for
1	A1000 up to A1999	All locality plans, site plans, site demolition works, excavations, fill, material stockpiling areas and all work relating to the site, drawing numbers etc.
2	A2000 up to A2999	All general arrangement plan drawings (1:100 or 1:50 conventional plans), all basement plans, ground level plans, all storey plans, all foundation plans, ceiling plans, and roof plans
3	A3000 up to A3999	All sections and sectional elevations in the general arrangement drawings (1:100 and 1:50 scale conventional sections)
4	A4000 up to A4999	All elevations in the general arrangement drawings (all 1:100 or 1:50 conventional elevations)
5	A5000 up to A5999	Large scale layouts of kitchens, bathrooms and other fitting intensive rooms (typically 1:20 layouts) including all plans sections and elevations of walls showing all fittings
6	A6000 up to A6999	Construction detail or assembly drawings (1:20, 1:10, 1:5, 1:2 and 1:1)
7	A7000 up to A7999	User defined – additional drawing type such as space planning and the like
8	A8000 up to A8999	Schedules, doors, windows, finishes, sanitary ware, fittings and anything that is able to be in the form of a schedule
9	A9000 up to A9999	Photographs, 3D type drawings, isometric drawings etc.

The prefixes are to be used on drawings:

- A – Architectural
- C – Civil engineering
- E – Electrical engineering
- L – Landscaping, irrigation and ecological design
- M – Mechanical engineering
- S – Structural engineering

The Departments project number (the project or job number obtainable from the Central Drawing Archive) must be used as part of the drawings as follows:



0	4	1	2	3	5	6	-	A	2	1	2	3	-	1	5	
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--

In the above example the following is evident:

- The project number is 0412356
- It is an architectural drawing
- It is a general 1:100 / 1:50 arrangement drawing – a plan number
- It has been revised 15 times

5.12 Drawings scale

The following is a list of typical drawings showing preferred and acceptable scales. The nature and scale of the work may influence the type of drawing to be provided.

	Type of drawing	Preferred scale	Requirements and comments
1	Locality plan	Dependant on locality of the service	This drawing is to show the general location of the project with distances to towns in order for tendering parties to gauge the impact of the distances relating to cost. Full site cadastral information is required
2	Site plan	1:500	Alternative scale – 1:200 may be used for smaller projects Show all information relating to the project. Information such as stand (erf) number, building lines etc. are required even in the case of renovations and refurbishments. External work must be clearly shown
3	Plans, sections and elevations	1:100	Alternative scale – 1:50. May be used but permission must be obtained from the Director: Architectural Services A single scale must be used for all these drawing types
4	Detail layouts	1:20	Alternative scale – 1:25. This scale may be used if warranted by the size to the rooms

			<p>These are detail layouts of toilets, kitchens and stairs and any other room requiring significant detail</p> <p>These drawings are to show all features/fittings such as</p> <ul style="list-style-type: none"> • Soap holders • Towel rails • Tile layouts • Skirtings and cornices • All fittings <p>The above are to be indicated and dimensioned from measureable points</p>
5	Large scale constructional details	1:10, 1:5, 1:2 and 1:1	Detail to these scales, any work that cannot be adequately shown at a smaller scale. These must not be mere “blow-up’s” of smaller scale drawings. They are to show substantially more detail and information
6	Door schedules	1:50	<p>Alternative scale – 1:20. This scale is to be used when the doors require more information that can easily be shown on a 1:50 drawing</p> <p>All doors of the same type must have the same code (e.g. D1). This code must correspond with the doors on the layout (1:100) drawings. The handing of the door shall be determined from these drawings</p> <p>Under each door on the schedule fully describe</p> <ul style="list-style-type: none"> • Frame material and type • Frame width i.e. suitable for 115 wall • Frame finish • Door size material and type (construction) • Door finish • Ironmongery • Glazing/view panels if required • HVAC grilles – size must be shown on the drawn elevation of the door

			Aligned to current drawing practice the quantity or number required and handing of doors (e.g. 20 7RH and 13LH) is NOT to be shown
	Window schedules	1:50	<p>Alternative scale – 1:20. This scale is to be used when the windows require more information that can easily be shown on a 1:50 drawing</p> <p>All windows of the same type must have the same code (e.g. W1). This code must correspond with the windows on the layout (1:100) drawings. The handing (or direction of sliding sections) of the windows shall be determined from these drawings</p> <p>Under each window on the schedule fully describe</p> <ul style="list-style-type: none"> • Frame material and type including opening sections • Frame finish • Window finish • Ironmongery • Glazing type and thickness • Burglar bars – dimensions, material and spacing of elements • Fly / mosquito / insect screen or other elements where required with details to clearly illustrate them <p>Aligned to current drawing practice the number of types required is NOT to be shown</p> <p>All glazing is to comply with SANS 10400-N</p>
	Sanitary schedules	N/A	If applicable to the project sanitary schedules showing all fittings should be prepared. All elements are to be generically described in detail as no trade names may be used
	Finishing schedules	N/A	All rooms and communicating spaces such as passages and lobbies must be listed in a table or matrix form and their corresponding finishes

			<p>listed. This must cover both new and renovations to existing finishes.</p> <p>Finishes must include:</p> <ul style="list-style-type: none"> • Floors and substrates • Walls and substrates • Ceilings and cornices • Skirting elements – power skirting included • Picture rails • Dado rails • Shelving – fixed • Benches – fixed
	Other schedules	N/A	Schedules may be used for other elements such as locks in doors (master keying), kitchen cupboards etc.

5.13 Fittings and equipment to be shown on drawings

Architectural professionals need to differentiate between documentation provided for different purposes or “audiences”. Drawings to be used by client departments and non-technical managers needs to show all fittings, equipment, furniture, landscaping elements such as trees and functional elements such as motor vehicles in order that they can better visualise the functional aspects of buildings.

Drawings and documentation for sketch plan, tender and construction purposes must only show those elements of equipment and fittings that are either “included in the contract” or “not included in the contract”. In the case of the former these are an intrinsic part of the building and are generally items listed below. In the case of the latter these are fittings and pieces of equipment that require services and specific space allocations or to be coordinated with services supplied under the contract.

Examples are listed below and are for general guidance. If there is any doubt the Architect must consult the Project Manager for instructions to provide for these per separate contract. The following is offered as guidance only and consulting architectural professionals must ascertain the detail requirements of the client department and discuss with the Departmental Project Manager before inclusion in the project. These items may, for example, be burglar bars, insect screens and other client specific elements.

5.13.1 Fittings to be shown as “in contract”

Show on the working drawings, for inclusion in the contract, fittings such as the following:

- Build-in cupboards and other fittings to be fixed to the structure
- Counters and grilles
- Laboratory benches

- All shelving
- All fittings in court rooms
 - Bench
 - witness boxes
 - dock
 - public benches
 - tables for legal representatives, stenographers, press etc., all in accordance with the Department of Justice and Constitutional Development requirements and type drawings
- Draining boards, worktops and cupboards under, including loose tables in kitchens, where these must match worktops
- All sanitary fittings
- Roof tanks
- Hand pumps such as semi-rotary wing pumps for small sumps
- Main ICT/telephone server cabinets or distribution board cupboards if applicable
- Cupboards and boards for the fire extinguishers and hose-reels
- Metal beds in prison cells, in accordance with Department of Correctional Services requirements and type drawings
- All kitchen equipment (if)

Consulting architects are to enquire about the specific requirements of client departments and the availability of “type” drawings. The designs and details shown on “type drawings” are to be used in preference to custom designed elements, as this aids the DPW in maintenance tasks.

5.13.2 Fittings to be indicated “not included in contract”

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

- Loose seating in assembly halls and lecture theatres and other furniture, whether fixed or movable
- Standard steel lockers in change and rest rooms
- Technical and mechanical equipment,
 - Boilers
 - Furnaces
 - Hoists
 - Refrigerators
 - Dishwashers
 - Sterilizers
 - Incubators
- Loose shelving

5.13.3 Fittings not to be shown

In general equipment, tables, chairs and other loose furniture and fitments not fixed to the structure should not be shown of technical documentation. Exceptions such as table in court rooms and certain tables in kitchens are discussed elsewhere in this manual.

