

# GUIDELINES FOR GENERAL UPKEEP AND MAINTENANCE OF EDUCATION FACILITIES



**basic education**

Department:  
Basic Education  
**REPUBLIC OF SOUTH AFRICA**





# GUIDELINES FOR GENERAL UPKEEP AND MAINTENANCE OF EDUCATION FACILITIES

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## FOREWORD



Over the past number of years the Department of Basic Education together with the Provincial Education Departments have been providing state of the art education facilities through the Accelerated Schools Infrastructure Delivery Initiative (ASIDI) and provincial Schools Building Programmes. These efforts are aimed at addressing the imbalances of the past by eradicating school facilities that are built of inappropriate materials, providing decent and adequate basic services, additional classrooms and other instructional spaces such as libraries and laboratories. Critically, the drive is to create fully functional and conducive teaching and learning spaces with ambience that is commensurate with that of the 21<sup>st</sup> century facilities.

While the sector has made strides in providing the much needed basic education facilities, the need for looking after and maintaining these facilities after they have been handed over for beneficial occupation, remains one of the major challenges, and a thorny issue. The inability to look after and maintain these facilities by the responsible persons disaffirm the efforts that have been made, as the rate of deterioration of these facilities grows exponentially and their lifespan is shortened drastically. Natural disasters, which are not predictable, and man-made disasters, which we decry in the strongest terms, also frustrate our efforts. As a result, yet other huge capital investments are demanded to re-instate these facilities to a safe, hygienic, fully functional and habitable state. It follows that not only should the attraction be on the “excitement-of-the-new”, but it should also be channelled towards taking pride of, looking after and safeguarding the facilities that have been made available to us by government. As a means of tackling this problem and ensuring success, the Department of Basic Education has undertaken to provide direction to the sector on how general upkeep and maintenance of its facilities should be pursued.

We present the ***Guidelines for General Upkeep and Maintenance of Education Facilities*** to guide the basic education sector, stakeholders, and service providers on the procedures and protocols for looking after and maintaining the basic education facilities. We appreciate the efforts made by our sister departments in this regard, but we considered that, for sustainable success to be realised, nuances and dynamics that are unique and sector-specific, needed special attention. This document has been issued in terms of the South African Schools Act (Act No. 84 of 1996), as amended, and is aligned to the requirements of the Public Finance Management Act (Act No. 1 of 1999), the Government Immovable Assets Management Act (Act No. 19 of 2007) and the National Immovable Asset Maintenance Management Standards. It was tabled before the Council of Education Ministers and approved for implementation by the sector.

These ***Guidelines*** appreciate the fact that the sector is still at infancy stage regarding the general upkeep and maintenance of its facilities and has therefore adopted a phased approach, allowing piloting of some of the concepts. This suggests that new lessons would be learnt in the process, thus making these ***Guidelines*** a live document. Therefore we invite further suggestions from stakeholders and the general public to enable continuous improvement. These should be addressed to the Director-General of the Department of Basic Education, for the attention of Dr M. Mabula at [mabula.m@dbe.gov.za](mailto:mabula.m@dbe.gov.za)

A handwritten signature in black ink, appearing to read 'Motshekga', written in a cursive style.

**MRS AM MOTSHEKGA, MP**

MINISTER OF BASIC EDUCATION

Date:09/04/2018

# PART A: GENERAL PROVISIONS AND PROBLEM IDENTIFICATION

## 1. ACRONYMS AND DEFINITIONS

### 1.1 Acronyms and Abbreviations

<b>ABSs</b>	:	Asbestos-built Structures
<b>ACMs</b>	:	Asbestos Containing Materials
<b>APM</b>	:	Asbestos Management Plan
<b>AWP</b>	:	Asbestos Work Plan
<b>APPA</b>	:	Association of Physical Plant and Administrators
<b>CEM</b>	:	Council of Education Ministers
<b>CIP</b>	:	Capital Improvement Programme
<b>CIW</b>	:	Capital Improvement Works
<b>CMMS</b>	:	Computerised Maintenance Management System
<b>COGTA</b>	:	Department of Cooperative Governance and Traditional Affairs
<b>CSM</b>	:	Cleanable Square Meterage
<b>DBE</b>	:	Department of Basic Education
<b>DMM</b>	:	District Maintenance Manager
<b>DoRA</b>	:	Division of Revenue Act
<b>EFCA</b>	:	Education Facilities Condition Assessment
<b>EFCR</b>	:	Education Facilities Condition Report
<b>EFIMS</b>	:	Education Facilities Information Management System
<b>EIG</b>	:	Education Infrastructure Grant
<b>EPWP</b>	:	Expanded Public Works Programme
<b>FFE</b>	:	Furniture, Fittings and Equipment
<b>FMC</b>	:	Facility Maintenance Co-ordinator
<b>FOF</b>	:	Facility Occupancy Factor
<b>FY</b>	:	Financial Year
<b>GAAP</b>	:	Generally Accepted Accounting Principles

<b>GGA</b>	:	Gross Grounds Area
<b>GFA</b>	:	Gross Floor Area
<b>GIAMA</b>	:	Government Immovable Asset Management Act (No. 19 of 2007)
<b>GU&amp;M</b>	:	General Upkeep and Maintenance
<b>GUMRR</b>	:	General Upkeep, Minor Repairs and Minor Replacements
<b>GSM</b>	:	Gross Square Meterage
<b>HVAC</b>	:	Heating, Ventilating and Air-Conditioning
<b>IA</b>	:	Implementing Agent
<b>ICT</b>	:	Information and Communication Technology
<b>IDMS</b>	:	Infrastructure Delivery Management System
<b>IEQ</b>	:	Indoor Environmental Quality
<b>LAN</b>	:	Local Area Network
<b>LEF</b>	:	Learner Enrolment Figures
<b>LSENS</b>	:	Schools for Learners with Special Education Needs
<b>LTSM</b>	:	Learning and Teaching Support Material
<b>MEC</b>	:	Member of Executive Council, Provincial Education Department
<b>MRR</b>	:	Major Repairs and Major Replacements
<b>MTEF</b>	:	Medium Term Expenditure Framework
<b>NIAMMS</b>	:	National Immovable Assets Maintenance Management Standard
<b>NMD</b>	:	National Maintenance Director
<b>NNSSF</b>	:	National Norms and Standards for School Funding
<b>NSNP</b>	:	National School Nutrition Programme
<b>OEL</b>	:	Occupational Exposure Level (for Asbestos)
<b>PEDs</b>	:	Provincial Education Departments
<b>PEIP</b>	:	Provincial Education Infrastructure Plan
<b>PES</b>	:	Provincial Equitable Share
<b>PFMA</b>	:	Public Finance Management Act (Act No.1 of 1999)
<b>PMD</b>	:	Provincial Maintenance Director
<b>PSP</b>	:	Professional Service Provider

<b>RTB</b>	:	Run-to-Breakdown
<b>SABS</b>	:	South African Bureau of Standards
<b>SASA</b>	:	South African Schools Act (No. of 84 of 1996), as amended
<b>SANS</b>	:	South African National Standards
<b>SETA</b>	:	Skills Education Training Authority
<b>SGB</b>	:	School Governing Body
<b>SMME</b>	:	Small, Medium and Micro Enterprises
<b>PWDs</b>	:	People with Disabilities
<b>U&amp;A</b>	:	Upgrades and Additions
<b>UoC</b>	:	Unit of Costing
<b>UPS</b>	:	Uninterruptable Power Supply
<b>WAN</b>	:	Wide Area Network

## 1.2 Definitions

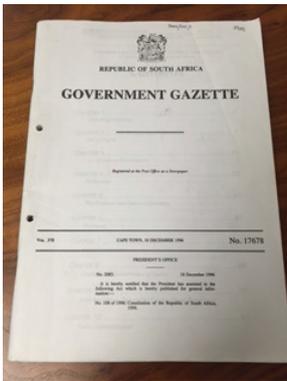
For the purpose of these *GU&M Guidelines*, the following terms will bear the meaning reflected hereunder:

- Additions** : *An area, space or component of a building added to an existing facility after the original building's year-built date.*
- Asbestos** : *The name given to a number of naturally occurring fibrous silicates (Asbestos Actinolite, Asbestos Grunerite (Amosite), Chrysolite, Crocidolite, Fibrous Anthophyllite, Fibrous Tremolite, and any mixture containing any of these minerals).*
- Asbestos-built Structure** : *A facility component that is built predominantly of asbestos containing materials.*
- Asbestos Belt** : *Refers to any of the three regions in the country where asbestos was mined. These are found in the Northern Cape and North West Provinces where Blue Asbestos was mined; in Limpopo Province where Brown Asbestos was mined; and Mpumalanga Province where White Asbestos was mined.*
- Building Capacity** : *The number of users a building can physically accommodate, per the design standards.*
- Capital Improvement** : *The addition or restoration of a permanent structure or some aspect of a property that will either enhance the property's value or increase its useful life.*
- Cleanable Square Meterage** : *Wall-to-wall area that can be cleaned by a capable person to a specified Level of Cleanliness within a specified period of time.*
- Components of the Facility** : *Any of the main components, sub-components, systems and sub-systems making up the total facility.*
- Department** : *Department of Basic Education (DBE) together with any or all the nine (9) Provincial Education Departments (PEDs).*
- Design Capacity** : *The number of users a facility is designed to accommodate as part of its day-to-day operations, per the design standards and the capacity of the building systems and services given the projected demand based on the projected number of users and intended use.*
- Education Facility** : *Any of the facilities that are utilised by the Department for providing educational activities which include teaching, learning, administrative work and ancillary services such as learner accommodation. These facilities include public schools (Ordinary, Focus and Special Schools), Learner Boarding Facilities, Education District Offices and Education Circuit Offices. This includes facilities that have been built and operated by the Department and those that are leased or rented from third parties. The term 'facility' incorporates the buildings, its systems, and outdoor amenities.*

- Facility Condition Assessment** : *A technical evaluation of a facility that identifies the current building and its system deficiencies with respect to structural integrity, system functionality and capacity sufficiency.*
- Functional Space** : *Any of the enclosed spaces / rooms in a facility that have been provided to fulfil a specific purpose in pursuit of the overall objectives of providing the said facility. This could either be core, specialist, support, or administration spaces.*
- General Upkeep and Maintenance Plan** : *A document that details an organisation’s plan for proactively maintaining its facilities as part of its overall facility management strategy.*
- Inappropriate Materials** : *Materials that are regarded as being unsafe and not conducive for use as building materials in education facilities. These include: mud, timber/planks, corrugated iron, and asbestos.*
- Leaner Boarding Facilities** : *Facilities used solely for accommodating learners at various grades. These exclude privately owned houses or flats that might be rented out to learners.*
- Lifespan** : *The useful life or the period of time that a building, system or element can be expected to adequately serve its intended function before it wears out following its utilisation and maintenance.*
- Renewals** : *Combined term that refers to Renovations, Refurbishment, Rehabilitation and Retrofitting of a facility. It refers to a process of improving the aesthetic outlook, improve Indoor Environmental Quality Standards, enhance the value of the facility and to bring all its components to their full functionality.*

## 2. BACKGROUND AND INTRODUCTION

### 2.1 The Background



Section 29 of the Constitution of the Republic of South Africa (Act No. 108 of 1996) (“the Constitution”) considers it everyone’s right to basic education. Schedule 4 of the Constitution lists education at all levels, excluding tertiary education, as one of the functional areas of concurrent National and Provincial competence. This basic service has to be provided in conducive, decent, safe and accessible education facilities that are located in environments or neighbourhoods that are conducive, supportive, complementary and ideal for teaching and learning activities. This would be in line with the provisions of Section 10 of the Constitution which posits that “*everyone has inherent dignity and the right to have their dignity respected and protected.*” This dignity therefore spreads to the quality of the facilities that need to be provided wherein educational activities would take place - teaching and learning spaces, learner boarding facilities and facilities for educational support and administrative services. In this respect, as stipulated in Goal 24 of the Action Plan 2014 – Towards the Realisation of Schooling 2025, the goal of the Department of Basic Education (DBE) is to “*ensure that the physical infrastructure and environment of every school inspire learners to want to come to school and learn, and teachers to teach.*”

Section 12(1) of the South African Schools Act (Act No. 84 of 1996) (SASA), as amended, requires the Member of Executive Council (MEC) of the Provincial Education Department to provide public schools for the education of learners out of funds appropriated for this purpose by the Provincial Legislature. Such school facilities have to conform to the provisions of the *Norms and Standards for Education Facilities* (NSEF) with respect to acceptable minimum standards of a school facility and various design aspects.

Once construction activities on an education facility have been completed, it would be handed over for beneficial occupation by the end-users. It is expected that these facilities be used for the intended purpose, be cared for, well-looked after, not be over-loaded but be utilised within their design capacity and be maintained accordingly.

Section 38(1)(d) of the Public Finance Management Act (Act No. 1 of 1999) (PFMA), posits that the Accounting Officer for a Department is responsible for management, including safeguarding and the maintenance of the assets of the Department. In this regard, while the custodianship might reside with another department, e.g. the Department of Public Works (DPW), the ownership of the public school facilities and the Learner Boarding Facilities remains the Provincial Education Departments’ (PEDs’), who make the ultimate decisions on the use of these facilities, what to do with them, and to provide the necessary funding for their development, upkeep and maintenance, closure and disposal if they are no longer required. Section 5(1)(d) of the Government Immovable Asset Management Act (Act No. 19 of 2007) (GIAMA) requires that “*immovable assets that are used must be kept operational to function in a manner that supports efficient service delivery.*”

Per Section 20(g) of SASA, School Governing Bodies (SGBs) are required to administer and control the school properties. Further, Section 21(a) of SASA provides for SGBs to apply to the Head of a Provincial Education Department, as an Accounting Officer, to be allocated the function of maintaining and improving the school property. This presupposes that such SGBs would be having the requisite skills and resources to undertake such functions otherwise, per the provisions of Section 23(6) of SASA, they may be required to co-opt a person with relevant skills and experience to assist them in carrying out this function. Section 54.3(a) of the Policy on the Organisation, Roles and Responsibilities of Education Districts (09 Dec 2016) also requires that, the authority to manage the assets and liabilities of the PED in the district, including the safeguarding and maintenance of assets, be delegated to a District Director by the provincial Head of Department subject to the applicable legislation.

What is evident is that basic education must be provided to everyone as a basic service. The facilities in which these services are to be offered also need to be provided and thereafter be looked after and maintained.

As it may be appreciated, the need for paying attention to the general upkeep and maintenance of the education facilities has attracted the necessary attention and that there are a number of entities that are mentioned in the legislation as having a role to play in the maintenance of these facilities. The critical issue, however, is a need for clarity on the ultimate and single point of accountability for specific obligations pertaining to the general upkeep and maintenance of education facilities. This includes a need of providing clarity on the roles and responsibilities for specific key role-players in the delivery chain to manage potential overlaps, avoid confusion and to minimise the potential of having “things falling between the cracks”.

## 2.2 Introduction

While there is a wide coverage of maintenance related requirements of public assets legislatively and in the general literature, maintenance of facilities particularly in the public sector remains one of the most elusive infrastructure interventions, a burning platform that incites serious frustrations and long-standing pointed outcry in every sector of the populace. The basic education sector is no angel in this regard. Poor maintenance of education facilities is one of the well-acknowledged and most spoken about problems on infrastructure delivery. Research has been conducted on it, literature has been published, special programmes have been proposed to deal with it, policies and guidelines have been published covering it. More of such publications are still being proposed - more policies, more regulations, more special programmes, more documents such as plans required from the facility users on how they should manage these facilities. Also, more third parties are eager to take charge of this responsibility and to dictate what needs to happen.

While all these attempts are being pursued, the observation is that these have not made any significant difference in alleviating the problem. Instead, the problem is becoming worse with time as the sense of pride and sense of ownership by facility users and members of the community are dwindling, the rate of vandalism increasing, new additional facilities (replacements, and upgrades and additions) being added into the system on top of those that existed before, with serious maintenance shortcomings. Those that have not been properly maintained continue to deteriorate further. Following these observations an urgent need for conscious reframing has been identified by the DBE, including a need to review the strategic approaches and the operating models that have been pursued thus far, if the sector were to win this battle.

What is critical is the appreciation of different local situations and different conditions that these facilities are exposed to. Most importantly is a need of clarity on the following:

- (a) What is the real problem and what are the key challenges that inhibit effective upkeep and maintenance of education facilities?
- (b) What needs to be done differently to turn the current situation around, and what operating model needs to be adopted by the basic education sector to enjoy predictability and sustainability in this regard?
- (c) Who needs to do what, when and what skills set are required to enable the intended objectives to be realised?
- (d) What resources (human, financial, systems and tools) are required to achieve what needs to be done?
- (e) What governance, management and operating structures need to be put in place to ensure effective execution of the adopted sector model, clear lines of responsibility and accountability, proper co-ordination, effective monitoring, and effective execution of oversight functions?
- (f) How to go about doing what needs to be done, i.e. in terms of the business processes to be followed, based on the operating model to be pursued?