5.14 Completeness and correctness of 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

CHAPTER 6 – Contract Administration and Building Handover

6.1 General preamble to Contract Administration

It is during this stage of the project when the financial outflows are the greatest as the work is put in hand by an appointed contractor. It is also the stage where the work by the professional team, and in particular the quality of architectural professionals' documentation, is subject to scrutiny by an array of sub-contractors and specialist providers of goods and services.

The architect's design obligation does not stop when the initial design and technical documentation has been completed. During the construction phase the architect's services usually include obligations such as:

- providing further information as reasonably required for construction
- reviewing design information from contractors or specialists
- providing drawings showing the building and main lines of drainage, and
- giving general advice on the operation and maintenance of the building

The exercise of reasonable care and skill therefore extends beyond merely drawing the building.

The preamble to the "Construction Requirements" section of this manual contains the following which is repeated here:

"Regular and thorough site supervision is essential to ensure that the well specified materials are built or assembled as detailed. Poor workmanship is often responsible for premature building failures"

Generally the architect must follow the work flow in Stages 5 and 6 as set out in Chapter 2 of this manual. These correspond to Stage 5 and Stage 6 of the SACAP defined work stages under "Standard Service" in various SACAP Board Notices as published from time to time in the Government Gazette.

6.2 Ethics and integrity

All parties are to act the highest levels of ethical behaviour and integrity when employed by the State on its projects. Attention is drawn to the following:

6.2.1 Fair administration

The Promotion of Administrative Justice Act, 2000 (Act 3 of 2000) gives effect to the rights provided for the Bill of Rights in Section 33 of the Constitution (Act 108 of 1996), namely that everyone has the right to administrative action that is lawful, reasonable and fair and must be furnished with written reasons where their rights have been adversely affected by administrative action. The Constitution also provides for the review of administrative action by a court, or where appropriate, an impartial tribunal, and imposes a duty on the State to give effect to the rights provided for. The Principal Agent must be acquainted with this legislation and act in accordance with the provisions of this Act.

6.2.2 The Prevention and Combating of Corrupt Activities

The Prevention and Combating of Corrupt Activities Act, 2004 (Act No. 12 of 2004) is applicable to both the public and private sector, makes corruption and related activities an offence. It is considered an corrupt practice for Public officers to have a private interest in a contract connected with the public body that employs them except where the interest is in a stock exchange listed company or their conditions of employment do not prohibit such involvement in a contract.

The direct or indirect offering or receiving of gratifications underlies the above-mentioned corrupt activities. Gratification in terms of the Act includes:

- Money, whether in cash or otherwise
- Any donation, gift, loan, fee, reward, valuable security, property or interest in property of any description, whether movable or immovable or any other similar advantage
- The avoidance of a loss, liability, penalty, forfeiture, punishment or other disadvantage
- Any office, status, honour, employment, contract of employment or services, any agreement to give employment or render services in any capacity and residential or holiday accommodation
- Any payment, release, discharge or liquidation of any loan, obligation or other liability whether in whole or in part
- Any forbearance to demand any money or money's worth or valuable thing
- Any other service or favour or advantage of any description, including protection from any penalty or disability incurred or apprehended or from any action or proceedings of a disciplinary, civil or criminal nature, whether or not already instituted, and includes the exercise or the forbearance from the exercise of any right or any official power or duty
- Any right or privilege
- Any real or pretended aid, vote, consent, influence or abstention from voting
- Any valuable consideration or benefit of any kind, including any discount, commission, rebate, bonus deduction or percentage

The Act also makes it an offence to be an accessory to or after the above-mentioned offences as well as to attempt, conspire or induce another person to commit such offences. Any infringement of this Act must be reported to the Director General of the Department immediately it becomes known to the Principal Agent.

6.3 Care and skill

Architectural professionals are expected to exercise reasonable skill and care when carrying out their work for the Department. This means that they should be suitably qualified, have adequate resources to meet the project's requirements and the necessary proficiency to fulfil their instructions satisfactorily. They should ensure they are informed and up-to date with guidelines and statutory requirements relating to the project.

6.4 Tendering procedure

Generally the Department calls for and accepts tenders for the construction of buildings and infrastructural projects. Architects (whether Principal Agent or not) may be asked to assist with

evaluation and to report on the tenders received. Specific consultants may need to assist with this process depending upon the nature of the project.

6.5 Form of Contract

The CIDB requires that the public sector use one of the following standard forms of contract when contracting with main contractors:

- FIDIC (French Initials for International Federation of Consulting Engineers) (1999) (Short contract and Red, Yellow and Silver Books).
- General Conditions of Contract for Construction Works (GCC).
- JBCC Series 2000 (Principal Building Agreement and Minor Works Agreement).
- New Engineering Contract (NEC3) (Engineering and Construction Contract and Engineering and Construction Short Contract).

Generally the JBCC form of contract is used for building construction projects. Note the following:

- The JBCC contract used by the Department is not necessarily the latest edition as issued by the Joint Building Contracts Committee ®
- Some clauses of the JBCC contract may be omitted, modified and new clauses added in the Department's version of the JBCC contract

For international work another form of contract such as FIDIC may be used. If there is any doubt as to the form of contract to be administered, the Architect or Principal Agent is to ask the Departmental Project Manager to confirm the form of contract applicable.

6.6 Administration of the Contract

The contract is a vital document as it is a legally-binding commitment between the contractor and the Department to deliver the project. The Architect as PA must administer this contract impartially and even-handedly between both parties. Thus it is imperative that the architect be thoroughly acquainted with the provisions of the applicable contract.

Certain of the provisions of the JBCC contract are reserved for the Director General of the Department of Public Works or, by delegation, his authorised representative. The provisions that are reserved are:

- Extension of the contract period
- Nomination of sub-contractors
- Approval of Contract Instructions
- Actions to be taken should the contractor be in default
- Cancellation of a contract

6.7 Handing over of the Site

It is the prerogative of the Project Manager, on behalf of the Director-General, to conduct the handing-over-of-site meeting. On large and prestigious projects this may be preceded by some form of ceremony involving various dignitaries as the Department may deem appropriate.

This is an important meeting and a contractual formality. The Departmental Project Manager should chair this meeting and is responsible for taking and issuing the minutes of this meeting only. The Architect will be advised by the Project Manager of the time and date of the meeting and the Architects attendance there is required. Subsequent meetings are normally chaired by the Architect. The Architect is responsible for taking and distributing the minutes thereof. If a Consultant Project Manager (non Departmental) is appointed he may chair the further site meetings. In this event the role of Consultant Project Manager and Principal Agent should clearly be defined in writing by the Departmental Project Manager.

As the scope of State projects vary considerably, the following list of items, but not limited to these, is offered for discussion and clarification between the various parties:

- Contractor must make the name(s) available of his representative(s) for all contractual matters relating to the site as well as the name of his foreman and a responsible person in accordance with the Occupational Health and Safety Act
- Role of / and relationship between local community (Project Steering Committee), property owners (client Department), general public and Local Authority and the contracting parties.
- Access to site – general access and restricted access such as at border posts, prisons and SANDF bases. Furthermore the physical location of access points for the contractor should be pointed out and noted in the minutes
- Overnight accommodation on site for watchmen etc. on properties such as SANDF bases which are not near towns with a functioning campsite
- The supply of water and electricity – whether included for supply by contractor or Client and the location of supply such as boreholes, rivers or municipal supply. Under no circumstances may water be drawn from fire hydrants. Due to the scarcity of water some provinces and or local authorities may restrict or forbid the use to potable water on building sites
- Any issues related to effluent, rubbish and building rubble on remote sites or sites with restricted access due to security considerations
- Any restrictions related to working hours, generation of noise or vibration
- Any pegs, benchmarks and other site significant features

6.7.1 Forms

Use should be made of the relevant PRM (currently PRM032 as amended from time to time) form for recording site handover data. Failing the use of this form the Architect is to use the latest version of the JBCC "Site Possession Certificate" as published by the JBCC.

6.8 Drawings

6.8.1 Drawings; handover

During the site handover meeting the construction drawings must be handed over to the contractor. This contractual formality should be recorded in the minutes and the contractor must sign for all the documentation. The following list of drawings and documentation is offered as guideline but the scope of the project should determine the list of documents required:

- 1 x Site instruction book with numbered pages – generally in triplicate binding
- 1 x Visitors book
- 2 x copies of name board drawing, 1 x copy for contractor and 1 x copy for principal agent to prepare
- 3 x sets of architectural drawings – including all applied documents such as schedules
- 3 x landscape architects drawings
- 1 x PW371 Part A – General Specification
- 1 x PW371 Part B – Project specific specification
- 3 x sets of structural engineering drawings
- 3 x sets of civil engineering drawings
- 3 x sets of electrical engineering drawings
- 3 x sets of mechanical engineering drawings
- Bills of quantities and specifications, 1 x priced copy plus 1 x blank copy, supplied by Quantity Surveyor
- Other drawings and documents as appropriate to the project – these may be service specific drawings and documents

6.8.2 Drawings; Supplementary

The architect is responsible for the issue of three copies of all supplementary drawings and other documentation to the contractor as may be required for exposition of the works. The architect must keep a record of all issuances of documentation and record the signature of the contractor or the contractor's nominated representative as receipt of all documents issued. This applies to all documentation required for Contract Instructions (formerly known as VO's).

6.9 Construction program

Immediately after the site handover the Contractor is required to prepare and submit a detailed construction program to the Principal Agent. This program must take into account all trades and specialist services and aspects of the works also allowing for any procedural 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 the PA is satisfied that the program is adequate, a copy must be submitted to the Departmental Project Manager. The PA must advise of any subsequent amendments to the construction program. The Contractor must amend the program regularly as required but still within the original or extended contract period.

6.10 Construction progress

The PA and professional team are responsible for monitoring and reporting upon the progress of the construction of the project.

6.10.1 Monitoring of progress and reporting

The Principal Agent must monitor the progress of the contract continuously against the approved program. Progress of the work, and of all disciplines, must continuously and realistically be reported upon in the minutes of site meetings.

With reference to, and as agreed upon, in the PEP the professional team must report using the Key Performance Indicators (KPI's) stated in the PEP. This must be in accordance with the frequency and format as agreed in the PEP. This could include, but is not limited to:

- Cash flow monitoring
- Physical progress of project, time based milestones etc.
- Specific phase completion
- Co-ordination meetings (frequency and between what parties)
- Reports to Departmental Project Manager (frequency – weekly, bi-weekly, monthly etc.)
- Formal site meetings

Additional reports may be submitted to the Project Manager if necessary. The performance or non-performance by the Contractor in relation to the program and reference thereto in warnings issued to the contractor are important if any action against the Contractor becomes necessary at a later stage. Refer here to PLC Directive 1 of 2015 of the Department of Public Works. This is attached as addendum D. This Directive is also available from the Departmental Project Manager.

6.10.2 Delays and procedures

Any delay or potential delay in the progress of the work must be investigated and the cause thereof ascertained and this must be reported upon and noted in the minutes of the next site meeting. What steps and by whom these are to be taken to rectify and/or mitigate these delays must likewise be noted in the minutes.

6.10.3 Default by the professional team

Delays are usually occasioned by one or a combination of the following:

- The Contractor reports circumstances in which a delay is foreseen, the PA 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
- If the delay is due to failure in the supply of necessary architectural drawings or instructions to the Contractor the Architect must immediately rectify the matter
- If the Architect is unable to do so, e.g. due to delay on the part of other Consultants, the architect must instruct them in writing to rectify the matter immediately and send copies of these instructions to the Project Manager

Any delays occasioned by the Professional team will be viewed in a serious light by the Department as these may compromise efforts by the Department to take legal actions against defaulting contractors.

6.10.4 Default by the client Department

If the delay is due to any other cause outside the control of the Contractor or the professional team such as:

- Changes in the requirements of Department of Public Works or the User Department
- Organised work stoppages by any workmen not due to any action on the part of the Contractor

The Architect must instruct the Contractor to follow the procedure which should be followed in terms of the relevant sub-clauses of the specific Conditions of Contract relating to extension of the contract period.

6.10.5 Default by the contractor

Delays occasioned by the contractor which manifest in one or a combination of the following indicators:

- Progress is unsatisfactory
- No work is being done
- No workmen on site
- Quality is unsatisfactory and rectifying this can cause delays
- Written instructions are not complied with
- Expenditure falls behind projections when compared with the expected cash flow

If the Architect/PA is satisfied that the delay is due to default by the contractor it must be addressed by reporting it to the Departmental Project Manager in writing with supporting documentation. The Project Manager may recommend the Architect address a suitable warning letter to the contractor in terms of the applicable contract.

Should the delay persist or a further delay is experienced the same procedure is to be followed in that the architect must inform the Departmental Project Manager. The Departmental Project Manager must decide on further action such as placing the contractor *in mora* or make a determination to terminate the contract.

Refer to Professional Legal Services Committee Directive 1/2015 – Default by Contractor, which can be requested from the Departmental Project Manager. This is a very important document which sets out the legal position of the contracting parties.

6.11 Extensions of the contract period and claims for compensation

6.11.1 Actions by the Architect/principal Agent

All claims for extension of the contract period must be dealt with strictly in terms of the form of contract being used and preferably continuously during the contract period. After receiving either **notification of intention** to submit a claim **or a claim** for extension of the contract from the contractor the Architect / Principal Agent must investigate the claim and submit to the Departmental Project Manager a comprehensive motivation and recommendation. The recommendation must contain the following in respect of every claim:

- Number of claim – unless otherwise instructed by the project manager the number shall be in the following format: number of claim in sequential format, months and year and the WCS number. For example. 1-05/2016: WCS 123456 or 2-May/2016: WCS 987654
- Date of the event leading to the claim
- Period of time claimed by the Contractor
- Date on which claim was made
- Reasons given by the Contractor
- Concise but comprehensive evaluation of claim looking especially at timeous claims in terms of contract, comparison with Contractor's program, concurrent actions, possible mitigating actions taken by the Contractor etc.
- Recommendation in respect of extension proposed, condonation of events and actions taken and the application of penalties in respect of the applicable contract

6.11.2 Claims involving other disciplines/professionals

In the case of a claim for extension of the contract period or compensation on purely engineering services the Principal Agent must forward such claim to the applicable consultant for a concise but comprehensive evaluation of claim looking especially at timeous claims in terms of contract, comparison with Contractor's program, concurrent actions, possible mitigating actions taken by the Contractor etc.

The applicable Consultant Engineer's comment/recommendation, must be sent via the Principal Agent to the Project Manager, who will rule on the matter.

6.11.3 Actions by the Departmental Project Manager

The Department Project Manager should take the necessary actions in line with Departmental policy and procedures which are revised from time to time. These are as outlined in Departmental Manuals and Policy documents. Discussion of these procedures is beyond the scope of this Manual for Private Architects.

6.12 Inspection, Quality Assurance and Quality Control

6.12.1 Architectural professionals

As outlined in SACAP documents the Architect/PA has certain responsibilities under Stage 5 relating to the supervision of the works. One of these duties is described as “**Inspect the works** for conformity to the **contract** documentation and acceptable in terms of industry standards” (emphasis as per Board Notice). Inspection implies a systematic and thorough review of all portions of the works at regular intervals. Particular attention must be paid to portions of work before it is covered or becomes inaccessible, to ascertain its acceptability. Conformity to the contract documentation is vital to ensure that the Department receives that for which the contractor tendered. This implies that materials and components specified in the project specific specification PW371-B (which is part of the contract documentation) must conform to the relevant SANS standard.

Guidance to professionals

Quality Assurance (QA) usually refers to procedures and actions of an administrative and procedural nature implemented in a quality system so that requirements and goals for a product, service or activity will be fulfilled. Adherence to good design standards such as wet services design to SANS 10252-1 and ensuring that suitably trained and qualified staff work on the project are quality assurance actions.