To address the points raised above, there is a need for a holistic and integrated approach on the general upkeep and maintenance of education facilities, with clarity on how to manage interfaces across various functionaries in the value chain.

It is in light of the above, that the DBE has developed this document, the *Guidelines for General Upkeep and Maintenance of Education Facilities* (the “*GU&M Guidelines*”). This document takes all the areas highlighted above into consideration. It acknowledges the documents that were developed before that were aimed at addressing this problem. It is also aligned with the:

- (a) Norms and Standards for Education Facilities;
- (b) School Infrastructure Safety and Security Guidelines;
- (c) Guidelines for Condition Assessment of Education Facilities;
- (d) National Immovable Asset Maintenance Management Standard; and
- (e) Infrastructure Delivery Management System.

## 2.3 Structure of the Document

This document is divided into four parts:

- PART A:**
  - Provides the background to the GU&M activities, the problem statement regarding GU&M interventions in the basic education sector, why the identified problem is a problem, and the rationale for developing the *GU&M Guidelines*.
  - Covers the status quo with respect to the extent to which education facilities are maintained and what the ideal state to work towards is.
- PART B:**
  - Provides Asset Lifecycle for Education Facilities thereby highlighting the location of the GU&M interventions, from planning, design, construction to full facilities management.
  - Provides an alignment with other key roleplayers in the provisioning, operations and maintenance of Education Facilities.
- PART C:**
  - Provides technical guidelines and the operating model for undertaking general upkeep and maintenance of Education Facilities.
  - Covers Roles and Responsibilities of various roleplayers that are involved in the general upkeep and maintenance of Education Facilities.
  - Highlights the Resource Requirements to enable the general upkeep and maintenance activities to be carried out effectively and efficiently.
- PART D:**
  - Provides Implementation Plan and Transitional Arrangements.
  - Covers reporting mechanism to track progress.

This document acknowledges the fact that the basic education sector is still at infancy stage of the Maintenance Management Maturity Model, therefore it will focus on establishing the basic building blocks to facilitate the implementation of GU&M activities and by following a phased implementation approach.

## 2.4 Status Quo and Conditions on the Ground

In formulating a sustainable approach towards effectively addressing the general upkeep and maintenance of education facilities, both the status quo and the conditions on the ground have to be taken into consideration. This is critical as a means of avoiding adopting a “one-size-fits-all” approach, which also calls for conscientiousness, pragmatism, rationality and mindfulness by the planners and decision-makers.

- (a) The **status quo and the contextual issues** to contend with, include:
- (i) A need to continue with the Capital Improvement Programme (CIP) to provide the much needed education infrastructure, thereby dealing with backlogs on infrastructure, as the sector is still contending with schools built of inappropriate materials, schools that need basic services, schools that require additional functional spaces to deal with over-crowding, and schools that need to be renewed through refurbishment, rehabilitation and/or renovation;
  - (ii) Immense pressure on the national fiscus thus leading to limited budget availability;
  - (iii) A relatively large number of education facilities to be dealt with and these include:
    - (1) 24 000 Public Schools;
    - (2) 446 Learner Boarding Facilities;
    - (3) 99 District Offices; and
    - (4) 1 021 Circuit Offices.
  - (iv) Different sizes of existing and planned education facilities – (which include buildings and grounds) – micro (with as low as 30 learners), small, medium, large, and mega (with as high as 1 600 learners) school facilities;
  - (v) Different types of facilities – single storey and multi-storey facilities;
  - (vi) Different levels of specialisation – Ordinary Schools, Focus Schools, Special Schools for Learners with Special Education Needs (LSENS);
  - (vii) Different funding support arrangements – Fee-paying and Non-fee Paying Schools;
  - (viii) Different levels of occupancy with chronic over-crowding in some schools;
  - (ix) Immense capacity and skills shortages in entities that are assigned the responsibility of custodianship;
  - (x) Increased rate of natural disasters; and
  - (xi) Increased rate of man-made disasters and vandalism, decreasing sense of ownership of education facilities by the facility users and general members of the community, general unreliability of volunteerism by the members of the community to participate in the general upkeep activities in schools at no pay or miniscule compensation.

- (b) Different **set up and environmental exposure conditions** in which the education facilities exist:
- (i) Different climatic conditions – coastal and inland;
  - (ii) Different weather patterns – areas prone to severe thunderstorms, tornadoes and cyclones, and areas with extreme climatic conditions (too hot and too cold, typically the Northern Cape Province);
  - (iii) Different geographic conditions – size of province in terms of geographic coverage, topography in terms of being mountainous and ruggedness of certain provinces;
  - (iv) Different communal environments and proximity to resources – rural, farm, township and urban/suburban schools;
  - (v) Different ages of buildings and building systems;
  - (vi) Era in which the facilities were built – more durable construction materials tend to be found in older structures than in newer structures;
  - (vii) Different building materials used – face brick, plastered walls, prefabricated materials, etc.; and
  - (viii) Different types of amenities provided – e.g. waterborne sewer vs non-waterborne, technologically savvy vs non-technological savvy in terms of ICTs.

## 3. OBJECTIVES AND STRATEGIC INTENT OF THE GUIDELINES

### 3.1 The Primary Objectives

The primary objective of these *GU&M Guidelines* is to guide the basic education sector on the approach to be adopted in looking after and maintaining its education facilities. It provides guidelines on the:

- (a) Categorisation of infrastructural interventions required on education facility post construction;
- (b) Various processes to be followed and activities to be undertaken by the identified roleplayers involved in looking after and maintaining education facilities;
- (c) Roles and responsibilities of various roleplayers involved in the general upkeep and maintenance of education facilities;
- (d) Operating model that could be pursued and how various activities could be organised; and
- (e) Uniform and coherent application of practice to be adopted across the sector in terms of minimum standards to be pursued.

### 3.2 The Strategic Intent

The strategic intent or intended outcomes of these *GU&M Guidelines* are to ensure that:

- (a) There is uniformity of practice adopted across the basic education sector on how to deal with general upkeep and maintenance of education facilities thus enabling predictability, comparability and synthesis of the results;
- (b) Education facilities are looked after and maintained systematically and effectively so that meaningful return on investment is realised through preservation of capital investment by government;
- (c) Useful life of education facilities is prolonged as much as is possible; and
- (d) Teaching, learning and support functions take place in a safe, hygienic and conducive environment.

## 4. SCOPE OF APPLICABILITY

These *GU&M Guidelines* are applicable to:

- (a) The basic education sector as a whole, including:
  - (i) Department of Basic Education (DBE);
  - (ii) Provincial Education Departments (PEDs);
  - (iii) Basic Education District Offices;
  - (iv) Basic Education Circuit Offices;
  - (v) All the public schools:
    - (1) Primary and Secondary Schools;
    - (2) Ordinary, Focus and Special Schools; and
    - (3) Micro, Small, Medium, Large and Mega Schools.
- (b) All the existing and new education facilities, which include:
  - (i) School Facilities;
  - (ii) Learner Boarding Facilities;
  - (iii) District Offices; and
  - (iv) Circuit Offices.
- (c) Any entity that is involved in the general upkeep and maintenance of education facilities, and these include:
  - (i) Implementing Agents;
  - (ii) Professional Service Providers;
  - (iii) Facility Management Companies; and
  - (iv) Contractors.
- (d) Both immovable and movable assets (large capital) found in the education facilities.
- (e) Equipment used for special educational requirements (LSENS, Special subjects in Focus Schools and Technical Schools) and sport equipment.
- (f) Buildings, equipment and amenities donated to schools by third parties.
- (g) Third parties that might be renting out or leasing part or whole of their properties to the education sector to carry out its business.

## 5. EXCLUSIONS

The following are excluded from the provisions of these *GU&M Guidelines*:

- (a) Learning and Teaching Support Material (LTSM);
- (b) ICT Software and software licences;
- (c) Utensils, crockery and supplies used in the:
  - (i) National School Nutrition Programme (NSNP); and
  - (ii) Learner Boarding Facilities;
- (d) Apparatus and supplies/consumables used in the school laboratories; and
- (e) Facilities that are no longer used by the basic education sector for its business purposes, after they have been transferred to third parties.

## 6. APPLICABLE LEGISLATION AND ASSOCIATED DOCUMENTS

These *GU&M Guidelines* shall be read in conjunction with and construed in the context of the following policies, standards, and guidelines, as amended from time to time:

- (a) Constitution of the Republic of South Africa (Act No. 108 of 1996);
- (b) Public Finance Management Act (Act No. 1 of 1999) (PFMA);
- (c) South African Schools Act (Act No. 84 of 1996), as amended (SASA);
- (d) Government Immovable Assets Management Act (Act No. 19 of 2007) (GIAMA);
- (e) Occupational Health and Safety Act (Act No. 85 of 1993), as amended (OHSA);
- (f) National Building Regulations and Building Standards Act (Act No. 103 of 1977);
- (g) Fencing Act (Act No. 31 of 1963), as amended;
- (h) National Environmental Management Act (Act No. 107 of 1998), as amended;
- (i) National Treasury Regulations on Procurement;
- (j) Asbestos Regulations 2001, published by the Department of Labour on 10 February 2002 in Government Gazette No. 23108;
- (k) Regulations for the Prohibition of the Use, Manufacturing, Import and Export of Asbestos and Asbestos Containing Materials under Section 24B of the Environment Conservation Act, 1989 (Act No. 73 of 1989), published by the Department of Environmental Affairs on 28 March 2008 in Government Gazette No. 30904;
- (l) National Norms and Standards for School Funding (2004), as amended;
- (m) Norms and Standards for School Infrastructure (2013);
- (n) Policy on the Organisation, Roles and Responsibilities of Education Districts (09 Dec 2016);
- (o) Space Planning Norms and Standards for Office Accommodation Used by Organs of State (Notice No. 1665 of 2005);
- (p) Any applicable South African National Standards (SANS);
- (q) Draft National Sanitation Policy, (Gazette No. 39688 of 12 Feb 2016);
- (r) School Infrastructure Safety and Security Guidelines (2017);
- (s) National Immovable Assets Maintenance Management Standard (NIAMMS) (2015); and
- (t) Infrastructure Delivery Management Strategy (IDMS) Toolkit (2010).

## 7. PURPOSE OF UPKEEP AND MAINTENANCE OF FACILITIES

- (a) Essentially, the process of looking after and maintaining education facilities is about resource planning, integration and management, and about creating an enabling environment and a physical setting that is conducive and appropriate for the purpose the facility was designed for, which is:
  - (i) Effective teaching and learning in the case of schools;
  - (ii) Learning, social interactions and resting in the case of Learner Boarding Facilities; and
  - (iii) Effective administration and support functions in the case of District and Circuit Offices.
- (b) General Upkeep and Maintenance affects the following five (5) specific spheres of influence and the impact on each of these areas should be assessed every time GU&M activities are carried out or deferred:
  - (i) **The Facility** - Physical state, appearance, ambience created and the extent of functionality of the facility to fulfil its purpose;
  - (ii) **The Users** – Psychological state, physiological state, general impression and poise (how the users feel about their facility and relate to it);
  - (iii) **The Business Objectives** that the facility was intended for. Ability and deportment of the users towards fulfilling their purpose and the facility being fully functional at all times to enable the activities supporting the business objectives to be carried out;
  - (iv) **The Community** – Perception and general impressions about the facility, how they relate to it, concerns about their children’s health and safety, support and sense of ownership; and
  - (v) **The Basic Education Sector and the State** – Negative impression towards the sector and the state on the extent to which public facilities are not taken care of and huge capital investment required to bring the facilities to acceptable standards and to their full functional state where they were not well-cared for and/or maintained.
- (c) The primary purpose of General Upkeep and Maintenance of education facilities is to:
  - (i) Provide a clean, hygienic, orderly, presentable, welcoming, conducive, habitable, and safe environment to the day-to-day users of the facilities and to third parties visiting these facilities;
  - (ii) Ensure the well-being, occupational health and safety of facility users;
  - (iii) Protect the capital investment and prolong the lifespan of facilities and their systems;
  - (iv) Ensure that the facility and its systems continue to function optimally to serve the purpose they were designed for, thus enabling the realisation of the primary business objectives of the end-users;
  - (v) Ensure compliance with applicable legislation such as the Occupational Health and Safety Act, Fencing Act, National Building Regulations, and Applicable Municipal By-laws and Ordinances;
  - (vi) Prevent financial and non-financial costs that might be incurred as they relate to:
    - (1) Inability to realise return on investment and high opportunity costs;
    - (2) Costly future major breakages and refurbishment costs;
    - (3) Loss of productive time due to breakdowns or unconducive working and learning environment;

- (4) Need for more frequent huge capital outlay to replace the facility components and its systems sooner than the case should have been;
- (5) High operating costs because of system wastages, e.g. water leaks, high energy consumption to heat up a room that has draught or to cool it down;
- (6) Loss of lives as a result of component failure (e.g. collapsed toilet floor) or system malfunction and failure (e.g. fire following electrical overload and non-functional fire control system);
- (7) Physiological and psycho-social costs:
  - (aa) Increased nuisance factors and stress levels – things that ought to be working not working and not achieving their intended purpose;
  - (ab) Reduced effectiveness, efficiencies and productivity levels - time wasted in trying to “fix” what ought to be working and improvising, trying to get around the inconveniences thereby focussing on things that one should not be focussing on;
  - (ac) Increased anxiety levels and inability to concentrate – due to creepy and gory environment, fear of rodents (rats), crawling insects (cockroaches, spiders), snakes and “things” that might emerge out of crevices and unkempt areas;
  - (ad) Increased rate of sicknesses (e.g. respiratory illnesses) due to unhygienic environment – dust, moisture, draught coming through broken window panes, windows and doors that do not close properly, fused globes making it difficult to read leading to eye-strain and head-aches, tick-bites from uncut grass;
  - (ae) Depression and/or misplaced anger caused by things that do not work;
  - (af) Limited space for playing, relaxing and socialising - due to unwelcoming and inconvenient play areas, inaccessible areas, hideouts and “no-go” areas;
  - (ag) Lost opportunity to passively and actively learn about and from nature, and realisation of greater environmental awareness and protection; and
  - (ah) Loss of opportunity to teach learners about hygiene and to inspire them through action.
- (d) It is most unfortunate that most of these problems and depressing environments are prevalent in rural, farm and township schools, making them less attractive to good educators and learners. These happen to be schools where most previously disadvantaged learners are found, where effective education is needed the most to address the imbalances of the past and for economic emancipation.

## 8. CHALLENGES WITH GENERAL UPKEEP AND MAINTENANCE

*"The speculation is important because if action is to be planned to bring about change, then it is essential to understand the conditions which pertain and need changing..." UNESCO*

### 8.1 Factors Affecting the Rate of Deterioration of Education Facilities

Challenges associated with poor upkeep and maintenance arise in new and old education facilities alike, although the nature of these challenges and their extent may differ. Certain factors do contribute towards the rate of deterioration of education facilities. These factors also affect the intensity of maintenance related activities post construction. The planners and designers have to be aware of these factors and integrate them in their designs when new capital works are planned (Renewals, Upgrades and Additions, Total Replacements and New Facilities). These factors include:



(a) **Design and Construction Factors:**

- (i) Use of “cheap” or low quality building materials – with a view to reducing the capital costs;
- (ii) Use of incorrect building materials for certain exposure conditions (environmental conditions and orientation of users);
- (iii) Poor choice of building materials and systems with respect to their durability given their exposure conditions, operability, and ease of finding replacement parts;
- (iv) Choice of architectural designs that are difficult and costly to maintain – multi storey buildings with large glass facades that need special equipment; and
- (v) Poor quality control and poor workmanship during construction.