Two principles included in quality assurance are: "Fitness for purpose" - the product should be suitable for the intended purpose and the principle of "right first time" - mistakes should be eliminated, are fundamental to the architects duties in this regard.

Quality Control (QC) generally refers to verifying that the work and materials used satisfy the applicable standards as specified within the documentation. For example, if the specification calls for all windows to conform to SANS 613 in terms of air leakage rates then checking this by way of the contractor producing the necessary proof is a Quality Control action.

6.12.2 Engineering and other disciplines

Engineering consultants and other professional services providers must inspect and supervise their respective portions of the work. The PA must be appraised of any shortcomings in the quality of the work and issue the necessary instructions to the contractor in terms of the applicable contract being used for the project.

The Principal Agent is responsible for the issuing of instructions, notices and all other communication to the contractor.

This provision does not absolve the Architect from ensuring that engineering service coordination drawings are adhered to by the contractor and the subcontractors, whether nominated, domestic or direct, as the Architect is remunerated for such installations.

6.13 Comprehensive contracts

It is Department policy that there are no Nominated and Selected subcontractors on its projects. The duties of the Architect in terms of supervision and inspection of their work is the same as that for conventional Nominated subcontracts.

6.14 Separate and direct contracts

In cases where the Department has entered directly into separate contracts for engineering services the relevant Consultants are responsible for all supervision of these services, but they will work in close consultation with the Architect/Principal Agent. The Principal Agent is responsible for all supervision of separate contracts only insofar that they form an integral part

of the building project. Refer to the section of this manual that outlines what is considered or not considered an integral part of the project and for which professional fees may be charged by the architect/PA.

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

6.15 Decisions and instructions on site

6.15.1 Preamble

During the course of the erection/refurbishment of the building or works, decisions and instructions may be required to assist the contractor to bring the project to completion. The necessity for decisions and instruction can result from a multitude of factors, particularly in renovation and refurbishment type projects where, as work progresses, problems arise that could not reasonably have been seen or foreseen by the professional team. This gives rise to the necessity for decisions and instructions by members of the professional team. Instructions to the contractor will often have cost and time implications and therefore they must be carefully considered by the professional team before they are formally issued to the contractor. As stated elsewhere in this manual, architects must ensure that their documentation is complete and correct so as to minimise the need for Contract Instructions.

It is good management practice to determine the various modes of communication, who may give and receive instructions at the initial stages of the project. In any event, instructions may only be issued as determined by the specific form of contract that is in use for the specific project.

6.15.2 Authority to issue and receive instructions

Instructions on site may only be issued to the Contractor or his representative, nominated in writing by the contractor, by the Principal Agent or his official nominee. In the case of comprehensive, separate and direct contracts the following applies:

- Comprehensive contracts – the professional consultants are authorised to draw the attention of the main/subcontractor to matters regarding technical points, the quality and other discipline specific matters but only the Principal Agent may issue instructions to the main contractor in writing.
- Separate and direct contracts – the above applies to separate and direct contracts where the Principal Agent is responsible for coordination of these services and they form an integral part of the project. If they are excluded from the project the Principal Agent has no role in the administration of these works.

6.15.3 Instructions and clarification of documentation

The Architect/PA may give instructions to the main contractor by way of site instructions only insofar as they are required to clarify, interpret technical documentation and explain aspects of the project only if they do not imply cost and time implications. In the case of the other disciplines, the consultants must do this in collaboration with the architect/PA.

All instructions that imply or will result in either time and/or financial consequences must be handled by way of formal Contract Instructions and must be approved by the Department.

6.15.4 Contract Instructions – formerly called Variation Orders

Earlier versions of building contracts used in the building industry referred to instructions to the Contractor to, for example, change, supplement or remove defective work (a comprehensive list is contained in the various contract forms) as Variation Orders but this terminology does not appear in currently used versions of the JBCC contract. It has been replaced by the term “Contract Instructions”. This terminology is synonymous with “Variation Order”.

These are formal and contractual instructions to the Contractor to effect work that is different to the work for which the Contractor tendered and the Contractor is obliged to execute these instructions provided that they **do not substantially change** the scope of the works. It must be made clear to all parties that absolutely no work may be commenced with, without the necessary CI being issued. Failure by any party to adhere to this provision may make that party legally liable for any damages.

The Department of Public Works, as an organ of State, has internal procedures to deal with Contract Instructions. The reader is encouraged to read “Variation Committee Directive 1 of 2012” which sets out rules and gives guidance on the handling of CI’s by the Committee nominated to deal with such. This Directive is available from the Departmental Project Manager.

The provisions for varying the Scope of the Works do not mean, nor contemplate, using CI’s for the following:

- Adding works to the Scope of the Works as originally tendered for unless absolutely necessary
- Adding works to completed projects – No CI’s are allowed after issuing the Practical Completion Certificate
- Circumventing the tender or procurement regime of the State
- Correcting insufficient, inappropriate or poor planning by either the Professional team or a Client Department
- Extending the contract period. This is to be dealt with contractually
- To affect the contractual aspects and adjustments of provisional measured work or prime cost items
- To deal Provisional and General items (P&G’s) as these are to be dealt with contractually

Note: CI’s MAY NOT be used where cost of changes can be covered by savings elsewhere. This practice, whilst tolerated in some sectors, is not allowed in the State.

6.15.5 Origins and causes of Contract instructions

Contract Instructions emanate from different causes such as:

- Changes required before the contract is signed; e.g. Co-ordination of documentation reveals errors and omissions that require a CI
- Rectification of discrepancies, errors and omissions in the Contract Documents; e.g. 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

- Changes, due to various reasons, requiring authorization from the Department of Public Works; e.g. Unforeseen site conditions, special foundations, etc. where approval must first be obtained from the Project Manager via Departmental procedures
- Changes due to instructions issued by the Department of Public Works
- Changes requested by Client Departments

Instructions of a minor nature can also result from:

- Instructions required to avoid delay of the Works
- Instructions required to ensure the safety of the Works.

6.15.6 Issuing of Contract Instructions

The Principal Agent is responsible for issuing all Contract Instructions, even those on behalf of the other disciplines involved. The other disciplines should draft the CI to ensure technical and design correctness and then request the PA to issue the CI.

The PA may issue CI's involving minor changes as set below that have **no cost implication**:

- Changes required post tender but before the contract is signed – see bullet point above
- Rectification of discrepancies, errors and omissions in the Contract Documents; out above such as relating to documentation clarification
- The functioning of the building is improved thereby

The PA requires approval from the Department via the Departmental Project Manager for CI's that have **a cost implication**. For example, but not limited to, the following:

- Changes, due to various reasons, requiring authorization from the Department of Public Works
- Changes due to written instructions issued by the Department of Public Works
- Changes requested in writing by Client Departments that are deemed necessary

The Department uses its own forms for this purpose. These forms are currently PRM037 and PRM038, as amended from time to time, and are available on the Department website or from the Department Project Manager.

In completing the PRM forms for approval the PA should submit, amongst other, the following information:

- Motivation
- Estimated cost; refer to the terms of Circular 33 of 2013; VO Committee Directive 3 of 2013; the "Submission of financial information of variation orders"
- An assessment of any fruitless expenditure
- 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.

6.15.7 Timeous issue of instructions

Whatever the origin of the change required Contract Instructions are subject to various Departmental processes which can be time consuming and hence the need for timeous submission of these to the Departmental Project Manager. Committees that approve CI's only meet according to their own program and CI's submitted late may have to stand over to the following meeting. The implications are that the Contractor and the professional team must be made aware of this provision and be pro-active in anticipating possible CI's.

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 Contract Instructions, particularly extras, may prevent the Main Contractor from carrying out extra work concurrently with other work already included in the contract.