(b) **Location of the Facility:**

- (i) Climatic conditions associated with the location of the facility such as inland vs coastal areas (areas with relatively high humidity leading to corrosion, high rainfall, high wind speeds, high ultra-violet (UV) index, etc.);
- (ii) Areas with deleterious atmospheric exposure conditions – high air pollutants (especially in industrial areas);
- (iii) Dusty areas – location next to quarries and mine dumps (slimes dams);
- (iv) Areas susceptible to natural disasters such as severe thunderstorms/cyclones and earthquakes/tremors;
- (v) Rural vs urban location – affecting visibility to decision-makers and proximity to resources. Generally schools in rural areas are worse off than those in urban areas due to, *inter alia*:
  - (1) Lack of visibility to decision-makers to see and to insist on certain levels of care and maintenance;

- (2) Unavailability of quality building materials and replacement parts from the local suppliers;
  - (3) Unwillingness of Service Providers to undertake maintenance work in rural schools due to proximity, difficult access, and inability to recoup all the associated service costs;
  - (4) Extent of deterioration of facilities due to previous neglect and lack of prior maintenance; and
  - (5) Relatively poor quality of buildings, with a number of community-built structures.
- (c) **Utilisation of the Facility Components and Systems:**
- (i) Natural wear and tear based on the extent of utilisation and care;
  - (ii) Overloading – use beyond design capacity, including overcrowding;
  - (iii) Abuse and vandalism by facility users and by members of the community;
  - (iv) Incorrect functional use of building systems and equipment; and
  - (v) Non-utilisation of facilities – facilities that are left unoccupied/unused for extended periods of time tend to deteriorate faster (this includes delayed handing-over of facilities for beneficial occupation immediately after practical completion has been reached, unoccupied spaces due to overdesign, or spaces no longer required because of reduced number of users) and unnecessary vast premises/ grounds that are difficult or costly to maintain.
- (d) **Age of the facility:**
- (i) Systems in older facilities need more maintenance and component replacements than those in newer facilities due to general wear and tear over years of utilisation;
  - (ii) Newer facilities needing more maintenance because of:
    - (1) Relatively poor quality of building materials used;
    - (2) Increase in technology inclusions; and
    - (3) Diminishing finesse, poorer skills set, dwindling professional care, and increased rate of “cutting corners” leading to poor quality structures and workmanship.
- (e) **Maintenance History** – structures with poor maintenance record would have a number of areas that need to be fixed with high rate of breakages.

## 8.2 Challenges with Upkeep and Maintenance of Education Facilities

The basic education sector is faced with serious challenges with the general upkeep and maintenance of its facilities. As a result, most facilities are not maintained at all and others not well-looked after. The identified challenges have been grouped and presented below, but not in any order of priority:

- (a) Lack of clear **sector standards and protocols** to be adhered to, therefore leading to the following concerns:
  - (i) What standards and protocols should be followed by the sector in looking after and maintaining its facilities?
  - (ii) What minimum requirements should be placed on the planners and designers on how they should approach maintenance, and how to enforce the requirements and monitor them?
  - (iii) Tendency of treating maintenance as a project, therefore as a “once-off” intervention.
- (b) **Non-streamlined and Non-integrated Processes:**
  - (i) Maintenance work in most schools is unsystematic, uncoordinated, and non-holistic, therefore carried out haphazardly and/or not given priority;
  - (ii) Most facility users lack requisite knowledge in facilities management. Consequently, they fail to integrate facility maintenance into the management of their facilities;
  - (iii) Intentional neglect of facilities by Facility Management to run them down to deterioration so that they could be replaced with new facilities;
  - (iv) Some of the processes that are prescribed or proposed, including certain roles and responsibilities assigned to some entities are not informed by the proximity of such entities to the issues on the ground to enable functional effectiveness;
  - (v) Lack of clarity of boundaries for different interventions required in the general upkeep and maintenance processes and proper management of the interfaces thereof;
  - (vi) Definition and prescription of certain processes informed by the Financial Accounting Standards instead of being informed by the logical and functional requirements that are applicable in the built industry;
  - (vii) The development of the required Maintenance Strategies/Plans tends to be outsourced and/or merely developed for compliance purposes, as such end up being an end in itself, and not implemented;
  - (viii) No clear delineation of interventions that should be treated as part of operations management from those that should be treated as part of project management, leading to the introduction of irrelevant systems and processes for these distinct areas of execution, monitoring and reporting;
  - (ix) Plethora of plans required and tendency to focus on such plans as a proxy to alignment of objectives instead of focusing on a need to carry out physical work associated with general upkeep and maintenance activities; and
  - (x) Protracted procurement and supply chain management processes.

- (c) **Relatively Poor Planning, Design and Construction Activities:**
- (i) General Upkeep and Maintenance activities are not dealt with holistically, systematically, and in an integrated fashion from planning, design, documentation (Specifications, Maintenance Plans from contractors and suppliers), and hand-over processes;
  - (ii) Lack of feedback loops among Operations Teams, Maintenance Teams and the planners/designers on what works best with respect to the choice of construction materials and ideal quality standards and specifications;
  - (iii) The lack of dedicated, skilled and well-resourced Maintenance Teams at various government levels thereby negating the opportunity of having well-developed, documented and shared institutional memory and lessons learnt that could lead to continuous system improvements;
  - (iv) Poor communication between maintenance contractors, clients and facility users;
  - (v) Lack of meaningful focus or limited industry knowledge on the maintainability of specified construction materials and the life-cycle costing during the planning and design stage; and
  - (vi) Poor choice of building materials and poor site supervision during construction.
- (d) **Technical Know-how and Skills Set:**
- (i) Maintenance is a specialist function that requires specialist knowledge and skills to execute it properly. People with no technical know-how and no professional training either in Facilities Management or in Building Technology or related fields are put in charge of maintenance activities or get involved in various aspects of maintenance, much as this responsibility tends to be assigned to junior members of staff;
  - (ii) Following the problem in paragraph (i) above, some Service Providers with no technical know-how and requisite skills are awarded contracts and are allowed to undertake maintenance and repair work, and consequently making the situation worse;
  - (iii) Following the problem in paragraph (i) above, there is a general lack of proper skills to undertake technical evaluation of maintenance work carried out by the appointed Service Providers, to sign it off as being acceptable professionally, and to make follow-ups in the event of recurring failure within the Defects Liability Period or Guarantee Period; and
  - (iv) Unavailability of certain skills to undertake specialised maintenance work in the vicinity of farm and rural schools due to their remoteness and unattractiveness of such contracts to competent Service Providers.
- (e) **Maintenance Units and Dedicated Maintenance Teams:**
- (i) Lack of well-established and well-resourced Maintenance Units at various Government Department levels with dedicated and skilled Maintenance Teams;
  - (ii) Relatively low skills level and/or juniorisation of Maintenance Work at various levels of the delivery chain;
  - (iii) Lack of focussed training interventions to assist with upskilling and continuous professional development of the Maintenance Teams;

- (iv) Limited tools of trade to enable effective site supervision, monitoring, minor repairs and general upkeep of the facilities to be undertaken by the Maintenance Teams; and
  - (v) Tendency to rely solely on volunteers from the local communities to carry out general upkeep and maintenance work, especially in schools.
- (f) **Sector-wide Maintenance System(s):**
- (i) Lack of sector-wide ICT System for collecting data and information on upkeep and maintenance of education facilities thereby enabling data mining, synthesis, trend analysis, informed planning, and effective monitoring and reporting to take place;
  - (ii) Absence of a databank on what works best and centrally recorded lessons learnt for system continuous improvement; and
  - (iii) Inability to record centrally cost trends to enable better planning.
- (g) **Organisational/Functional Structure:**
- (i) Lack of coherent overall functional structure encompassing all levels in the delivery chain starting from policy development and oversight function at national level down to day-to-day operations on the ground; and
  - (ii) Most schools do not have organisational structures for planned facilities maintenance, nor do they have policies/plans on facilities maintenance.
- (h) **Service Providers:**
- (i) Unattractiveness of maintenance work to most well-established and competent Service Providers (Implementing Agents, Consultants and Contractors) because of relatively small contracts, remoteness of the facilities and difficulties in accessing most facilities, especially in rural and farm areas;
  - (ii) Following the problem in paragraph (i) above, tendency of assigning maintenance contracts to relatively junior and inexperienced members of staff; and
  - (iii) Tendency of not prioritising maintenance contracts following paragraphs (i) and (ii) above, and lack of effective reporting.
- (i) **Budgeting and Financial Accounting:**
- (i) Invariably, insufficient budget is made available to undertake maintenance activities with priority being given to the provision of new facilities;
  - (ii) “One-size-fits-all” budgeting approach, being premised from fixed percent budget allocations regardless of the extent of general upkeep and maintenance interventions required;
  - (iii) Relatively poor mechanisms to enable budgeting for emergencies and disasters (natural or man-made); and
  - (iv) Ineffective financial accountability and reporting on the general upkeep and maintenance expenditure at operational (facility) level.

**(j) Demeanour and Image of Maintenance Work:**

- (i) Maintenance is overshadowed by the “excitement-of-the-new” – new facilities bringing more excitement and sense of importance than carrying out maintenance and renewal works on existing ones;
- (ii) Invariably maintenance is not in the spotlight, is not where the “ribbons are cut”, and not used to showcase service delivery;
- (iii) Emphasis on importance of general upkeep and maintenance being at the mercy of the leadership, which in turn is informed by their own backgrounds, frame of reference and orientations;
- (iv) Relatively low overall budget associated with maintenance activities therefore not impacting much on the financial year-end drive for expenditure;
- (v) Maintenance work is not considered as being lucrative to well-established and competent Service Providers. It is also considered as a “small” and a “not-so-serious” assignment, therefore it tends to be assigned to less performing entities;
- (vi) Tends to be treated as a project or programme, with a start and an end date, therefore it is not dealt with as a continuous process that needs to be carried out throughout the year and throughout the lifespan of the facility;
- (vii) Tends to be characterised by convoluted categorisation of required interventions, thus losing the key essence of the intended purpose with respect to specific functions that need to be carried out;
- (viii) Generally considered as an attractive den for corrupt practices and peculation – due to relatively poor monitoring and management, low returns, poor financial reporting, and being off the radar; and
- (ix) Just seen as another business opportunity/transaction, means of making money, fulfilling the interests of the private business owners and not as a means of providing a service in the interest of the facility users.

## PART B: GU&M IN THE ASSET LIFECYCLE

### 9. GU&M ACTIVITIES IN THE ASSET LIFECYCLE

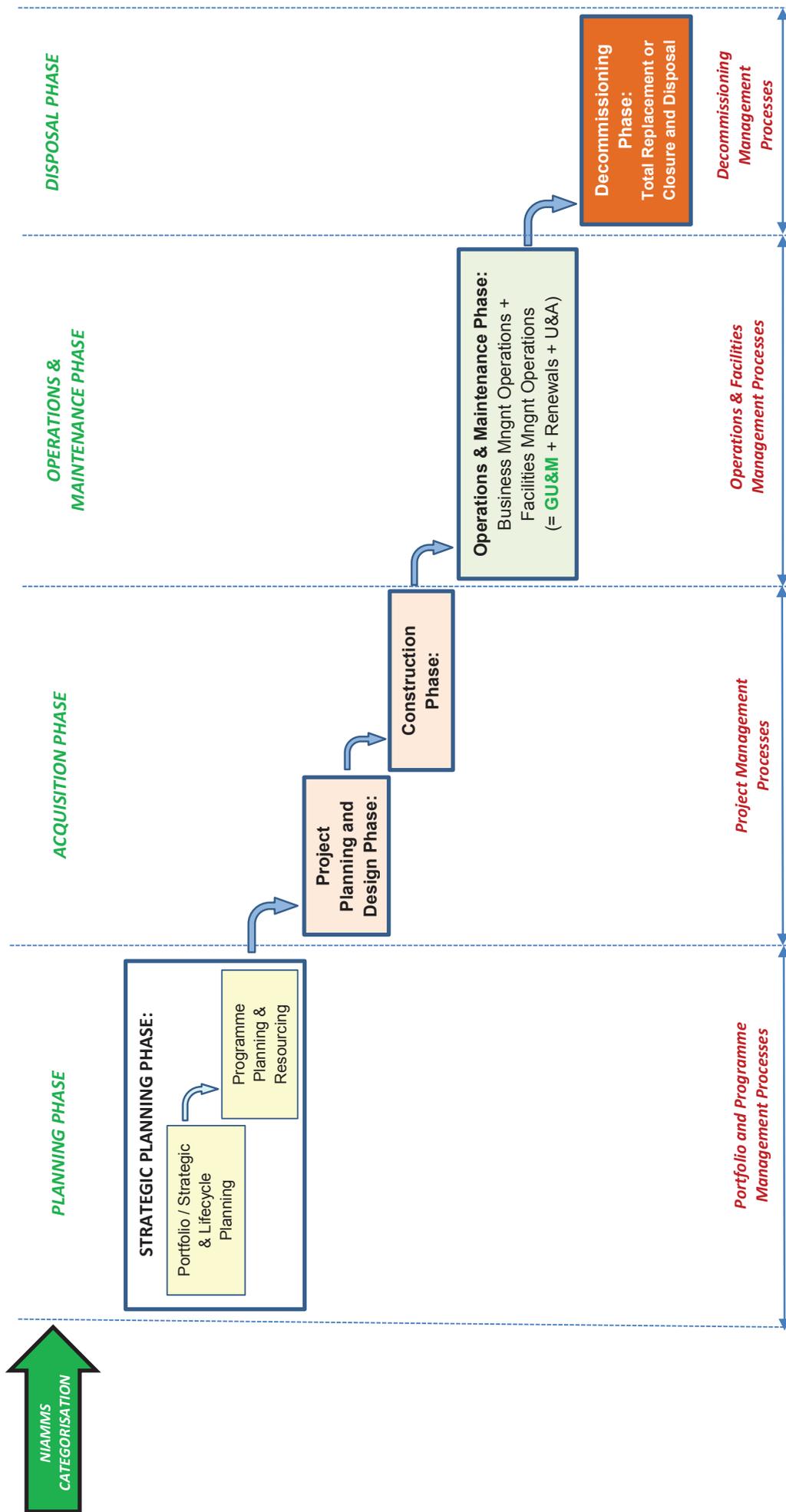
#### 9.1 General Considerations

- (a) The concept of and a need for considering general upkeep and maintenance (GU&M) activities and a need for mapping out the GU&M Processes is of interest to various key roleplayers at different stages of an Asset Lifecycle – when the idea of developing a particular education facility was conceived, its planning and design, its construction, utilisation and disposal at the end of its useful life. These key roleplayers include:
- (i) Portfolio Managers;
  - (ii) Programme Managers;
  - (iii) Project Managers;
  - (iv) Implementing Agents;
  - (v) Professional Service Providers carrying out the detailed planning and designs;
  - (vi) Contractors;
  - (vii) Construction Managers;
  - (viii) Facility Managers;
  - (ix) Operations Managers; and
  - (x) Service Providers carrying out components of the overall GU&M work.
- (b) The typical focus areas that would be of interest to these roleplayers include:
- (i) Business and strategy development focussing on the long-term viability and sustainability of their organisation, with respect to product and service offerings;
  - (ii) How to make the requisite resources available to enable the GU&M activities to be carried out;
  - (iii) How to incorporate the constructability and maintainability objects in the planning and design processes as espoused in the *Norms and Standards for Education Facilities*;
  - (iv) Effective management of quality control processes during the construction stage, thereby preventing use of unspecified construction materials and/or poor workmanship;
  - (v) How to manage the overall GU&M activities effectively, ensuring that they are carried out in pursuit of the objectives of the organisation, given the available resources; and
  - (vi) Effective collation and meaningful analysis of GU&M data and information, enabling effective and useful synthesis, reporting and ongoing review of the GU&M strategic approaches in pursuit of continuous improvement.

- (c) The purpose of this section of the *GU&M Guidelines* therefore is to:
  - (i) Map out the GU&M activities in the Education Facilities or Asset Lifecycle;
  - (ii) Provide high level definition of what each Phase of the Asset Lifecycle entails in pursuit of the GU&M objectives; and
  - (iii) How the GU&M thought process should be carried throughout, threading throughout all the Phases of the Asset Lifecycle.
- (d) The ultimate objective is to provide clarity and alignment to all the key roleplayers involved in providing basic education infrastructure and those involved in the GU&M activities on how their responsibilities fit into the bigger picture, thereby emphasising the concept of holism, integratedness and management of interfaces in carrying out the GU&M processes and activities throughout the value chain as depicted in the Asset Lifecycle.

## 9.2 The Asset Lifecycle and GU&M Activities

- (a) The Asset Lifecycle as encountered in the Programme/Project Management fraternity and Systems Engineering fraternity is depicted in **Figure 1** below.



**Figure 1:** Asset or Education Facility Lifecycle

- (b) The **Strategic Planning Phase** comprises activities that would be carried out at Portfolio and Programme Management Levels. In the basic education sector, this would typically refer to the activities carried out by the National and Provincial Departments. Typical activities that are associated with this Phase include the following:
- (i) Development of Policies, Norms and Standards, and Guidelines that govern the provisioning and maintenance of education facilities in pursuit of the business objectives of the basic education sector;
  - (ii) Development of Provincial Infrastructure Plans:
    - (1) Provincial Education Infrastructure Plans (PEIPs) detailing when and how a specific group of projects would be implemented given the available financial resources; and
    - (2) General Upkeep and Maintenance Plans detailing how the existing education facilities would be looked after and maintained.
  - (iii) Identification of specific group of projects to be implemented in a given financial (FY) and over the MTEF, and the allocation of budget for capital projects and GU&M activities.
- (c) **Project Planning and Design Phase** comprises activities that would be carried out at a Provincial Level by appointed Professional Service Providers who would be managed by an Implementing Agent or by the Provincial Department. Typical activities that are associated with this Phase include the following:
- (i) Careful site selection, detailed site investigations and refinement of User Requirements;
  - (ii) Choice of construction materials and architectural designs that would address, among others:
    - (1) Aesthetic appeal, quality and functionality requirements;
    - (2) Optimise maintainability objectives (ease of operations, ease of maintaining the facility components, availability of spare parts);
    - (3) Ensuring constructability and maintainability of design choices; and
    - (4) Ensuring cost effectiveness over the lifecycle of the facility (i.e. Lifecycle Cost analysis).
  - (iii) Develop Maintenance Plans for the facility components over the lifespan of an education facility; and
  - (iv) Develop Life-cycle Costs (LCC) for the considered alternatives (if any), indicating the required capital costs and operating costs, with the latter focussing on infrastructure interventions associated with GU&M activities and projected Renewals.
- (d) **Construction Phase** comprises construction activities on site, being overseen by a duly appointed Professional Service Provider and Implementing Agent. The activities associated with this Phase include:
- (i) Carrying out construction works per the drawings and design specifications;
  - (ii) Undertaking quality control processes by the Contractor, ensuring the use of specified construction materials and adherence to the prescribed Technical Specifications;
  - (iii) Execution of Site Supervision and Contracts Management processes by the Professional Service Provider (PSP), dealing timeously and decisively with contractual matters;

- (iv) Production of As-built Drawings, indicating all the facility components and sub-systems to facilitate the GU&M Processes;
  - (v) Commissioning, which includes testing various facility systems for optimum functionality and training of the facility-users on the operations of various facility systems and equipment;
  - (vi) Handover-over processes (i.e. handing back the site by the Contractor to the Implementing Agent / Provincial Infrastructure Unit), facilitated and managed by the PSP. This includes making available Maintenance Plans and Guarantees/Warrantees; and
  - (vii) Handing over a complete and fully functional facility by the Provincial Infrastructure Unit to the facility-users for Operations to commence. This process includes handing over to the Manager of the Facility:
    - (1) A copy of As-Built Drawings;
    - (2) Copy of Maintenance Plan incorporating all the facility components and facility sub-systems; and
    - (3) Copies of Guarantees/Warrantees.
- (e) **Operations Phase** refers to a stage when the facility has been handed over to the end-users for operations to commence, i.e. carrying out the primary activities that the facility was designed for in pursuit of its stated business objectives. During this phase the facility is exposed to human inter-actions and natural environmental exposure conditions. This gives rise to natural wear and tear, system malfunction, human misuse, abuse, breakages, accidents and disasters (natural and man-made). This Phase comprises two main sub-components, which are Business Management Operations and Facilities Management Operations:
- (i) *Business Management Operations:*
    - (1) The primary objectives is to ensure that the core business of the facility is realised through effective leadership, provisioning and management of key resources;
    - (2) The activities that have a bearing on the infrastructure and GU&M activities include the following:
      - (aa) Use of the facility, its systems and equipment by the Operators/end-users;
      - (ab) Feedback by the end-users to the Facilities Management Team on the functionality, user-friendliness of the facility components, systems and equipment for future improvements; and
      - (ac) Timeous reporting of the system malfunction and/or breakages by the End-users to the Facilities Management Team.
  - (ii) *Facilities Management Operations:*
    - (1) The primary objective of Facilities Management is to ensure that:
      - (aa) The facility in its totality, as was built, remains fully functional, is safe, clean, well-looked after, is not overloaded, and systems and equipment are not used incorrectly and is not vandalised, so that the business objectives that are pursued through Business Operations Management are realised at all times;

- (ab) The facility is maintained effectively, per the Maintenance Plans for it to operate optimally;
  - (ac) Renewals (Renovations, Rehabilitation, Refurbishment and Retrofitting) are carried out if some facility components are no longer functioning optimally after repeated maintenance interventions were carried out; and
  - (ad) Upgrades and Additions (U&A) are carried out on the facility to provide necessary upgrades and providing additional capacity on the facility components to meet the latest business demands (e.g. curriculum changes), changes in technology, replacement of obsolete equipment and tools, or respond to the latest legislative requirements.
- (2) The activities that have a bearing on the infrastructure and on the GU&M activities to be carried out by the Facilities Management Team include the following:
- (aa) Putting in place the management structure for carrying out GU&M activities;
  - (ab) Providing and managing all the necessary GU&M resources and supplies (See Section 16);
  - (ac) Carrying out the GU&M activities as detailed under Section 12, following the Maintenance Plans;
  - (ad) Management of Occupational Health and Safety issues associated with GU&M activities;
  - (ae) Collating information and reporting on GU&M activities per the stated requirements using the available reporting systems;
  - (af) Reporting all the incidents associated with GU&M activities;
  - (ag) Ensure constant liaison and feedback (formal and informal) between Facilities Management Team and Business Operations Management Team on the functionality of various facility components for system improvement;
  - (ah) Provide feedback to the Provincial Infrastructure Team on the performance, behaviour, usability of some of the equipment and construction materials to aid continuous system improvement; and
  - (ai) Report a need for carrying out facility Renewals and/or U&A to the Provincial Infrastructure Team and ensure that they are carried at the appropriate times.

(f) **Decommissioning Phase:**

- (i) Elsewhere the Decommissioning Phase is treated and incorporated as part of the Operations Phase but for the purpose of this document it has been presented as a separate phase. This has been necessitated by the fact that elsewhere Decommissioning Processes are carried out by the Facilities Management Team but in the basic education sector they are initiated, motivated for and carried out by the Provincial Infrastructure Team and other Units in the PED, doing so as part of the Portfolio Management Processes, looking at infrastructure imperatives and other imperatives (e.g. the School Rationalisation and Re-alignment Programme).

- (ii) It is informed by the fact that after a number of years into Operations, with effective GU&M activities being carried out, that changes take place in the contextual environment and that infrastructural interventions through Replacements and/or U&A may be too expensive and cumbersome to pursue further leading to a need to either decommission and close down the facility or to replace it in its totality, either on the existing site or to re-establish it on a new site.
  - (iii) The decommissioning process and its management would be carried out by the Provincial Infrastructure Unit together with other relevant PED Units.
  - (iv) Once this Phase has been reached and the facility decommissioned, no further GU&M activities would be carried out on that facility.
- (g) These *GU&M Guidelines* focus mainly on the Operations Phase, more specifically on the Facilities Management processes as they pertain to the GU&M activities. These are dealt with in the following Sections of this document.

## PART C: GU&M INTERVENTIONS

### 10. FORMS OF GENERAL UPKEEP AND MAINTENANCE FOR THE BASIC EDUCATION SECTOR

#### 10.1 General Forms of General Upkeep and Maintenance Interventions

- (a) Section 9.2 identified the location of the General Upkeep and Maintenance (GU&M) activities in the broader spectrum of an Asset Lifecycle for a typical education facility. However, it did not provide details on the interpretation of some of the terms found therein given the number of definitions and interpretation of processes that are found in the literature. The processes that are relevant and those that would be applicable in the basic education sector will be described under this Part (Part C) of the document.
- 
- (b) The posture of these *GU&M Guidelines* is inclined towards simplicity with respect to the categorisation of various infrastructural interventions that are required post-construction of a facility. This is aimed at enhancing ease of undertaking implementation processes and clarity of purpose. In order to achieve this objective, the approach that has been adopted is that of leaving some of the concepts at a high level of granularity by avoiding “splitting hairs”.
- (c) Notwithstanding the strategic intent advanced in paragraph (b) above, it was considered ideal to highlight some of the categorisations found in the literature with a view to indicating awareness and emphasising inclusivity and relevance given the maturity level of the sector on the GU&M aspects.
- (d) Elsewhere maintenance interventions are classified as:
- (i) Planned Maintenance:
    - (1) Routine Maintenance;
    - (2) Day-to-day Maintenance;
    - (3) Preventative Maintenance; and
    - (4) Predictive Maintenance.
  - (ii) Unplanned Maintenance:
    - (1) Emergency Maintenance;
    - (2) Ad-hoc Maintenance;
    - (3) Corrective or Condition-based Maintenance; and
    - (4) Run-to-Breakdown Maintenance.
  - (iii) “Skipped” Maintenance:
    - (1) Deferred Maintenance; and
    - (2) “Limited Maintenance”.

- (e) Summarily, the type of interventions that might be required as part of the GU&M works could essentially be any of the following combinations:
  - (i) Planned/scheduled or unplanned activities;
  - (ii) Emergency or normal/routine activities; and
  - (iii) Might require specialist or non-specialist interventions.
- (f) The types of interventions referred to in paragraph (e) above could be:
  - (i) Classified as being either minor or major works; and
  - (ii) Carried out at any time that is considered as being appropriate, convenient and reasonable.

## 10.2 Specific References

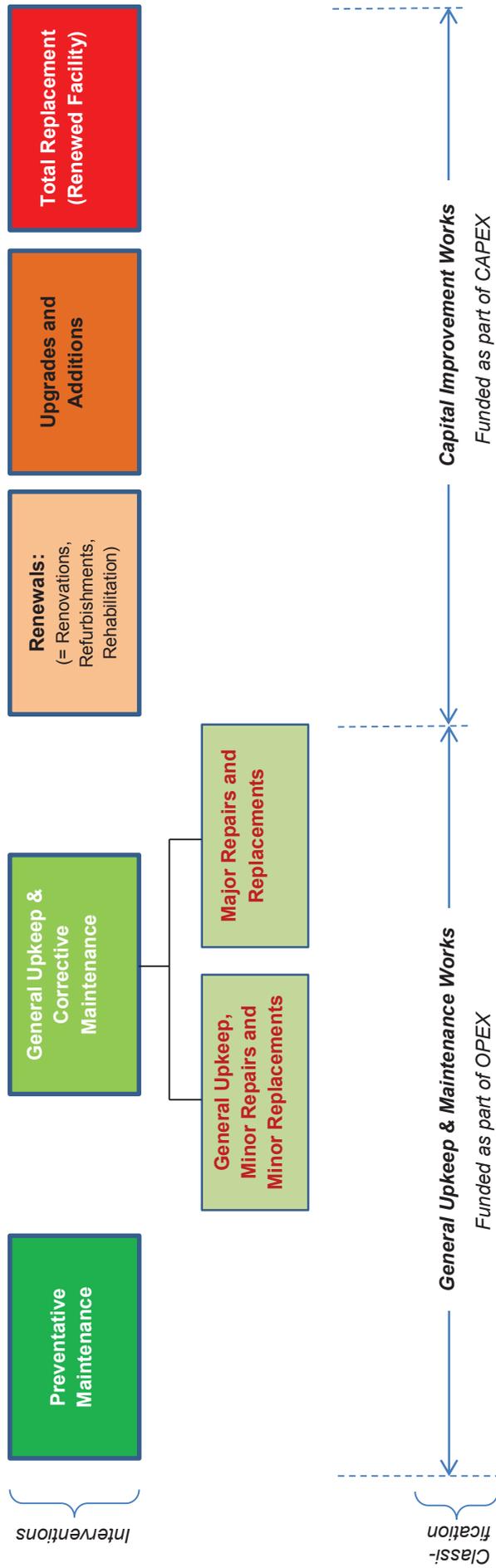
For the purpose of this document, the definition of certain processes is provided below:

- (a) **Maintenance** refers to:
  - (i) A combination of any technical and non-technical work and the associated management and administrative processes that need to be undertaken to retain any component of a facility at an acceptable occupational and functional standard thereby:
    - (1) Sustaining its usefulness and value;
    - (2) Ensuring its full functionality over its lifespan in pursuit of the business objectives of the facility; and
    - (3) Elongate its useful life.
  - (ii) This would refer to any corrective or preventative work of any type or magnitude that would be carried out on a facility with a view to maintaining the same level of functionality of any facility component and/or its systems as were provided at the time the facility was commissioned or intended to be provided at the design stage.
- (b) **Maintenance activities** include a composite set of planned and unplanned interventions that may be classified as either minor works or major works (in the context of GU&M activities and not in the context of the normal construction works). These interventions need to be carried out on an ongoing basis as part of Operations, either at defined intervals or as and when required.
- (c) **General Upkeep** refers to a need to look after the education facilities, taking care of these assets by cleaning them (dusting, sweeping, vacuum cleaning, collecting waste), managing solid waste, managing condemned materials, de-weeding them, trimming shrubs and trees, cutting grass and keeping them organised and orderly. General Upkeep interventions are intended to preserve the professional outlook of the facility, enable infection control, and maintain the aesthetic appeal of these facilities by keeping them and their systems in their pristine, hygienic, and tidy state at all times.
- (d) The facility is considered as being **fully functional** if it continues to serve the purpose it was intended to fulfil when it was planned and designed in terms of occupational and operational requirements, assuming that it is not abused or utilised beyond its design capacity. This refers to overcrowding with respect to the number of facility users and overloading of the facility systems.

- (e) Any **design omissions** such as optimum energy efficiency considerations, system capacity under-designs, omission of certain components **and additional capacity requirements** such as additional functional space requirements, introduction of new systems should not be addressed as part of maintenance work but as part of Capital Improvement Works (CIW) such as Upgrades and Additions. *(As emphasised and provided for in the Norms and Standards for Education Facilities, it is imperative and impressed upon that complete and fully functional education facilities be provided at the onset to avoid drib-and-drab additions a later stage.)*
- (f) The **condition assessments** of Education Facilities carried out per the *Guidelines for Condition Assessment of Education Facilities* differentiate between interventions associated with GU&M from activities associated with CIW.
- (g) **Education facilities** is an inclusive term that refers to:
  - (i) All the buildings in an education facility that are aimed at supporting the core, specialist, administrative, and support functions;
  - (ii) Basic and specialist systems such as sewer, water, telecommunications, Information and Communication Technology (ICT), security systems, and fire-fighting systems;
  - (iii) Furniture, fittings and equipment (FFE);
  - (iv) Outdoor amenities that include the fences and gates, name boards, drop-off and pick-up areas, driveways, parking lots, walkways, signage, grounds, landscapes, open spaces, gardens, courtyards, playgrounds, and sport-fields;
  - (v) School environs – area within a **5m** buffer outside the perimeter fence-line where the facility is not abutting another property; and
  - (vi) Vehicles, tools and equipment used for operations and GU&M activities.
- (h) **Management and Administrative processes** include planning, budgeting, organising, procurement of goods and services associated with GU&M activities, decision-making, co-ordination, controlling and reporting.
- (i) While maintenance **excludes activities that are aimed at expanding the capacity of an asset** or otherwise upgrading it to serve the needs that are different from, or significantly greater than, those originally intended thereby increasing the value of the facility, this component of work will also be reflected in this document to provide a complete picture of various interventions that are required on an education facility during its service life, but without going into technical details.

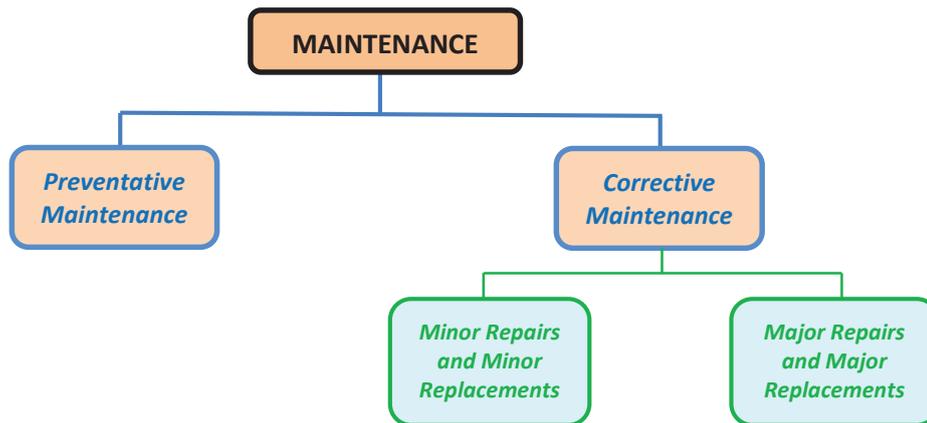
### 10.3 Classification of General Upkeep and Maintenance Interventions in the Basic Education Sector

- (a) The general interventions that are required on an education facility post-construction are presented in the continuum in **Figure 2** overleaf.
- (b) Figure 2 also reflects the type of work that would be classified as falling under GU&M or under Capital Improvement Works (CIW).