6.16 Financial control

Many Contract Instructions have time and budgetary implications and 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:

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

6.17 Handing over procedures

Handing over procedures must be dealt with strictly in accordance with the conditions of the specific contract used. As stated elsewhere in this manual the Architect must regularly inspect and direct the Works in order to achieve the standard of finish required and issue site instructions and Contract Instructions accordingly. At handover there should **not** be extensive work that is either incomplete or unsatisfactory (not according to the contract documentation) to the Architect.

6.17.1 Practical Completion

This is defined as the stage when the Works are substantially complete and can be used for the purposes intended. In State buildings this implies that Client/user Departments may thereafter occupy the building and conduct their affairs of State for example such as hold a trial (in the case of a court), conduct policing operations (in the case of a police station) or incarcerate inmates (in the case of a prison). If these types of functions are not possible then the building or section of a building is not in a state of Practical Completion.

The PA is directed to the following implications upon issuance of a certificate of Practical Completion:

- The contractor is no longer obliged to carry out a Contract Instruction in relation to additional work
- The employer takes possession of the works subject to any right of retention (lien)
- Risk passes to the employer and the contractor's insurance obligations are terminated.

The PA must arrange with the Departmental Project Manager for a joint inspection of the works which should preferably include the Client/User Department prior to the issuing a Certificate of Practical Completion. Any defects or incomplete work shall be listed and dealt with in accordance with the specific form of contract use for the project.

6.17.2 Contract Completion Report

The Principal Agent must complete a Contract Completion Report (PRM043 or form as amended) which is obtainable from the Departmental Project Manager.

This form must give the information as requested including any problems experienced with the contractor.

6.17.3 Final Completion

The issuing of a Certificate of Final Completion must be issued strictly in accordance with the provisions of the form of contract being used for the project.

6.18 Close out procedures

The Scope of Work of the Architect is described in detail in Chapter 2 of this manual. The Architect is to assist the professional team to attend to the final account and the preparation of documents to be submitted to the Department.

The latter includes but is not limited to the following:

- The "as-built" drawings of the project
- Guarantees related to equipment, plant and other paraphernalia installed under the building contract
- Warranties related to equipment, plant and other paraphernalia installed under the building contract
- Manuals of operation and/or maintenance related to equipment, plant and other paraphernalia installed under the building contract
- Certificates of Compliance with any Statute, Regulation or by-law of any Local Authority
- Statements or undertakings that design standard or installation complies with any SANS contemplated in this manual

ADDENDUM A – DUTIES OF PRINCIPLE AGENT IN TERMS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT (81 of 1993)

Summary of the responsibilities of an Architect as Health and Safety Officer in terms of the Occupational Health and Safety Act (Act 81 of 1993 as revised)

The Architect is usually appointed as the principal agent in terms of the client/architect agreement for a building project. When operating as such, the OSH Act requires that the Architect then also act as the Health and Safety Agent

A1.0 Definitions and salient aspects concerning the architect's responsibilities

A1.1 Health and Safety Officer

The health and safety officer (also called the construction safety officer) is the competent person appointed by the contractor to oversee safety aspects of the builder's work on site. This officer is in control of all safety related aspects on site.

A1.2 Health and Safety Agent of the Client

The health safety agent of the client is the person appointed by the client, who acting on behalf of the client, compiles the specification which is captured in the tender documentation. The specification should be site specific and not generic, for obvious reasons. (Vide Item 4.5 of the Construction Regulations of the OHS Act.) The Architect in his/her role as principal agent also becomes the health and safety agent of the client and may in turn delegate this responsibility to a competent person. The architect shall coordinate the work of the Health and Safety Agent along with the work of the other consultants.

A1.3 Health and Safety Specification – by the H & S Agent

The Health and Safety Specification is compiled by the H & S Agent and is an outline document for incorporation in the tender documentation, pertaining to the generally expected conditions at a particular building site and building contract.

A1.4 Health and Safety Plan – by the Main Contractor

The health and Safety Plan is compiled by the main contractor and contains the detailed implementation of the H & S Specification as assembled by the contractor for his particular building works and site. The H & S Plan should include the following: risk assessment, a monitoring plan and a review plan.

A1.5 The principal agent – compliance with legislation

The Architect if principal agent is required to comply with legislation (Letter of invitation, item 5(c)), including the Occupational Health and Safety Act (Act 85 of 1993) and all regulations

promulgated under the Act. The Architect is furthermore required to comply with the stipulations of the letter of invitation and should he/she not be able or willing to do so, the invitation must not be accepted.

A1.6 The architect's responsibilities in terms of legislation

If the architect has accepted the Letter of Invitation/SLA, he/she is required to comply with the stipulations contained therein.

The architect therefore becomes the health and safety agent of the client by virtue of having accepted the Letter of Invitation/SLA.

A1.7 Specific tasks required of the Architect as Principal Agent

The Architect as Principal Agent cannot delegate his responsibilities to a consultant although his duties may be delegated.

- The architect or his consultant may adapt the pro-forma H & S Specifications compiled by the Department for each specific project.
- The architect or her/his consultant should ensure that a competent person is appointed by the main contractor in the position of Health and Safety Officer (Items 2 and 8), that the contractor has a structure in place to perform the functions and duties required of him in terms of the OHS Act and that the above functions and duties are monitored on an ongoing basis.
- The above consultant should be appointed on an hourly basis and when the running total of the consultant's fees exceeds 3% of the fee package of all the consultants on the project, the Departmental Project Manager should motivate to his Director of Projects for a continuance.

A1.8 The role of the building contractor

The building contractor prices in his tender for the specification set out in the tender documents, and should appoint a construction supervisor. On smaller contracts the construction supervisor oversees the implementation of the Health and Safety Plan, but on larger contracts a dedicated Construction Safety Officer should be appointed, all according to the regulations in terms of the OHS Act.

ADDENDUM B – PRINCIPAL AGENCY; NATIONAL ENVIRONMENTAL MANAGEMENT ACT (Act 107 of 1988 as revised)

B1.1 Compliance with the Act

The work of the consulting architect shall comply with the Act, with particular reference to the schedules published in terms of the act and amended from time to time. The Principal Agent, (whether it be the architect or not) shall coordinate the actions required in terms of the Act in consultation with the Landscape Architect.

B1.2 Schedules

Attention is drawn to the schedules, numbered 1 to 5 and specifically, but not exclusively, in the regard listed below.

B1.2.1 Schedule 1

Identification of geographic areas in which specified activities require authorisation by the Director General: Environmental Affairs and Tourism.

- An area identified for the conservation of biodiversity
- An area identified for the conservation of water resources
- An area identified for the conservation of landscape or geological features
- An area identified for the for the conservation of archaeological, palaeontological, architectural or cultural sites
- The core areas of biosphere reserves
- An area identified in terms of international agreement (i.e. world heritage sites)

B1.2.2 Schedule 2

Activities that require environmental impact assessment:

Construction of certain new facilities or upgrading or closure of facilities, or certain magnitudes thereof, including inter alia:

Generation of electricity; nuclear facilities; handling of asbestos; bulk transportation of dangerous goods; airports, marinas and harbours; transfer of water; treatment of effluent; incineration; rail transportation; golfing activities; new development larger in area than 20ha; roads, dams & mining, etc.

B1.2.3 Schedule 3

Activities that require initial assessment:

Construction or upgrading of certain facilities or certain magnitudes thereof, including inter alia:

Storage of coal; resorts, hotels or hospitality facilities for more than 20 guests on more than 1ha with no municipal sewerage connection; golfing activities; sporting facilities for more than 8000 spectators on more than 3ha; animal slaughtering; concentration of animals; storage of petrol or diesel in quantities > 46 m³; bulk transportation of water or sewerage; above ground electricity cables; advertisements (signs or boards); any purpose within 1 in 10 year flood lines; off stream

storage of water; water tanks >75m³ with height >15m; cremation; waste treatment >10m³/ day; construction in the sea; cemeteries; abstraction of water @ > 10m³/ day; removal/ transformation of indigenous vegetation > 3ha; masts > 15m; residential and mixed development > 2.5ha; transformation of public open space/ protected area into another use, etc.