**Figure 2:** Different interventions required on an education facility over its lifespan post construction.

- (c) In the basic education sector and for the purpose of these *GU&M Guidelines* maintenance is an inclusive term that refers to Corrective Maintenance and Preventative Maintenance and these will be detailed below.



(d) **Preventative Maintenance:**

- (i) Refers to maintenance work that is carried out on a facility component or sub-system at pre-determined intervals, per the designer's or manufacturer's specifications, before any failure or sub-optimum functionality is detected and is intended to reduce the probability of failure or sub-optimal functionality of an item.
- (ii) Has the following attributes:
- (1) Is planned and therefore scheduled and carried out routinely at predefined intervals;
  - (2) No signs of actual system or component failure would have occurred or sub-optimal functionality would have been detected at the time it is carried out;
  - (3) Is intended to prevent any system failure;
  - (4) Is carried out by a specialist for the component or systems concerned;
  - (5) May include only inspections, testing, calibration, surface cleaning and lubrication;
  - (6) May lead to a need for minor or major repairs, or minor or major replacements as part of Corrective Maintenance if potential catastrophic failure is detected; and
  - (7) May include predictive assessments to ascertain the remaining economic service life of the facility component and/or sub-systems for planning purposes.

(e) **Corrective Maintenance:**

- (i) Refers to maintenance activities that are carried out on a facility component or sub-system after its total failure has occurred or sub-optimal functionality of any of these items has been identified and is intended to restore the normal level of functionality and/or aesthetic appeal as was intended at the design stage.
- (ii) Has the following attributes:
- (1) Manifests itself as either defects, emergence of failures or total breakdown due to normal wear and tear, accidents, natural disasters, system malfunction, incorrect operations, human error, abuse or vandalism;

- (2) Carried out on an ongoing basis, as and when required, therefore tends to be regarded as a day-to-day maintenance especially when dealing with minor maintenance works;
- (3) Failures could be instantaneous or gradual deterioration over time;
- (4) Could either be of emergency nature therefore unplanned or non-emergency nature therefore execution of work could be planned;
- (5) Includes planning for and responding to Run-to-Breakdown (RBT) facility components or systems, where consequences of failure are relatively small, not life threatening but may lead to temporary disruptions of operations (These should be dealt with according to provisions of Section 12.3.1(k) to (m) below.); and
- (6) Could require either specialist or non-specialist skills to address them.



- (f) In the basic education sector it becomes necessary to further break down Corrective Maintenance into Minor Maintenance Works and Major Maintenance Works. The need for pursuing this route is necessitated by the factors presented in **Table 1** below:

**Table 1:** Factors informing categorisation of Corrective Maintenance Works in the basic education sector as Minor or Major Maintenance Works.

Critical Factors	Categorisation of Corrective Maintenance	
	Minor Maintenance Work	Major Maintenance Work
Source of budget allocation	For schools, it is funded from percentage (e.g. 25%) of the total allocation assigned to each school per NNSSF <sup>1</sup> .	Funded from a portion of either PES <sup>2</sup> or EIG <sup>3</sup> .
Affordability levels	Limited budget of less than R500 000 <sup>4</sup> per annum for mega schools.	Based on the budget availability, and could be more than R1million per annum.
Level of expertise or skills level required to carry out the necessary interventions	Less technical and less complex in nature and could be carried out by the Caretaker or Groundsman.	Tends to be more technical and more complex in nature therefore requiring services of external specialist Service Providers.

Critical Factors	Categorisation of Corrective Maintenance	
	Minor Maintenance Work	Major Maintenance Work
Time taken to address the problem	Work could be completed within a short period of time, typically up to four hours.	Work could take a number of days to be completed.
Entity to carry out the work	Carried out and managed at a facility level.	Managed at Provincial Level.
Financial Reporting	Reported as part of a facility's Annual Financial Report.	Reported against overall infrastructure budget allocation at Provincial Level.

1 NNSF = National Norms and Standards for School Funding

2 PES = Provincial Equitable Share.

3 EIG = Education Infrastructure Grant.

4 Is a function of the number of learners in a school and the Quintile Ranking of the school concerned and assuming 25% set aside for GU&M works.

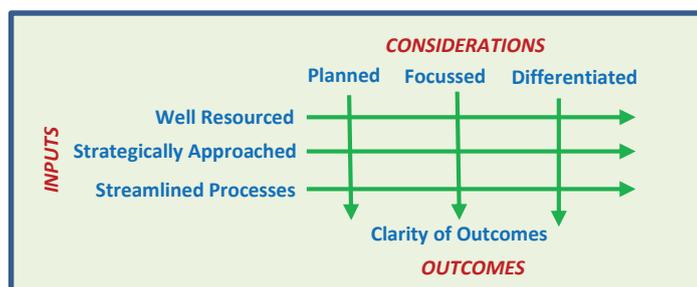
- (g) While **Predictive “Maintenance”** is not reflected in Figure 2, it nevertheless is a planning activity that should be undertaken at regular intervals, more as part of the condition assessment of a facility. Other considerations are that:
- (i) Predictive “Maintenance” is not maintenance *per se* but an assessment that is carried out using sophisticated computer software to forecast the potential failure of an equipment or component of a facility based on its age, degree of utilisation, performance measures and determination of potential interventions. This could be based on either Condition-based Predictive Method or Statistical-based Predictive Method.
  - (ii) Predictive “Maintenance” should be carried out at a Provincial Level when estimating the remaining useful-life of a facility component as part of developing Maintenance Plans under the Portfolio Management processes.
  - (iii) At this stage of establishing a strong GU&M culture in the sector, Predictive “Maintenance” would not be required but could be carried out if it is necessary to do so and where the technology and skills for carrying it out are available.
- (h) **Deferred “Maintenance”** is also another “intervention” that is commonly referred to and relevant in the basic education sector. It is not reflected in Figure 2, but it could be encountered at any stage during Operations. However, for the purpose of these *GU&M Guidelines* Deferred “Maintenance”:
- (i) Is not considered as maintenance *per se*, but a means of identifying maintenance backlogs. It is an indication of maintenance work that was not carried out when it should have been or was scheduled to be carried out but instead put off or delayed for a future period because of shortage of funds or other resources.
  - (ii) Would only be referred to when assessing the maintenance backlogs as part of developing Maintenance Plans at Portfolio Management Level.
  - (iii) Assessment of the magnitude (in terms of the value) and the nature of Corrective Maintenance works that need to be carried out requires a specialist skill and, where this assessment is required, it would be carried out at Provincial Level where relevant technical skills for such reside or are expected to be found.

- (i) **“Limited Maintenance”** refers to a conscious decision not to undertake any major maintenance work to preserve the facility besides General Upkeep and Minor Repairs (surface cleaning, sweeping, collection and disposal of solid waste, and minor improvisations). The following should be considered when undertaking a “limited maintenance” decision:
  - (i) This would only be applicable where the facility is built of inappropriate materials and/or dilapidated and its replacement is imminent. (Such assessment would be informed by the Priority Rating following the Comprehensive Baseline Condition Assessments and/or Provincial Education Infrastructure Plans.)
  - (ii) “Limited Maintenance” does not apply in instances where the facility is owned by third parties, where a Department may be of the opinion that it does not want to invest on a private property. Provisions of Section 15 below should be considered to deal with such cases.

## 11. GUIDING PRINCIPLES FOR PLANNING GU&M INTERVENTIONS

The guiding principles that should inform the general upkeep and maintenance (GU&M) interventions in the basic education sector, therefore needing to be observed and adhered to at all times during the planning and design processes, are that GU&M interventions should be:

- (a) **Planned** – This refers to a need for GU&M interventions to be structured, co-ordinated and documented, following the fact that maintenance is about resource planning.
- (b) **Focussed** - The processes should be facility specific and purpose driven, as informed by the 5 specific spheres of influence under Section 7(b).
- (c) **Differentiated** – This calls for a critical need to delineate between GU&M activities from Capital Improvement Works (CIW), which include Renewals, Upgrades and Additions (U&A) and Total Replacements. This is for planning and financial reporting purposes.
- (d) **Well-resourced** – This refers to a need to provide the necessary resources, which are:
  - (i) Skilled, competent and sufficient Human Resources;
  - (ii) Adequate funding;
  - (iii) Requisite tools of trade; and
  - (iv) Requisite Operating Systems.
- (e) **Strategically Approached** – The approach should be holistic, integrated seamlessly with effective management of interfaces (characterised by well-defined feedforward and feedback loops between the Planning and Design Unit and the Maintenance Teams).
- (f) **Streamlined Processes** – Need for well-defined, logical, practical, non-bureaucratic, and non-pervasive processes.
- (g) **Clarity of Expectations** in terms of:
  - (i) Clearly defined Roles and Responsibilities of all the key role-players; and
  - (ii) Simplified Performance Standards at all levels.



## 12. UNDERTAKING GENERAL UPKEEP AND MAINTENANCE INTERVENTIONS

### 12.1 Corrective Maintenance: General Upkeep, Minor Repairs and Minor Replacements

#### 12.1.1 General Principles

- (a) As Per Section 10.3, Corrective Maintenance is sub-divided into Minor Maintenance Work and Major Maintenance Work. Therefore this section of the document deals with Minor Maintenance Works together with General Upkeep and is referred to as General Upkeep, Minor Repairs and Minor Replacements (GUMRR).
- (b) For the purpose of these *GU&M Guidelines*, GUMRR entails:
- (i) The general process of looking after a facility, keeping it clean and tidy indoors and outdoors, managing the condemned materials and solid waste effectively;
  - (ii) Carrying out minor repair works of small items such as loose screws on doors and furniture;
  - (iii) Replacing small items such as fused globes, broken window panes or broken door handles, padlocks, electrical switches and plug points; and
  - (iv) Painting certain sections of the facility.
- (c) While School Governing Bodies would provide an overall oversight and monitoring function regarding maintenance of school facilities, the effectiveness in carrying out this function would be achieved by:
- (i) Having a single point of accountability;
  - (ii) Having proximity to these facilities, being there on a day-to-day basis; and
  - (iii) Having an influence and control.
- (d) It therefore follows that the single point of accountability for GUMRR activities in the basic education sector is the Facility Manager and these are specified in **Table 2** below:



**Table 2:** *Facility Managers accountable for GUMRR activities in the basic education sector.*

Education Facility	Person Accountable for GUMRR
School Facility	School Principal
Leaner Boarding Facility	Boarding Master, Boarding Mistress or Matron
District Office	District Director
Circuit Office	Circuit Manager

- (e) The specific activities associated with GUMRR and the entities/individuals responsible for undertaking those activities are reflected in **Table 3** below:

**Table 3: Activities associated with GUMRR and Responsible Entities / Persons.**



Type of Activities	Responsible Entities/Persons
<p><b>General Upkeep:</b></p> <ul style="list-style-type: none"> <li>• Cleaning indoors of Core, Specialist, Common Areas (including corridors and ablution facilities), Admin Spaces and Support Spaces - floors, walls, ceiling, windows, and curtaining (curtains, blinds and draping).</li> <li>• Cleaning of Furniture, Fittings and Equipment (FFE).</li> <li>• This entails sweeping, wiping, scrubbing, polishing, dusting surfaces and washing of curtains.</li> </ul>	<ul style="list-style-type: none"> <li>• Facility Users;</li> <li>• Dedicated Employees;</li> <li>• General Workers / Cleaners; or</li> <li>• Private Company where it could be afforded.</li> </ul>
<ul style="list-style-type: none"> <li>• Picking up of papers and other solid waste materials outdoors and disposing thereof in designated areas (dust bins or waste disposal area).</li> <li>• Separation of solid waste where recycling is practiced.</li> </ul>	<ul style="list-style-type: none"> <li>• Facility Users; or</li> <li>• Groundsman.</li> </ul>
<ul style="list-style-type: none"> <li>• Cleaning outdoor areas, driveways, walkways, assemble areas, and external windows.</li> <li>• This entails sweeping, wiping, scrubbing, and de-weeding.</li> </ul>	<ul style="list-style-type: none"> <li>• Facility Users; or</li> <li>• Groundsman.</li> </ul>
<ul style="list-style-type: none"> <li>• Cleaning and maintaining gardens, grounds, landscapes, open spaces court-yards, playgrounds, sport-fields.</li> <li>• This entails de-weeding, cutting of grass, trimming and shaping of trees, removal and disposal or composting of cuttings in designated areas.</li> <li>• Planting flowers and trees.</li> <li>• Installing grass patches.</li> <li>• Watering flower gardens.</li> </ul>	<ul style="list-style-type: none"> <li>• Groundsman</li> </ul>
<ul style="list-style-type: none"> <li>• Cleaning and managing environs of the facility – area covering 5m buffer zone just outside the school perimeter fence where no other property abuts the facility or up to the street (where the facility is along a street).</li> <li>• This entails de-weeding, cutting grass, cleaning paved areas, cutting back, trimming and shaping of trees, picking up solid waste.</li> </ul>	<ul style="list-style-type: none"> <li>• Groundsman</li> </ul>



Type of Activities	Responsible Entities/Persons
<ul style="list-style-type: none"> <li>• Cleaning stormwater drainage system – gutters, down-pipes, water channels, drains, drainage pipes, and drainage inlets.</li> <li>• This entails removal of debris, unblocking and splashing with water (where available).</li> </ul>	<ul style="list-style-type: none"> <li>• Groundsman</li> </ul>
<ul style="list-style-type: none"> <li>• Management of Solid Waste Area.</li> <li>• Management of Condemnation Area.</li> <li>• This entails keeping the temporary storage areas for solid waste and condemned materials clean, tidy and organised.</li> <li>• Ensuring that solid waste is incinerated on-site, where permissible, or taken off-site where the waste removal system is available.</li> </ul>	<ul style="list-style-type: none"> <li>• Groundsman</li> </ul>
<b>Minor Repairs:</b>	
<ul style="list-style-type: none"> <li>• Minor repair work on the Furniture and Fittings, doors and windows.</li> <li>• This entails tightening loose screws, oiling, applying wood-filler and paint touch-ups.</li> </ul>	<ul style="list-style-type: none"> <li>• Caretaker (this term is also used to refer to a Handyman)</li> </ul>
<ul style="list-style-type: none"> <li>• Closing hair-line cracks and patching surface scratches on the walls.</li> <li>• This includes applying polyfiller (or similar) and paint touch-ups.</li> </ul>	<ul style="list-style-type: none"> <li>• Caretaker</li> </ul>
<ul style="list-style-type: none"> <li>• Tightening loose screws on switches and plug points.</li> </ul>	<ul style="list-style-type: none"> <li>• Caretaker</li> </ul>
<ul style="list-style-type: none"> <li>• Minor repair work on the fence and gates but excluding the special fences covered under the <i>School Infrastructure Safety and Security Guidelines</i>.</li> </ul>	<ul style="list-style-type: none"> <li>• Groundsman</li> </ul>
<ul style="list-style-type: none"> <li>• Replacing/fixing few roof sheets blown away by wind, fascia boards, gutters, downpipes, etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Caretaker</li> </ul>
<b>Minor Replacements:</b>	
<ul style="list-style-type: none"> <li>• Small electrical items (fused globes, switches and plug points), water (taps, pipes), component of a sewerage system.</li> </ul>	<ul style="list-style-type: none"> <li>• Caretaker</li> </ul>
<ul style="list-style-type: none"> <li>• Broken handles for doors, windows, built-ins.</li> </ul>	<ul style="list-style-type: none"> <li>• Caretaker</li> </ul>
<ul style="list-style-type: none"> <li>• Broken minor/small pieces of furniture.</li> </ul>	<ul style="list-style-type: none"> <li>• Caretaker</li> </ul>
<ul style="list-style-type: none"> <li>• Broken minor and replaceable components of certain equipment.</li> </ul>	<ul style="list-style-type: none"> <li>• Caretaker</li> </ul>
<ul style="list-style-type: none"> <li>• Couple of floor tiles (ceramic, vinyl or carpet).</li> </ul>	<ul style="list-style-type: none"> <li>• Caretaker</li> </ul>
<ul style="list-style-type: none"> <li>• Curtains and blinds.</li> </ul>	<ul style="list-style-type: none"> <li>• Caretaker</li> </ul>
<ul style="list-style-type: none"> <li>• Few roof tiles or few roof sheets.</li> </ul>	<ul style="list-style-type: none"> <li>• Caretaker</li> </ul>
<ul style="list-style-type: none"> <li>• Broken window panes.</li> </ul>	<ul style="list-style-type: none"> <li>• Caretaker</li> </ul>
<ul style="list-style-type: none"> <li>• Broken doors.</li> </ul>	<ul style="list-style-type: none"> <li>• Caretaker</li> </ul>



Type of Activities	Responsible Entities/Persons
<b>Minor Improvements:</b>	
<ul style="list-style-type: none"> <li>• Paintwork;</li> <li>• Installation of additional small items such as connection points (e.g. plug points, built-in units, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>• Caretaker; or</li> <li>• Appointed external Service Provider.</li> </ul>

- (f) In deciding on whether to provide Cleaners or seek services of a private Cleaning Company, the Facility Management must:
- (i) Assess the affordability based on the cost of providing such services against the available funds earmarked for such;
  - (ii) Where the school is already provided with financial support by the Government, e.g. the non-fee paying schools, the provision of dedicated Cleaners must be considered as a last resort; and
  - (iii) Where no Cleaners are provided the facility-users would be required to undertake the General Upkeep activities.
- (g) The size of a school in terms of Learner Enrolment Figures should also be considered to determine the extent to which some of the activities could be carried out by the facility-users, hired Cleaners or a combination of both. Small and micro schools that are non-fee paying schools:
- (i) May not be provided with hired Cleaners; and
  - (ii) The role of the Caretaker should be combined with the Groundsman's.
- (h) Where a component of the facility has been damaged intentionally or vandalised by one of the facility-users, Cleaners, or the members of the community, the person concerned should be caused to settle the full costs of repairing the damages including the cost of labour.

### 12.1.2 General Procedures for Undertaking GUMRR Activities

- (a) The Facility Manager should identify and formally assign the GUMRR responsibility to one of the members of staff as a Facility Maintenance Co-ordinator (FMC). Such a person should preferably be at a senior level.
- (b) Depending upon the size of the facility and the extent of the required GU&M interventions, the Facility Manager may identify and appoint additional members of staff to act as Deputy FMCs, to assist the FMC.
- (c) Where a group of people have been assigned this responsibility, their specific roles and responsibilities should be defined by the Facility Manager and communicated to them.

- (d) The Provincial Chief Director: Infrastructure should ensure that specifications of all the potential replacement parts are made available to the FMC.
- (e) The Facility Management, FMC or any person other than the Provincial Chief Director: Infrastructure is not permitted to decide on the quality of replacement parts to be used. Where such information is not available, direction of the Provincial Chief Director: Infrastructure should be sought.
- (f) Under no circumstances should poor quality materials be used as replacement parts on the education facilities.
- (g) The Facility Manager together with appointed FMC should draw a GUMRR Plan at the beginning of each academic year or financial year, as the case might be, to guide the GUMRR activities in the facility during the course of the year.
- (h) The GUMRR Plan should, as a minimum, include the following:
  - (i) Nature of GUMRR activities to be carried out;
  - (ii) GUMRR activities to be outsourced;
  - (iii) Plans for soliciting Service Providers for the work to be outsourced (acquisition process, budget requirements, etc.);
  - (iv) Roles and Responsibilities of various role-players involved in GUMRR activities;
  - (v) Agreed schedule of activities such as Preventative Maintenance and/or roster for GUMRR activities;
  - (vi) Inventory/Asset Register for GUMRR tools and equipment (existing stock, items that need to be purchased, items to be hired); and
  - (vii) Agreed minimum quality standards for the GUMRR work to be carried out.
- (i) The FMC should:
  - (i) Prepare a record of all Minor Repairs that were carried out – specific areas, nature of repair work, frequency of repairs and associated costs; and
  - (ii) Record all the expenses associated with GUMRR activities.
- (j) The Facility Manager, assisted by FMM, should prepare GUMRR Reports (as part of the all-encompassing GU&M Report) and submit them as follows:
  - (i) School Principals to prepare consolidated School GUMRR Reports and submit them to their respective SGBs and to the respective District Maintenance Manager (DMM) on the dates to be determined and communicated by the Provincial Maintenance Director (PMD);
  - (ii) Circuit Managers, assisted by their FMCs, to prepare to Circuit Office GUMRR Reports and submit them to DMM on the dates to be determined and communicated by the PMD;
  - (iii) District Directors, assisted by their DMMs, to prepare and submit to the PMD:
    - (1) District Office GUMRR Reports;
    - (2) Consolidated GUMRR Reports for Circuit Offices; and

(3) Consolidated GUMRR Reports for Schools.

- (k) The PMD to analyse trends on the GUMRR Reports (e.g. cost trends and frequency of breakages and replacements, etc.) and advise the Provincial Chief Director: Infrastructure of the observed trends for planning, budgeting and for informing the specifications on building material to be discontinued and new/replacement building materials to be considered. The Chief Director: Infrastructure should issue a circular to all the appointed Implementing Agents on the utilisation of such building materials.
- (l) The observed trends and recommendations should form part of the GU&M Plans (User Asset Management Plans) to be prepared by the Provincial Education Departments (PEDs) for submission to the Department of Basic Education (DBE).
- (m) The Works Inspectors stationed at District Offices should carry out regular assessments on the education facilities assigned to them, focussing on the extent to which GUMRR activities are carried out and advise the FMC where necessary.
- (n) The Facility Managers should report on the extent to which GUMRR work that was not carried out per the GU&M Plans and any delays or non-action, the reasons for such and the remedial measures to be undertaken moving forward.
- (o) The extent to which GUMRR Activities were carried out should form part of the Performance Assessment of the Facility Manager.
- (p) When a Computerised Maintenance Management System (CMMS) is in place, the maintenance information should be uploaded directly onto such system by all the relevant parties.
- (q) The DBE would be responsible for acquiring, managing and maintaining the CMMS mentioned in paragraph (p) above for use by the basic education sector at large.

## 12.2 Corrective Maintenance: Major Repairs and Major Replacements



### 12.2.1 General Principles

- (a) Per Section 10.3 above, Corrective Maintenance is sub-divided into Minor Maintenance Work and Major Maintenance Work. This section of the document deals with Major Maintenance Works, which covers Major Repairs and Major Replacements (MRR).

- (b) Per the continuum in Figure 2, the work associated with MRR is on the borderline of what is regarded as “maintenance” work and Capital Improvements Works (CIW) and is generally a source of confusion and dispute on the financial accounting reporting standards (General Acceptable Accounting Principles – GAAP). The nature of work to be carried out therefore needs careful consideration for:
- (i) Uniformity in reporting and trend analysis;
  - (ii) Correct and consistent financial reporting;
  - (iii) Correct determination of lines of accountability with respect to the required interventions; and
  - (iv) Determination of source of budget to carry out the works.
- (c) The trigger and the nature of the work to be carried out would determine the classification of such work, whether it would be classified as Maintenance Work or Capital Improvement Work and not necessarily the value of the work.
- (d) Following paragraph (c) above, MRR refers to Corrective Maintenance Work that needs to be carried out on any component of a facility, building system or piece of equipment to bring it back to its original full functionality and aesthetic appeal as was designed and built before the failure or damage occurred.
- (e) The trigger for MRR would be unexpected major damage or sudden failure of a large component of a facility caused either by system malfunction, natural or man-made disaster.
- (f) Under no circumstances should poor quality materials be used as replacement parts or to carry out repair work.
- (g) MRR work does not preclude use of better quality materials or equipment as replacement parts where it is necessary and cost effective to do so.
- (h) While it is inevitable that the value of the asset may be increased and useful life of the replaced component would be increased, MRR would still be regarded as Maintenance Work.
- (i) Where the damage occurred on a facility that was built of inappropriate materials, or was earmarked either for Renewals, Upgrades and Additions, or Total Replacement, consideration should be made on bringing forward the interventions that were earmarked to prevent wasteful expenditure by, for instance, putting a quality roof on a mud structure that would be replaced soon.
- (j) MRR might be planned or unplanned and might be carried out as emergency work.
- (k) Typical items that might be considered as part of the MRR activities are reflected in **Table 4** below:

**Table 4:** Typical items to be considered under Major Repairs and Major Replacement.

Nature of Potential Intervention	Entity to Attend to it
<ul style="list-style-type: none"> <li>Large portion of a roof which might include roof cladding only or roof cladding together with roof trusses. (Might be due to storm-damages, rotten trusses, heavily rusted roof sheets, removal of disused building materials such as asbestos roof sheets, or replacement of poorly constructed roofs, burnt facility).</li> </ul>	Qualified Building Contractor
<ul style="list-style-type: none"> <li>Replacement of whole or large portion of a ceiling or providing new ceiling where it did not exist before.</li> </ul>	Qualified Building Contractor
<ul style="list-style-type: none"> <li>Replacement or installation of new gutters all around, downpipes, water tanks, etc.</li> </ul>	Qualified Service Provider
<ul style="list-style-type: none"> <li>Stripping and replacement of large portion or whole of the floor coverings.</li> </ul>	Qualified Building Contractor
<ul style="list-style-type: none"> <li>Rebuilding collapsed portion of a wall.</li> </ul>	Qualified Building Contractor
<ul style="list-style-type: none"> <li>Fixing large cracks on the wall or on the floor.</li> </ul>	Qualified Building Contractor
<ul style="list-style-type: none"> <li>Fixing faulty foundations.</li> </ul>	Qualified Specialist Building Contractor
<ul style="list-style-type: none"> <li>Replacement of large portions of or whole sewerage system.</li> </ul>	Qualified Plumber
<ul style="list-style-type: none"> <li>Fixing, replacing or upgrading stormwater drainage system.</li> </ul>	Qualified Civils Contractor
<ul style="list-style-type: none"> <li>Fixing or replacing large portions of the fence or gates.</li> </ul>	Qualified Fencing Contractor
<ul style="list-style-type: none"> <li>Replacement or Upgrading any of the building systems (Water, Electricity, ICT, Safety and Security, Fire-fighting, HVAC).</li> </ul>	Qualified Service Provider
<ul style="list-style-type: none"> <li>Replacement, repairing specialised equipment e.g. for special subjects, technical workshops, laboratories, Nutrition Centre, or sports).</li> </ul>	Qualified Specialist Service Provider
<ul style="list-style-type: none"> <li>Replacement of certain parts or fixing large portion of a building (e.g. pillars, stair-cases, floor slab, window frames, water tank stands).</li> </ul>	Qualified Building Contractor
<ul style="list-style-type: none"> <li>Repairing or replacing large parts or whole pavement in assembly area, walkways, driveways, parking lots, etc.).</li> </ul>	Qualified Civils Contractor
<ul style="list-style-type: none"> <li>Replacement of dilapidated or inappropriate Sanitation Facilities.</li> </ul>	Qualified Building Contractor
<ul style="list-style-type: none"> <li>Fixing a large number of broken pieces of furniture and fittings.</li> </ul>	Qualified Carpenter / Specialist Contractor
<ul style="list-style-type: none"> <li>Repairing or replacing a large number of facility equipment, vehicles, equipment for GUMRR.</li> </ul>	Qualified Service Provider

## 12.2.2 General Procedures for Major Repairs and Major Replacements

- (a) The MRR work is by its nature a specialised work therefore it needs to be carried out by qualified Service Providers appointed and managed by the Provincial Infrastructure Unit or its appointed representative such as an Implementing Agent.
- (b) All the MRR activities should be undertaken by qualified Service Providers and these should include small contractors in the community, where they are available.
- (c) Utilisation of local small contractors, local skills and local labour should be encouraged. Proven skills and experience of the entities to be engaged must be ensured by a professional in the built environment. This assessment could be carried out by the Works Inspectors that are housed at District Offices or professionals at Provincial Offices.
- (d) In order to improve the turn-around time, manage costs, and to confirm the skills set of the Service Providers earmarked to carry out the MRR works, the PEDs should develop a database of Service Providers for various trades. Only entities that have proven skills and experience should be included on such databases. Their past performance must be taken into consideration when they are considered for inclusion on the database. This could also be facilitated by the appointed Implementing Agents.
- (e) Work carried out by the appointed contractors must be approved and/or certified by a professional in the built environment, and these include the Works Inspectors. Where these professionals are not available at the District Office the assistance of third parties, such as local Department of Public Works, Implementing Agents or Professional Service Providers, should be sought. Services of Retired Professionals (builders, architects, engineers, plumbers, etc.) could be utilised for this purpose. The Provincial Maintenance Director should facilitate the development and maintenance of a Database of Retired Professionals for this purpose and for any other associated professional work.
- (f) The Service Provider who has carried out the MRR works has to provide a Guarantee for his/her work and would be liable for any faults, latent defects or system malfunctioning during the Guarantee Period or Defects Liability Period, which should not be less than six (6) months.
- (g) The Service Provider whose quality of work or rate of delivery does not meet the required standards should be excluded from the database of Service Providers stated in paragraphs (d) and (e) above.
- (h) All the efforts must be made to minimise disturbance of the normal operations of the facility. Preferably, in schools, such work must be carried out after school hours. This must be addressed during the tendering period and must not attract any additional costs when work needs to be carried out.
- (i) Occupational Health and Safety requirements must always be given a priority to safeguard the safety and health of the facility users and of the workers.

## 12.2.3 Identification and Reporting Major Repairs and Replacement Requirements

- (a) The identification of a need for carrying out Major Repairs and Major Replacements (MRR) would be the responsibility of the Facility Management by virtue of its proximity to it.
- (b) This work could also be identified as part of the Comprehensive Baseline Condition Assessments carried out on the facility, being facilitated by the Department of Basic Education (DBE).

- (c) The Facility Maintenance Co-ordinator (FMC) would be responsible for collating information on the required MRR interventions. A need for such could either be identified by the FMC, any facility user, any member of the public, or by any Service Provider working on the facility. The FMC must always confirm the reported cases before compiling the request.
- (d) The FMC together with Facility Manager and the SGB, in the case of schools, should compile and submit MRR Requests to the Provincial Maintenance Director (PMD). This would exclude Major Repairs required on:
  - (i) The facility equipment that is under lease contract, such as photocopiers, where the breakdown should be reported directly to the equipment supplier as per the Lease Agreement;
  - (ii) The equipment used for GUMRR, where it should be taken to the equipment supplier; and
  - (iii) Vehicles, where they should be taken to reputable service garages.
- (e) The MRR Request should include the following information:
  - (i) Name of the building element, system or equipment that needs to be repaired or replaced;
  - (ii) Brief description of the damage or fault;
  - (iii) Date on which the damage or fault was first identified;
  - (iv) Impact of the damage or fault on the facility activities;
  - (v) Potential risks or lost opportunities associated with the identified areas requiring attention; and
  - (vi) Pictures of the damaged component(s).
- (f) Where the Computerised Maintenance Management Systems (CMMS) is in place, the MRR Requests should be logged directly onto such system.
- (g) Based on the nature of the reported fault, the PMD might dispatch a team of professionals to carry out a technical assessment of the damage, MRR requirements and to scope the work. Such professionals might include qualified Civil/Structural Engineers in case of building or civils work, or Electrical/Mechanical Engineers in case of electrical or mechanical work.
- (h) Based on the urgency for the required interventions and the budget availability, the PMD, through the Chief Director: Infrastructure, may source local Service Providers from the database to quote for the MRR work. (The tendered price for the work, lead time to be on site and estimated time to complete the works must always be included in the quotation and such information should be used as part of deciding on the preferred Service Provider.)
- (i) Where funds are not available, the PMD may include the required MRR work on the budget for the following financial year. Where this occurs the PMD needs to communicate such decisions to the Facility Management and FMC.
- (j) The extent of the problem might not always be known to the FMC and/or the Service Provider quoting for the MRR work until work has commenced on site. Such additional work must be communicated and approved by the Provincial Maintenance Director (PMD), following the internal approval protocols, prior to it being executed.

- (k) Any MRR work that has been carried out on the facility should be certified and approved by a professional in the built environment.
- (l) Guarantee for the MRR work carried out must be issued by the Service Provider who carried out the works.
- (m) Endeavours must be made to have the Service Providers paid immediately after the work has been certified, Guarantees were issued and a payment invoice was submitted to the PMD by the FMC.
- (n) Where the CMMS is in place and was used to report the fault, the PMD needs to close off the MRR Request on the system once all the work has been completed.