B1.2.4 Schedule 4

Activities requiring initial assessment in identified areas:

Construction or upgrading of certain facilities or certain magnitudes thereof, including inter alia:

Roads and tracks where more than 250m² must be removed; off-road driving; elevated water pressure tanks > 10m³; treatment plants > 100m³; outdoor advertisements; tourism facilities; camping & picnic sites > 500 m²

B1.2.5 Schedule 5

Activities requiring assessment in respect of their potential impact on air quality:

Construction, upgrading or decommissioning of facilities identified under legislation regulating air quality or pollution.

Activities listed in the Second Schedule to the Atmospheric Pollution Prevention Act, 1965 (Act 45 of 1965).

ADDENDUM D – PROFESSIONAL LEGAL COMMITTEE 1/2015

PROFESSIONAL LEGAL SERVICES COMMITTEE (PLC)

PLC DIRECTIVE 1 OF 2015

**Subject: REPUDIATION OR BREACH OF CONTRACT BY THE CONTRACTOR
ALSO REFERRED TO AS DEFAULT BY THE CONTRACTOR**

Reference Document(s):

1. General Conditions of Contract for Engineering Works Second Edition 2010 (hereinafter referred to as "the GCC2010")
2. Principal Building Agreement of the Joint Building Contracts Committee Edition 4.1 March 2005 (hereinafter referred to as "the JBCC2005")
3. Legal Directive 1 REV1 –cancellation of contracts is herewith formally withdrawn

EXECUTIVE SUMMARY

The Department of Public Works, as "the Employer" in building- and engineering contracts, only enters into Contracts with Contractors in **written format** – never verbal/oral. This is done to relieve the burden of proof. Currently the Department uses the JBCC2005 and GCC2010. New versions of both contract formats have been accredited by the CIDB. The Department plans to implement the new versions later in 2015, at which stage all Project Managers will be formally informed.

The law of South Africa requires that contracts must **be honoured**. In the legal system of the Republic of South Africa, there is inherent protection provided to the innocent Party – meaning that the law of the country will come to the rescue of the innocent Party if the other Party does not abide by the Conditions of the Contract. The innocent party has to take action to have its contractual rights protected.

The **actions required** in such instance depend on the Conditions of Contract. The JBCC has altered the general law, stating, in both the 2005 and 2014 versions, that the period in which the Contractor has to remedy the repudiation/breach is ten (10) working days from the date of receipt of the document placing him in mora. For the GCC the principle is the same except that the GCC uses a reference to fourteen (14) days – which are calendar days.

A Contractor which does not abide by the Conditions of Contract, **must be placed** in mora by the Project Manager/Principal Agent (JBCC2005)/Engineer (GCC2010). If the remedial action is not forthcoming within the time span of 10 working days/14 calendar days, **the Employer can, and must**, institute the threat of remedial measure it made in its mora notice. Remedial measures in cases of repudiation or breach of contract are normally a) cancellation of the Contract; and b) institute a claim for damages.

The behaviour and actions of the Project Manager/Principal Agent must at all times be such that performance by the Contractor is not interrupted or delayed. Section 6 of this Directive outlines the required actions in event where the Contractor is found repudiating or defaulting on the Conditions of Contract. Sample letters can be found at the end of this Directive.

1. BACKGROUND 

1. **BACKGROUND:**

- 1.1 Except for the disposal of real estate/fixe property, agreements between Parties need not be in writing to be legal and binding on them. A legal and binding Contract can therefore be constituted between Parties by verbal/oral means or even by mere conduct.
- 1.2 In case where the rights and obligations of the Parties are simple, or Parties are honest and sincere in all their involvement to the Contract, or the amount involved is small, or the performance to be rendered is small/simple/quick to deliver, they may get away with a verbal/oral Contract.
- 1.3 Where the provisions of the Contract are more substantial, and the Parties have agreed on a myriad of rights and obligations, and where larger sums of money and complexities in execution of the Contract become relevant, the reliance on the honesty, integrity, sincerity of the Parties and their recollection of the provisions agreed on becomes problematic. In such case the Parties normally opt to reduce the agreement to writing and have that signed. Contracts in writing, albeit not a necessity to be binding in law, have the advantage of reducing the risks between Parties and generally make for more structured legal relationships between them. The burden of proof is largely relieved if a Contract is in writing. Such is the case then with agreements relating to building- and engineering Works.
- 1.4 The construction industry is a complex environment in which Parties have to contract with one another. The product, for which Parties contract with one another, requires to be manufactured (cannot be purchased from the shelf) over a span of time, requires finances and resources (both human and other), requires large commitment, is riddled with risks, is subject to external influences (nature and mankind), and normally is of a complex nature. Agreements between Employer (the Party sponsoring a project) and a Contractor (the Party responsible for the product) are therefore, almost without exception, constituted in writing as a pre-requisite to be legal and binding.

- 1.5 National Treasury Regulation 16A6.3(a)(ii) determines that Conditions of Contract in the case of bids relating to the construction industry must be in accordance with the prescripts of the Construction Industry Development Board (hereinafter referred to as "the CIDB").
- 1.6 The CIDB has promulgated regulations to give effect to the requirement stated in National Treasury Regulation 16A6.3(a)(ii). These regulations are referred to as the CIDB's "Standards for Uniformity in Construction Procurement" – hereinafter referred to as "the SfU".
- 1.7 The SfU prescribes the use of Contract Formats to organs of state. In terms of the CIDB's mandate, the following Contract Formats have been accredited and included in the SfU (referring only to the latest versions):
- 1.7.1 JBCC¹2007
 - 1.7.2 GCC²2010
 - 1.7.3 FIDIC1999
 - 1.7.4 NEC (New Engineering Contract)
- 1.8 In the Department of Public Works's case, it was earlier decided that the JBCC2005³ will be retained for building projects (as the JBCC2007 was found not suitable for departmental use) and that the GCC2010 will be adopted for engineering projects (after the department also used the GCC2004 and 1990 versions prior to the issue of subsequent versions)
- 1.9 "Legal Directive 1 REV1 of 2001- cancellation of contracts" dealt with the same subject as the present Directive. "Legal Directive 1 REV1 of 2001- cancellation of contracts" is herewith formally withdrawn.

2. PARTIES HAVE TO ABIDE BY THE CONTRACT:

¹ Accreditation of a new version: "Edition 6.1 – March 2014" has been promulgated by the CIDB on 10 July 2015. Contact Data for this version has been compiled and forwarded to the State Attorney for comment. Implementation of the new version within DPW projects is envisaged for September 2015 – Notice will be issued for such at the appropriate time. For the time being JBCC 2005 remains the standard for DPW

² Accreditation of a new version: "Second Edition: Revised 2014" has been promulgated by the CIDB on 10 July 2015. Contact Data for this version has been compiled and forwarded to the State Attorney for comment. Implementation of the new version within DPW projects is envisaged for September 2015 – Notice will be issued for such at the appropriate time. For the time being GCC2010 remains the standard for DPW

³ The use of the JBCC2005 version is with the approval of the CIDB

- 2.1 In PLC Directive 3 of 2014, the subject of default by Professional Service Providers (hereinafter referred to as "PSP", if in the singular, or "PSPs", if in the plural) (also referred to as "consultants" in certain quarters) was dealt with. As the principles of law are equally applicable to whether a PSP or a Contractor breaches the Contract, some of PLC Directive 3 of 2014 will be herein repeated for completeness sake. It is advisable that PLC Directive 3 of 2014 be read together with (this) PLC Directive 1 of 2015.
- 2.2 In the legal system of the Republic of South Africa,⁴ there is inherent protection provided to the innocent Party – meaning that the law of the country will come to the rescue of the innocent Party if the other Party does not abide by the Conditions of the Contract. The underlying legal principle for this is to be found in Roman Jurisprudence - namely the doctrine known as "*pacta sunt servanda*" which means "one must fulfil one's contracts; agreements must be honoured".⁵
- 2.3 The Government of the country provides such protection through the civil courts.
- 2.4 The law, however, does not automatically come to the rescue of a Party against whom a wrongful deed has been committed in the form of repudiation or breach of Contract. The law requires Parties to abide by the Conditions of Contract and if one does not, the innocent Party has to take positive steps to unlock the assistance the law can ultimately provide.
- 2.5 The legal ties between Parties are governed by the Law of Contract. The Law of Contract is essentially the legal rules according to which Parties have to behave when they are in Contract with one another and provides means according to which Parties can react to events which pose a threat to the position of the innocent Party within the contractual relationship. As such, the Law of Contract is the same whether the Contract is with a Contractor, appointed to execute construction works, or whether the contract is with a PSP, appointed to render a professional service as Agent of the Employer. A Party, against whom

⁴ Being the Roman-Dutch law

⁵ Ex CICERO *De Officiis* III.xcii

has been wronged, must take certain actions to have his/her/its position protected and these actions are the same irrespective whether the contract is with a Contractor or a PSP.