## 12.3 Preventative Maintenance

### 12.3.1 General Principles

- (a) Preventive Maintenance is a planned and scheduled maintenance that is carried out routinely on any component of the facility, a piece of equipment or any of the building systems at predetermined intervals according to the manufacturer's prescribed standards or requirements. It is aimed at reducing the probability of sudden failure of the facility component or rapid deterioration thus affecting its optimum functionality.
- (b) It is not intended to await the component failure, break-down or to function sub-optimally before it is carried out, but intended to prevent any potential failures or operations at sub-optimal levels.
- (c) It entails spending a little money now to perform regular inspections and maintenance in order to minimise future higher costs and to prolong the useful life of the facility components.
- (d) All the Preventative Maintenance activities should be carried out by a specialist for each specific specialist item.
- (e) It is incumbent upon the facility designers or original equipment suppliers and installers to provide the Preventative Maintenance Plans for the equipment or building component concerned and to issue respective guarantees/warrantees.
- (f) Preventative Maintenance should be carried out during and post the original Guarantee Period by the original Supplier or different Service Provider.
- (g) The most cost effective and efficient means of achieving this must be thought through and addressed at design documentation stage and not as an afterthought.
- (h) The Facility Manager, assisted by the FMC, is accountable for ensuring that Preventative Maintenance activities of specified facility components and systems are carried out as per the Preventative Maintenance Plans (that should be a sub-set of the GU&M Plans).
- (i) Ideally Preventative Maintenance should be carried out on all the facility components and systems:
  - (i) With catastrophic and life threatening consequences;
  - (ii) Where the cost of unplanned failure is relatively high; or
  - (iii) Where the failure may lead to significant operational disruptions for extended period of time.

- (j) As a minimum, the components of the facility to be included as part of the Preventative Maintenance are reflected in **Table 5** below:

**Table 5: Typical items to be included as part of Preventative Maintenance.**

Items/Components	Responsible Entity for undertaking Preventative Maintenance
• Fire-fighting system (Fire extinguishers, fire sprinklers, fire hydrants, fire hoses, fire alarms, etc.)	Approved company specialising in fire-fighting equipment/system
• Safety and Security System (Perimeter Fence and Gates, Surveillance Cameras, Panic Buttons, etc.)	Company specialising in Safety and Security Equipment, Fence Supplier and Installer
• Electricals (Distribution Boxes, Wiring, switches and plug points, Uninterruptable Power Supply System, Lightning Protection, etc.)	Electrical Company
• Power Supply (Solar system, Wind turbines, Plant, Generators, Back-up Power Supply, UPS)	Electrical /Mechanical Company
• Conveying equipment (Lifts, hoists, escalators, etc.)	Specialist Mechanical Company
• Water System (Boilers and piping)	Service Providers in the Plumbing Sector
• Sewerage System (Emptying of VIPs, Urine Diversion Systems such as Enviro-loos, Septic Tanks, etc.)	Service Provider in Sanitation
• ICT System (Servers, Cabling.)	Electrical/ICT Company
• Some Admin Systems and Equipment (Photocopiers, Public Announcement System, etc.)	Approved Service Provider or original Equipment Supplier
• Heating, Ventilation and Air-conditioning (HVAC) System.	HVAC Service Provider
• Special and General Equipment (Laboratory, Nutrition Centre, Laundry)	Approved Service Provider
• Pool vehicles used by the Facility for day-to-day Business Management Operations.	Car Dealer for the type of vehicle concerned or approved Service Garage.
• Equipment used for GUMRR (e.g. lawn-mowers, vacuum cleaners, etc.)	Approved Service Provider.

- (a) Items that could be included under the List of Items for Run-to-Breakdown (RTB) should not be included as part of the Preventative Maintenance to avoid unnecessary expenditure associated with GU&M activities. Per the provisions of Section 10.3(e)(ii)(5) these would entail facility components where the consequence of failure is relatively small, not life threatening but may lead to temporary disruptions of operations.
- (b) The items to be included on the RTB List include:
- (i) Smartboards, computers and printers;
  - (ii) Television sets;
  - (iii) Light bulbs;
  - (iv) Telephones and facsimile machines;
  - (v) Geysers; and
  - (vi) Building and structural elements (unless a structural failure has started to occur).
- (c) Where items have been included on the RTB List, the Facility Management must have a clear plan on how the listed items would be repaired or replaced in event of sudden failure.

### 12.3.2 General Procedures for Preventative Maintenance

- (a) The Facility Manager should assign the appointed Facility Maintenance Co-ordinator (FMC) to manage the Preventative Maintenance activities, and for keeping the Preventative Maintenance records.
- (b) The Component Supplier must provide the Preventative Maintenance Plan for the specified facility component(s) and also the associated Guarantee(s).
- (c) Where an Implementing Agent (IA) has been appointed to assist with the implementation of infrastructure projects, the Preventative Maintenance Plans and Guarantees should be submitted to that IA. The IA must provide a copy of the Maintenance Plans and Guarantees to the Facility Manager for reference purposes and keep the originals for submission to the Client Department together with As-built Drawings when the Close-out Report is submitted at the end of the project.
- (d) The Component Supplier should be required to include the Preventative Maintenance call-out fees as part of the tendered or quoted amount for supplying and installing the specified component post the Guarantee Period or in event of accidental damages during the Guarantee Period.
- (e) Any breakages or malfunctioning during the tenure of the Guarantee Period must be at the cost of the Component Supplier, provided that there was no intentional abuse or vandalism of the component.
- (f) When the Guarantee Period has elapsed, the Preventative Maintenance work should be tendered or Request for Quotations issued.
- (g) The frequency at which the Preventative Maintenance of each component would be carried out would be based on the Preventative Maintenance Plan for that component or system, per the manufacturer of such item.
- (h) The FMC should keep a schedule reflecting the dates on which Preventative Maintenance work has to be carried out.
- (i) Preventative Maintenance Records to be kept by the FMC should include the following information:
  - (i) Name of the items to be attended to under Preventative Maintenance;
  - (ii) Planned date for carrying out Preventative Maintenance work;
  - (iii) Actual date on which the Preventative Maintenance work was carried out;
  - (iv) Nature of work carried out by the Service Provider undertaking Preventative Maintenance work;
  - (v) List of parts replaced as part of Preventative Maintenance work;
  - (vi) Total costs associated with the Preventative Maintenance work (Where applicable itemised bill to be attached for records, which shall include: call out fee, labour costs, consumables, and costs for the parts where this takes place outside the Guarantee Period);
  - (vii) Details of the Service Provider carrying out the works;
  - (viii) Comments on the areas of concern raised by the Service Provider carrying out the Preventative Maintenance work; and
  - (ix) Name of the Service Provider together with the name and signature of the person carrying out the Preventative Maintenance work.

- (j) Preventative Maintenance Reports should be prepared and submitted as per Section 12.1.2 above.

## 12.4 Renewals

### 12.4.1 General Principles

- (a) Renewals, which refers to Refurbishment, Renovations, Rehabilitation and Retrofitting, is the process of renewing the facility in its totality. This includes all its components: physical infrastructure, building systems, FFE, and outdoor amenities to improve its aesthetic outlook, Indoor Environmental Quality Standards, improve its Inclusivity Provisions (accessibility to People with Disabilities) enhance its value and to bring all its components to their full functionality, align to legislative and business requirements.
- (b) This involves major repairs and major replacements on a large scale than the case would be with MRR and affects the whole facility.
- (c) The Renewals do not include adding new buildings but would include improvements such as providing pavement on areas that might not have been surfaced before, replacement of inappropriate sanitation facilities such as Pit Latrines, and making provisions for People with Disabilities.
- (d) The work to be carried out as Renewals falls under the Capital Improvement Works (CIW) and is funded as part of Capital Expenditure (CAPEX).
- (e) If the costs associated with Renewals are **less than 15%** of the Current Replacement Value of the facility, then they would be classified as Operating Expenditure (OPEX).
- (f) Renewals must be planned at least one (1) year in advance, before the scheduled works commence. This is aimed at improving the planning processes and enable proper budgeting.
- (g) Typical items that may be included as part of the Renewals are listed in **Table 6** below:

**Table 6:** *Typical items to be included under Renewals.*

Typical Items
<ul style="list-style-type: none"> <li>Repairs or replacement of roof cladding, roof trusses, fascia boards or ceiling, and roof paint.</li> </ul>
<ul style="list-style-type: none"> <li>Repair, replacement or installation of new gutters, downpipes and provision of water tanks and their stands.</li> </ul>
<ul style="list-style-type: none"> <li>Replacement of any building elements, fixing cracks on the walls and floors or replacing floor slab and floor covering.</li> </ul>
<ul style="list-style-type: none"> <li>Replacement of door-frames, doors, window frames.</li> </ul>
<ul style="list-style-type: none"> <li>Internal and external paint-work on a large scale.</li> </ul>
<ul style="list-style-type: none"> <li>Making provisions for People with Disabilities – as new or as upgrades.</li> </ul>
<ul style="list-style-type: none"> <li>Repairing, replacement or provisioning of Furniture, Fittings and Equipment (FFE).</li> </ul>
<ul style="list-style-type: none"> <li>Providing, replacement, or upgrading of any of the building systems such as:               <ul style="list-style-type: none"> <li>Fire-fighting system;</li> <li>Safety and Security system; and</li> <li>HVAC.</li> </ul> </li> </ul>

- Providing, replacement or upgrading of any of the Basic Services:
  - Water Supply system;
  - Sanitation facilities;
  - Power supply; and
  - ICT and Telecommunications.
- Demolition of dilapidated, unsafe and unused structures.
- Providing, replacing or upgrading any of the outdoor amenities:
  - Sport fields;
  - Play-ground together with associated equipment;
  - Pavement in assembly area, walkways, driveways, parking lots, etc.;
  - Signage, Name Boards and Flagpoles;
  - Stormwater drainage system;
  - Landscapes; and
  - Gardens.
- Providing, replacement or upgrading:
  - Solid Waste Temporary Storage Facilities; and
  - Condemnation Area.

#### **12.4.2 General Procedure for Renewals**

- (a) Renewals are by their nature classified as CIW and should be carried out by qualified Service Providers following the normal tendering processes.
- (b) Endeavours must be made to identify opportunities for SMMEs where at least 30% of the value of work should be assigned to them.
- (c) Renewals should be managed at Provincial level by the Provincial Infrastructure Unit.
- (d) All the effort must be made to minimise disturbance of the normal operations of the facility. Phased construction approach must be considered and temporary facilities should be made available for decanting the facility users while work is being carried out on the given functional spaces.
- (e) Occupational Health and Safety requirements must always be given a priority to safeguard the safety and health of the facility users and the workers.

#### **12.4.3 Identification of Need for Renewals**

- (a) The identification of a need for carrying out Renewals on a facility could be informed by the outcomes of the Comprehensive Baseline Condition Assessments and scheduled by the PED based on their priority list.
- (b) The FMC together with the Facility Management may also make a request to the PED for Renewals.

- (c) The Provincial Chief Director: Infrastructure together with the appointed Implementing Agents (if any), would be responsible for ensuring that all the planning processes for the Renewals are carried out. This should be done at least one (1) year in advance to enable the construction activities to commence once the budget has been confirmed at the beginning of the following financial year.
- (d) The process of sourcing the Service Providers to carry out the Renewals should follow the normal tendering processes.
- (e) The extent of the problem might not always be known at the time of soliciting services of a contractor until work has commenced on site. Where a need for scope change has been identified it must be communicated formally and approved by the PED.
- (f) The information on the work carried out as part of Renewals should be loaded on the centralised Education Facilities Information Management System (EFIMS), where this system exists.

## 12.5 Upgrades and Additions

- (a) Upgrades and Additions (U&A) is the process of upgrading the facility in its totality and increasing its capacity. This includes all its components: physical infrastructure, building systems, Furniture, Fittings and Equipment (FFE), and outdoor amenities to improve its aesthetic outlook, increase capacity, Indoor Environmental Quality Standards, increase its value, and to bring all its components to their full functionality.
- (b) U&A involves major repairs, major replacements, and improvements, reconfiguration of the existing functional spaces and adding more buildings and / or building components and systems to alter and/or to increase the capacity of the facility.
- (c) The U&A works might include demolishing some of the structures and replacing them, especially if they were built of inappropriate materials or if they had major structural defects or negating functional relationships, especially in addressing acoustic problems and/or energy efficiency.
- (d) The process of carrying out U&A would be similar to Renewals' as outlined under Section 12.4 above.

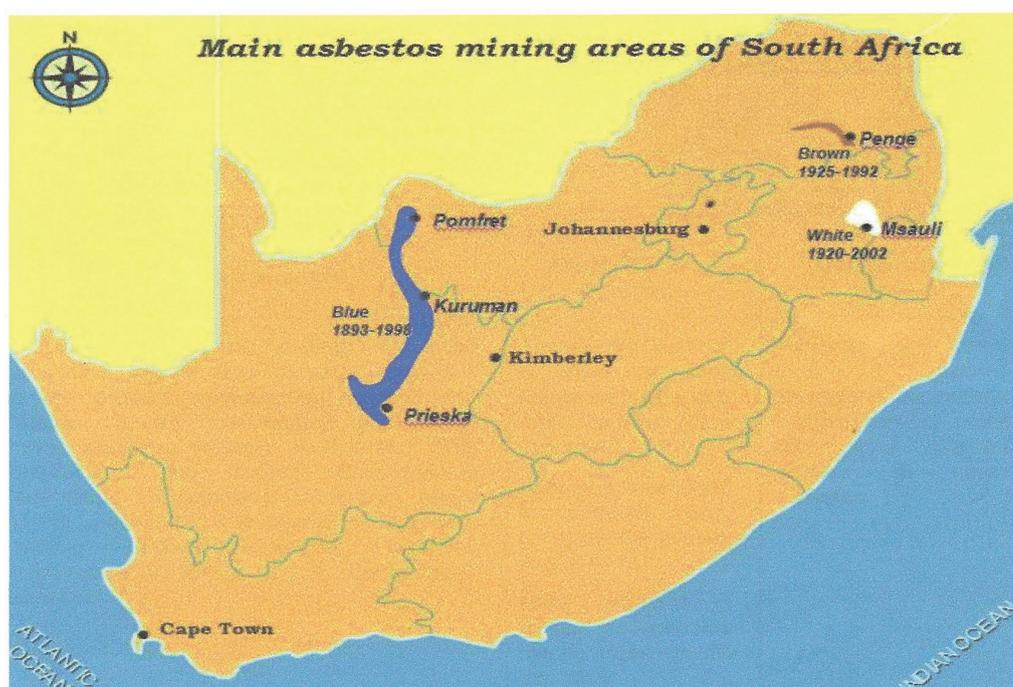
## 12.6 Total Replacement

- (a) Total Replacement entails the process of demolishing the existing facility and re-building it either on the same site, adjacent site or new site if the facility was not located on an ideal or appropriate site.
- (b) The need for undertaking Total Replacement of a facility would be considered if the facility was built of inappropriate materials as confirmed by the outcomes of the Comprehensive Baseline Condition Assessments or if the cost of Renewals is estimated to be about 2/3 or more of the replacement costs.
- (c) The process of carrying out Total Replacements would be similar to Renewals' as outlined under Section 12.4 above.

## 13. MANAGEMENT AND MAINTENANCE OF ASBESTOS-BUILT STRUCTURES

### 13.1 General Considerations

- (a) Following the legacy of the past and limited knowledge of the negative effects of asbestos dust/fibres on occupational health, there are a number of education facilities that are built of asbestos or asbestos containing materials (ACMs), either partially or in full.
- (b) Some Education Facilities are built on the Asbestos Belt following the human settlements that were established in those areas. The areas identified as the Asbestos Belt are reflected on the map in **Figure 3** below.



**Figure 3:** The Asbestos Belts in South Africa (Blue = Crocidolite, Brown = Amosite, White = Chrysotile) (Courtesy of Asbestos Relief Trust and Kgalagadi Relief Trust, 2009).