2.6 The actions required in such instance depend on the Conditions of Contract. If the Conditions stipulate that the other Party has to be notified of repudiation or breach, then such notice must be served on the other Party.⁶ In general conversations such notice is referred as "placing the other Party *in mora*". Such notice also normally contains a threat of remedial measure, notifying the other Party as to what actions will be taken by the innocent Party should the repudiation or breach not be remedied by the guilty Party within a specified period of time set by the innocent Party, which period must be reasonable given the facts and circumstances pertaining to the project and the extent of repudiation or breach. No rule of thumb can be stated as to what constitutes a "reasonable time period".

2.7 Thus far the position in general law. Whether the forms of Contract in use in the Department of Public Works follow the general law, or whether those amend the general law, will be dealt with hereinafter.

3 WHAT ACTIONS ARE REQUIRED IF THE CONTRACTOR IS IN REPUDIATION OF THE CONTRACT OR IN BREACH THEREOF – IN OTHER WORDS IF THE CONTRACTOR IS IN DEFAULT:

3.1 Bringing the subject matter closer to home, this Directive is to provide guidance to the Project Manager in cases where the Contractor, whose tender has been awarded for the project, does not live up to the Conditions of Contract. For the sake of this Directive the Employer⁷ is assumed to be the innocent Party.

3.2 If, in general law (and assuming for the moment there is no JBCC or GCC applicable), the performance of the one Party is clear and unambiguous and the time by which such performance must be tendered is stated in definite terms (either directly or can be derived

⁶ The JBCC2005 and GCC2010 contain such specific condition

⁷ DPW is the Employer in this Directive

therefrom with ease), the Party that has to perform is said to be in *mora ex re*, which means the Contract is clear in its determination when performance has to happen and therefore places no obligation of the other Party to state when performance is required. The latter Party does not have to place the defaulting Party in *mora* as *mora ex re* means such Party is already automatically in *mora* to perform by virtue of a clear Contract. In the Contracts between the Department and Contractors, such is the situation – it is normally always clear how long time period the Contractor has to his/her/its disposal to perform such that the Works are ready to receive a Certificate of Practical Completion. The Contract forms used by the Employer herein are labelled "design by employer" which means that the product to be performed by the Contractor is clear and certain (in the form of drawings, specification and bill of quantities). In the Contacts between the Department and Contractors, the defaulting Contractor is actually, when viewed against general law, in *mora ex re* from the time the Contract has been constituted. In terms of general law, therefore, the Employer does not have to notify the Contractor that he is in repudiation or breach as the Contract does so automatically already. **But herein lies a twist! The situation is not as per general law** – an alteration has been effected as will be explained hereinafter.

3.3 The general law has been amended in the Contracts which the Department (as Employer) enters into with Contractors in the case of building- and engineering projects for the Department of Public Works. In terms of the Law of Contract, a Contract may alter general law as long as no unlawful situation is thereby created or is not *contra bonos mores*.⁸ **In both the JBCC and GCC formats of Contract, the general law has been altered.**

3.4 Due regard is to be had for clauses 36.2 (clause 41 - state provisions) and 36.3 (Contract Data in respect of clause 36.3) in respect of the JBCC2005⁹.

3.4.1 The former reads:

⁸ Latin expression which means: Contrary to public opinion and morals

⁹ In the JBCC2014 version, the clause numbers will be 29.2 and 29.3: The former will read: "Where the employer contemplates terminating this agreement [29.1], the **principal agent shall give notice** to the contractor of a specified default [29.1.1-3], to be remedied within ten (10) working days of the date of receipt of such **notice**" [bold type is as per the original document quoting from][underlining is writer's emphasis]. The latter will read: "Where the **contractor** has not remedied a specified default within such period [29.2] the **employer may give notice** to the contractor of termination of this **agreement forthwith**" [bold type is as per the original document quoting from] [underlining is writer's emphasis]

"Where the **employer** considers cancelling this **agreement**, the **principal agent** shall be instructed to notify the **contractor** of such default in terms of 36.1. The issuing of such notice¹⁰ shall be without prejudice to any rights that the **employer** may have" [bold type is as per original document quoting from] [underling is writer's emphasis]

3.4.2 The latter reads (after the provision in the Contract Data has been applied to the wording of the original document quoting from):

"The **employer** may give notice of cancellation should the contractor remain in default for ten (10) **working days** after the date of issue of such notice of default"
[bold type is as per original document quoting from]

3.5 Due regard is also to be had for clause 9.2 of the GCC2010¹¹: It reads:

9.2.1 If:

9.2.1.1

9.2.1.2

9.2.1.3

9.2.1.3.1

Up to and including 9.2.1.3.7

then the Employer may, after giving fourteen (14) days written notice¹² to the Contractor, (with specific reference to this clause) to remedy the default, terminate the Contract and order the Contractor to vacate the Site and hand it over to the Employer." [underlining is writer's emphasis]

3.6 At this stage it may be salient to mention that the JBCC2005 refers to "cancellation of the contract" while the GCC2010 refers to "terminate the Contract". The said reference in the two Contract formats means the same – i.e. they refer to the ending of a contractual relationship. Incidentally, the JBCC2014 now also uses the reference to "termination" at the expense of

¹⁰ The reference to "notice" in such context means "placing the contractor *in mora*"

¹¹ In the GCC Revised new version: "Second Edition: Revised 2014" the wording remain the same.

¹² The reference to "notice" in such context means "placing the contractor *in mora*"

"cancellation". There is thus a measure of standardisation in the new versions of the JBCC and GCC formats of Contract.

- 3.7 Referring to the underlined wording above as writer's emphasis, it needs to be understood that the "notices" thus referred to are references to a document in which the Contractor is placed *in mora*. In other words, the Contractor's attention is specifically drawn to his/her/its repudiation/breach of Contract and instructed to remedy such repudiation/breach within a certain time period.
- 3.8 Whereas in general law the time stated for performance has to be "reasonable", the JBCC has altered the general law, stating, in both the 2005 and 2014 versions, that the period in which the Contractor has to remedy the repudiation/breach is ten (10) working fays from the date of receipt of the document placing him/her/it *in mora*. For the GCC the principle is the same except that the GCC uses a reference to fourteen (14) days – which are calendar days (and if compared to the JBCC is actually the same period – 14 calendar days equate to 10 working days).
- 3.9 A Contractor which does not abide by the Conditions of Contract, **must be placed** *in mora* by the Project Manager/Principal Agent (JBCC2005)/Engineer (GCC2010) - depending on the delegations and the conditions¹³ under which the Principal Agent/Engineer has been appointed - as the recognised representative of the Employer in the Contract. If the remedial action is not forthcoming within the time span of 10 working days/14 calendar days, **the Employer can, and must**, institute the threat of remedial measure it made in its *mora* notice. Not acting in accordance with the threat made in the *mora*-letter will later on in the Contract Period have an adverse effect on the Employer's rights should the Contract not be cancelled at the present stage but needing to do so at a later stage. A clear warning is issued herein to Project Managers not to fall prey to such situation.

¹³ At this stage it must be highlighted that in the JBCC2005 and GCC2010 the Principal Agent or Engineer respectively had their powers limited in the Contract Data – JBCC: Clause 5.1.2 and GCC2010: Clause 3.1.3. The Contract Data for JBCC2014 and GCC2014 will not contain such limitation any longer. In the eye of the Contractor the powers of the Principal Agent/Engineer will be as stated in the respective forms of Contract. The powers of the Agents will, in the background, be limited by provisions in the Contract between the Employer and the Agent. These provisions are already in the standard documentation of the Department relating to the appointment of Agents – refer to clause 5.5 c) therein.

3.10 Remedial measures in cases of repudiation or breach of contract are normally confined to a) cancellation of the Contract; and b) institute a claim for damages if the appointment of a second/further Contractor proves to cost the Department more than would have been the case had there not been repudiation/breach and the need to cancel the Contract.

4. WHAT CONSTITUTES REPUDIATION OR BREACH BY THE CONTRACTOR AND WHEN WILL CANCELLATION OF THE CONTRACT BE RELEVANT?

4.1 In the legal relationship between the Employer and a Contractor in the construction industry, the repudiation or breach are dealt with in the Contract format. In JBCC2005 these can be found in clauses 35.1.1 and 35.1.2. In JBCC2014 the clauses are 29.1.1 to 29.1.3. In GCC2010 and GCC2014, the clause is 9.2.1 (to be read in its entirety).

4.2 If the Contractor is found to be in repudiation or breach in terms of the clauses referred to in 4.1 above, the time is ripe to place him/her/it *in mora* as explained earlier herein. Should the Contractor not remedy his/her/its performance to satisfaction, the Contract must be cancelled/terminated. Termination/cancellation may be seen as a harsh step and some Project Manager in the past veered away from such drastic approach. The message herein is that there is no discretion herein. If a Contractor does not abide by the Contract, neither the Principal Agent/Engineer nor the Project Manager has the discretion to accept such unacceptable performance. It is held herein that the Project Manager must act in accordance with the powers of discretion (read: delegations) given to him or her. Consultation with higher authority in terms of the Project Management Delegations document therefore is essential – either for guidance but definitely for authority.

4.3 It must be appreciated that the contractual performance of the Contractor has a bearing on two aspects of the Project Manager's function within the Employer-body. Firstly, the Contractor's performance relates directly to the rate of expenditure. A repudiating/defaulting Contractor will almost always influence the expenditure level which Project Managers have to

report on from time to time to the Top Management of the Department - sometimes with unpleasant consequences for the Project Manager. Secondly, the performance of the Contractor directly influences the quality and timeousness of the project which in turn has a bearing on the wellbeing of the Client – either in the form of receiving the project at the time programmed and/or to the quality expected. Time and quality are essential aspects of the Project Manager to attend to. Allowing a Contractor to remain in repudiation or breach (default) eventually not only tarnishes the image of the Project Manager but also that of the Department. It may not be allowed to occur!

5. RECIPROCAL LIABILITY:

5.1 This Directive would not be complete if a word is not written about the responsibility of the Employer, in the Contract represented by the Project Manager.

5.2 A Contract for building- or engineering Works is by its very nature reciprocal – meaning that either Party to the Contract has rights and obligations. The Employer has the right to receive the product for which a Contract was constituted, but has the obligation to make payments and do certain things as the Contract determines. The Contractor, on the other hand, has the obligation to produce the said product and the right to receive payments.

5.3 In respect of the reciprocal nature of building- and engineering, a legal doctrine known as the *exceptio non adimpleti contractus*¹⁴ must be mentioned. Milne J probably explains the defence best in his judgment in the matter of *U-Drive Franchise Systems (Pty) Ltd v Drive Yourself (Pty) Ltd and Another [1976] 1 All SA 336 (D)* with the following words:

It is clear that in our law in a bilateral contract certain obligations may be reciprocal in the sense that the performance of the one may be conditional upon the performance or tender of performance of the other. This reciprocity may exist where obligations are required to be performed concurrently or where the obligations, though interdependent, fall to be performed consecutively. For reciprocity to exist there must be such a relationship between the obligation to be performed by the one party and that due by the other as to indicate that one was taken in exchange for the performance of the other and, in cases where the obligations are not consecutive, vice versa. Where a plaintiff sues to enforce performance of an obligation which is conditional upon performance by himself of a reciprocal obligation owed to the defendant, then the performance by him of this latter obligation is a necessary prerequisite of his right to sue and the defendant may in such a case raise the defence known as the exceptio non adimpleti contractus. Per

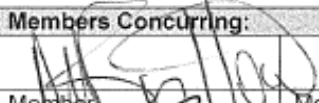


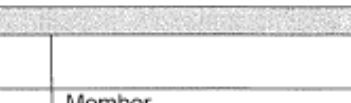
¹⁴ A legal defence which stipulates that, in a bilateral contract, the one party can hold back performance if the other party does not perform.

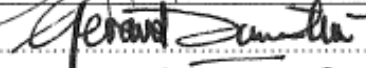
- 5.4 The Employer, and therefore the Project Manager and the Principal Agent by implication, must be acutely aware that its actions must allow the Contractor to complete his/her/its obligations by the stipulated time period/date at the stipulated quality. If any argument can be advanced by the Contractor that the Project Manager/Principal Agent team did not provide a necessary decision during the time in which the Contractor has/had to perform, or did not do or refrain from doing which is/was essential for the Contractor to be able to abide by the contract, or did not effect payments in the time allowed for in the Contract, any remedial actions open to the Employer later ranges from limited to non-existent. In other words, the legal defence of the *exceptio non adimpleti contractus* will rear its ugly head.
- 5.5 The JBCC2005, and the to-be-implemented JBCC2014, make specific provision for the legal principle referred to afore. Clause 36.6 of the JBCC2005 reads: "The **employer's** right to cancel in terms of 36.0 may not be exercised should the **employer** be in material breach of this **agreement**." [bold type is as per original document quoting from]. Clause 29.13 of the JBCC2014 will read: "The right to terminate may not be executed where the **employer** is in material breach of this **agreement**" [bold type is as per original document quoting from]. By having these clauses in the JBCC, the Contract effectively aligns to the age-old legal doctrine referred to 5.3 above. The GCC contract format does not have a similar alignment clause albeit that the principle is there by implication in the sense that the Contractor may terminate the Contract in the event of the Employer persist in "Repudiating the Contract" in terms of clause 9.3.1.1.1 and "Failing to pay the Contractor..." in terms of clause 9.3.1.1.2 and "Interfering with or obstructing the issue of any certificate" in terms of clause 9.3.1.1.3 – to name a few relevant clauses.
- 5.6 To conclude on this point, it must be clear that the behaviour and actions of the Project Manager/Principal Agent must at all times be such that performance by the Contractor is not interrupted or delayed thereby if he/she wants to have any possible change of keeping the Contractor liable for not abiding by the time aspects of the contract, or any other stipulation of the Contract for that matter, within which the performance by the Contractor has/had to be

rendered. If the behaviour or actions of the Project Manager/Principal Agent did in any way have an influence on the Contractor's ability to perform, a reasonable approach between the two Parties will be necessary to restore the Conditions of Contract amicably between the Parties.

6. IN SUMMARY THEREFORE:

- 6.1 If a Contractor is in repudiation or breach of Contract, reaction thereto must be instituted in the terms allowed for in the provisions of the Conditions of Contract.
- 6.2 Such entails that the Contractor must be placed *in mora* immediately when the repudiation/breach is detected/realised.
- 6.3 The Contractor's performance must be kept under close scrutiny during the period afforded to him/her/it to remedy unacceptable performance/behaviour.
- 6.4 If the desired remedial actions are not forthcoming, cancellation/termination of the Contract must be considered timeously.
- 6.5 Not being vigilant in such regard may cause the Project Manager/Principal Agent unwanted criticism resulting in disciplinary action against the Project Manager and/or the need to institute a claim for damages against the Principal Agent.
- 6.6 Finally, make sure the nose of the Employer is clean! Default on the end of the Employer places the latter in an extremely difficult situation if it wants to exercise any right to cancel/terminate a contract.

Members Concurring:			
			
Member	Member	Member	Member

Issued:  G Damstra: Chairperson: PLC
 Date: 18 AUG 2015