- (c) (Asbestos Relief Trust and Kgalagadi Relief Trust, 2009): Asbestos was called the “magic mineral” or “magic fibre” because of its properties. These include resistance to heat, acid, chemicals and mechanical forces, the ability to be woven and spun, and its ability to reinforce cement and plastic. Therefore Asbestos had over 3000 uses. The typical uses and facility components where asbestos or asbestos containing materials (ACMs) may be found in Education Facilities include:
  - (i) Asbestos Cement (prefabricated wall sections, corrugated roof sheets, gutters, pipes, garden furniture, garden pots, tiles);
  - (ii) Asbestos Insulating Board (ceiling boards, panel boards);

- (iii) Thermal Insulation (ceiling insulation, ovens, toasters, around boilers, steam pipes, air conditioning ducts);
  - (iv) Floor covering (PVC floor tiles, Thermoplastic vinyl-asbestos tiles);
  - (v) Joint compounds and adhesives; and
  - (vi) Heaters.
- (d) The Department considers it essential and critical to properly manage asbestos in Education Facilities for occupational health and safety of all the members of staff, learners and its visitors and should therefore be a high priority to all those involved on the GU&M activities.
- (e) When ACMs are damaged or disturbed, asbestos fibres may be released into the air, which, if breathed in, can cause serious, and often fatal, diseases. Asbestos affects the lungs most of all. Following exposure to asbestos, a person may develop one of the following four fatal lung diseases, which are reported to have no cure, irreversible and therefore untreatable:
- (i) **Asbestosis:** fibres penetrating deep into the lungs causing scarring of the soft tissue, which restricts breathing, leading to decreased lung volume and increased resistance in the airways.
  - (ii) **Asbestos-related Pleural Thickening:** Fibres causing scarring of the outer lining of the lungs.
  - (iii) **Asbestos-related Lung Cancer (bronchial carcinoma):** a malignant tumour of the lungs' air passages. The tumour grows through surrounding tissue, invading and often obstructing air passages.
  - (iv) **Mesothelioma:** a cancer of the cells that make up the lining around the outside of the lungs and inside of the ribs (pleura) or around the abdominal organs (peritoneum). By the time it is diagnosed it is almost always fatal.
- (f) The *Norms and Standards for Education Facilities (NSEF)* identifies asbestos as one of the building materials that are considered as being inappropriate, where structures built of such materials need to be eradicated, with facilities built entirely of such materials to be prioritised. Further, it discourages any future construction of education facilities with asbestos material.
- (g) The ability to respond to a need to eradicate asbestos-built structures (ABSs) per paragraph (f) above is subject to availability of resources, especially financial resources, and co-operation of other government agencies and entities responsible for infrastructure in general. Therefore this implies that some of the ABSs would still continue being utilised until financial resources are available to address them, given other infrastructure interventions that need to be considered such as responding to emergency natural disasters, chronic over-crowding of classrooms, and GU&M interventions.
- (h) Provided that ABSs and ACMs remain undisturbed and/or undamaged it is safer to manage them in their original position or state than removing them because the latter greatly increases the potential risk of generating asbestos dust or fibres.
- (i) This Section therefore provides guidelines on how to look after and maintain ABSs, ACMs and facilities on the asbestos belt.
- (j) The provisions of the Asbestos Regulations, 2001 shall be applicable.

## 13.2 Management of Asbestos-built Structures and Education Facilities on the Asbestos Belt

### 13.2.1 Asbestos Potential Exposure Risk Assessment

- (a) All the Education Facilities with ABSs and/or ACMs, and those located on the Asbestos Belt should be identified as part of the Comprehensive Baseline Condition Assessment of Education Facilities (CB-EFCA) or any other assessment programme and be recorded on the National Education Portfolio Information (NEPI).
- (b) The Asbestos Potential Exposure Risk Assessment should be:
  - (i) Carried out on all the Education Facilities identified in paragraph (a) above;
  - (ii) Carried out by an experienced, competent and accredited Service Provider specialising in asbestos;
  - (iii) Should be facilitated by the Provincial Chief Director: Infrastructure for all the identified Education Facilities in his/her Province;
  - (iv) Be carried out per the Asbestos Potential Exposure Risk Assessment that is included as **Annexure C** and summarised in **Table 7(a)** below;
  - (v) Comprehensive and should at all times cover the following aspects:
    - (1) Asbestos Occupational Exposure Limit (OEL);
    - (2) Occupational Exposure Assessment; and
    - (3) Material Assessment.
- (c) The outcomes of the Potential Exposure Risk Assessment should:
  - (i) Be categorised into five levels of risk as summarised in **Table 7(b)** below;
  - (ii) Be included as part of the NEPI; and
  - (iii) Be made available to each Facility Manager.

**Table 7(a): Aspects to be included in the Asbestos Potential Exposure Risk Assessment.**

Aspect Being Assessed	Sub-Aspect	Maximum Scores
Asbestos OEL Exceeded?	None	Not Scored but indicate as either <b>Yes</b> or <b>No</b>
Occupational Exposure Assessment / Human Risk Factors	Normal Occupant Activity	3
	Likelihood of Disturbance	Averaged, 3
	Human Exposure Potential	Averaged, 3
	Maintenance Activity	Averaged, 3
	<b>Total, Human Risk Score</b>	
Material Assessment	Type of Asbestos	3
	Product Type	3
	Surface Treatment	3
	Extent of Damage or Deterioration	3
	<b>Total, Human Risk Score</b>	
<b>OVERALL RISK SCORE</b>		

**Table 7(b): Outcomes and risk levels associated with Asbestos Potential Exposure Risk Assessment.**

Risk Level	Risk Score	General Treatment
<b>Extremely High Risk</b>	<ul style="list-style-type: none"> <li>OEL for Asbestos exceeds 0.2 fibres per millilitre of air averaged over a continuous period of four hours (0.2 fibres/ml), as set out in the Asbestos Regulations.</li> <li><b>Please Note</b>, for Education Facilities this should be carried out during the normal operating hours of these facilities.</li> </ul>	Regulation shall apply but with no provisions for protective gear as these cannot be used in the Education Facilities due to the nature of activities carried out.
<b>High Risk</b>	18+	Immediate Action
<b>Medium Risk</b>	13-17	Near Term Action
<b>Low Risk</b>	9-12	Regular Inspection
<b>Very Low Risk</b>	8 or below	Annual Inspection

- (d) Based on the outcomes of the Risk and Exposure Assessment:
- (i) Where Asbestos OEL has been exceeded, (Extremely High Risk) the provisions of Section 4 of the Asbestos Regulations shall apply. In event of this being the case the Department should not require or permit any person to work or educational activities to take place in an environment in which learners, teachers, officials, admin, support staff and its visitors would be exposed to asbestos in excess of the prescribed OEL for asbestos.
  - (ii) In event of all the ABSs in the facility been classified as High Risk, i.e. the facility in its entirety, such facilities should be prioritised for replacement of all the ABSs and ACMs but continue to be used subject to paragraphs (e) and (f) below. These should be subjected to more intensive maintenance measures, addressing immediately ACMs that are posing high risk such as exposed asbestos fibres.
  - (iii) Medium Risk to Low Risk should be subjected to regular Preventative Maintenance measures and monitored by Works Inspectors who are stationed at the District Offices in collaboration with the School Governing Bodies, i.e. in case of school facilities.

- (iv) ACMs with Very Low Risk rating should be subjected to the normal GU&M interventions. ABSs with very low risk rating should be ranked using the Standard Prioritisation Matrix and dealt with as part of other Education Facilities.
- (e) The Asbestos Accredited Service Provider carrying out the Asbestos Potential Exposure Risk Assessment should always indicate the proposed treatments to be applied to an ACM or ABS especially when it is rated as High Risk and Medium Risk.
- (f) The treatments proposed by the Service Provider in paragraph (e) above should inform the Asbestos Management Plan (AMP) to be compiled by the Service Provider for approval by the Provincial Chief Director: Infrastructure. The implementation of the AMP should be facilitated by the Provincial Maintenance Director and monitored by the Works Inspectors together with the School Governing Body (in case of school facilities).

### **13.2.2 Management of ABSs and ACMs**

- (a) The provisions of the AMPs should be adhered to in managing the ABSs and ACMs as part of GU&M activities.
- (b) No remedial work should be carried out on any ABS or ACM before a written Asbestos Work Plan (AWP) has been produced by the Asbestos Accredited Contractor appointed to carry out the remedial work and the necessary precautionary measures have been taken.
- (c) The AWP should be approved by the Asbestos Inspection Authority as contemplated in Section 21 of the Asbestos Regulations, before any remedial works commence on site.
- (d) Any remedial work to be carried on an ABS or ACM should under no circumstances be carried out during the operating hours of an Education Facility or within three (3) hours of starting of normal activities in an Education Facility.
- (e) In case of an emergency such as accidental breakage of an ACM giving rise to asbestos dust and/or exposing asbestos fibres, the area should be evacuated with immediate effect and the arrangements should be made either by the Provincial Chief Director: Infrastructure or by the Provincial Maintenance Director, whoever is available, following emergency procedures, for an Accredited Service Provider to assess the Exposure Risk and to propose remedial measures.
- (f) Any remedial work on an ABS or ACM should only be managed by the Provincial Infrastructure Unit and its implementation monitored by Works Inspectors who are located at the District.

### **13.2.3 Air Monitoring, Medical Surveillance and General Monitoring**

- (a) Air monitoring should be carried out:
  - (i) On all the Education Facilities located on and in the vicinity of an Asbestos Belt;
  - (ii) Where any of the four walls of functional space that is occupied on a daily basis is built of an ACM;
  - (iii) When any demolition work of an ABSs is carried out or removal of ACMs; or
  - (iv) As may be contemplated in the Asbestos Regulations.
- (b) The air-monitoring in paragraph (a)(ii) should focus on the emitted fumes.

- (c) Medical Surveillance should be carried out on:
  - (i) All the regular users of Education Facilities where the Asbestos OEL has been exceeded or within 75% of the OEL; and
  - (ii) All regular users of prefabricated structures built of ACMs.
- (d) The Works Inspectors together with the School Governing Body, i.e. in case of schools, would be responsible for regular monitoring of the facilities where ABSs and ACMs are found, especially those that have High to Medium Risk rating to ascertain that:
  - (i) The GU&M activities were carried out as required;
  - (ii) Any applicable Asbestos Management Plan (AMP) is implemented; and
  - (iii) The AWP is followed, where construction would be carried out.

### 13.2.4 Demolition Work on ABS or Removal of ACMs

- (a) Any proposed demolition of ABSs, removal of ACMs or Renewal (Refurbishment, Renovation, Rehabilitation, Retrofitting) of ABSs or ACMs in an Education Facility should only be carried out by an Accredited Asbestos Contractor.
- (b) The work referred to in paragraph (a) above should take place only after the AWP has been submitted by an Accredited Asbestos Contractor and approved by the Asbestos Inspection Authority as contemplated on Section 21 of the Asbestos Regulations.
- (c) The AWP referred to in paragraph (b) above should, as a minimum, include:
  - (i) The physical location of the Education Facility where work would be carried out;
  - (ii) The nature of the problem on the ABS and/or ACM that has given rise to a need for interventions;
  - (iii) The nature and scope of work to be carried out;
  - (iv) The construction methods to be applied and equipment to be used;
  - (v) The occupational health and safety measures to be employed to protect:
    - (1) The Contractor's workers;
    - (2) The users of the facility;
    - (3) The general members of public in the vicinity of the facility where work would be carried out; and
    - (4) The environment.
  - (vi) How the asbestos-containing waste material would be handled and disposed of; and
  - (vii) The duration for the site works.
- (d) The Works Inspectors should monitor the work carried out to ensure that it is carried out in line with the AWP and also in compliance with any Conditions of Approval that might have been stipulated by the Asbestos Inspection Authority upon examining the AWP.

### 13.2.5 Awareness, Information Dissemination and Training Interventions

- (a) Adequate information, necessary instructions and requisite training should be provided to all the key stakeholders where ABS and/or ACMs are found per the provisions of Section 5(1) of the Asbestos Regulations.
- (b) The key stakeholders referred to in paragraph (a) above include:
  - (i) The day-to-day education facility users;
  - (ii) Support Staff carrying out GU&M activities;
  - (iii) Service Providers carrying out maintenance activities on other facility components and systems other than on ACMs;
  - (iv) The School Governing Body, in case of schools; and
  - (v) Works Inspectors.
- (c) The Provincial Maintenance Director would be responsible for facilitating all the interventions highlighted in paragraph (a) above, which include, but are not limited to:
  - (i) Solicitation of Asbestos Training Service Provider, where this is required;
  - (i) Securing, packaging and dissemination of required information and instructions; and
  - (i) Training interventions to the relevant key stakeholders.
- (d) The Accredited Service Provider carrying out the Asbestos Potential Exposure Risk Assessment under Section 13.2.1 above should, as part of his/her scope of service, compile and package the information reflected in paragraph (c) above.
- (e) The information, instruction and training should include the following areas:
  - (i) The basic information about asbestos;
  - (ii) The general uses for asbestos;
  - (iii) Occupational health and safety requirements associated with asbestos, including the effects of smoking;
  - (iv) Information on all the ABSs and ACMs found in their facility and their exact locations;
  - (v) The Risk Ratings of the ABSs or ACMs found in their facility and their interpretation;
  - (vi) Management and GU&M of the ABSs and ACMs found in their facility (This should be in sync with the AMP);

- (vii) Emergency procedures in event of an accident related to an ACM;
  - (viii) Asbestos waste handling procedures;
  - (ix) Medical examination requirements, where required;
  - (x) The need for air monitoring, where it would be required; and
  - (xi) Provincial infrastructure plans for the facility.
- (f) Care should be taken to ensure that no unnecessary hype or anxieties are created when sharing the information or conducting the training.

## 14. EXPECTED SERVICE LIVES OF FACILITY COMPONENTS

- (a) How long should a facility component be expected to last before it needs major repairs or replacement, given its normal exposure conditions and regular maintenance? This is the focus of this section.
- (b) Because of natural wear and tear, extent of utilisation, potential abuse and vandalism, and geographic location of the facility, it is necessary to determine the Expected Service Life (ESL) of the components of a facility for planning and budgeting purposes.
- (c) The ESL of a component of a facility or system is the period after which such a component or system might need to be replaced because of deterioration, having been looked after and maintained accordingly. The following would characterise the end of this period:
  - (i) Signs of irreversible deterioration would be visible on the facility component, system or equipment;
  - (ii) The component would be malfunctioning most of the time with several improvisations made to keep it going, not because of misuse, abuse or use beyond design capacity but because of the end of its useful life; or
  - (iii) Catastrophic total failure/collapse is imminent with disastrous consequences.
- (d) The ESL does not reflect the intervals at which such a facility component needs to be inspected or the maintenance cycle, either as part of GUMRR or Preventative Maintenance programme. The latter would be carried out on a more regular basis over the service life of the facility, before it reaches the end of its ESL.
- (e) The ESL indicates the period at which Major Replacements may be required as part of Corrective Maintenance, Renewals or Upgrade and Additions.
- (f) The initial Capital Expenditure (CAPEX) and Operating Expenditure (OPEX) associated with Facilities Management over the lifecycle of a facility provide an indication of the lifecycle costs (LCC) of a facility.
- (g) Only discounted figures should be used to determine the capital required at the end of ESL and for determining the LCC.
- (h) Different components of a facility would have different ESLs and this will be affected by the factors highlighted under Section 8.1.
- (i) Care should be taken in determining the ESL's of facility components as they may differ from one climatic region to the next.
- (j) Generally, the ESLs for most facility components found in school facilities would be less than those found in other social or business facilities because of over-use, abuse and potential vandalism by the learners and members of the community in certain situations.
- (k) The ESL should be used for planning and budgeting purposes and this should be ascertained, per paragraph (l) below, by the District Maintenance Manager (DMM) at least a year in advance and provide the outcomes to the Provincial Maintenance Director (PMD) for planning purposes.
- (l) When the facility component has reached its ESL per these *GU&M Guidelines*, it does not imply automatic replacement of such components. Towards the end of the ESL of a component or a system, such component or system has to be inspected by the DMM, assisted by the Works Inspectors, to assess if indeed it needs to be repaired or replaced. It is only after such an assessment has been carried out that a decision on its replacement or otherwise could be made and confirmed with the PMD.

- (m) The existing education facility components would be at different stages towards reaching their ESLs, based on the date on which they were commissioned, any replacements and any upgrades that might have been made over the intervening period.
- (n) The PMD should keep the record of all the ESLs of the existing facility components for each facility.
- (o) The design life expectancy of an education facility will be taken as **thirty (30)** years. (This is construed as a reasonable Functional Life of a facility.) After 30 years, with regular maintenance and repairs, the building fabric might still be structurally sound and intact (therefore having a longer Physical Life) but over this period there might have been technological advancements, changes in the legislation, needs for service offerings might have changed, new space requirements, the functional requirements might have advanced so much that retrofitting might be too costly and cumbersome, therefore requiring either Renewals, Upgrade and Additions or Total Replacement. The PMD should carry out a detailed assessment to decide on an appropriate route to follow based on an objective and auditable assessment. This assessment should include both the assessment of physical condition and the business needs.
- (p) For the purpose of these *Guidelines*, the ESLs of various components of an education facility are reflected as **Annexure A**.

## 15. EDUCATION SERVICES ON PRIVATE PROPERTIES

### 15.1 Leased or Rented Education Facilities

- (a) Section 14 of the South African Schools Act (SASA) acknowledges and allows for instances where public schools might be provided on private properties. Equally, there would be instances where District and Circuit Offices might be housed in facilities that are owned by third parties – leased properties.
- (b) Where this occurs agreements have to be entered into between:
  - (i) The MEC of the Provincial Education Department (PED) and the owner of the private property in the case of school facilities; and
  - (ii) The MEC of Provincial Public Works and the owner of the private property in the case of District and Circuit Offices.
- (c) In the case of schools, PEDs have a mandate of providing conducive education facilities. Equally, following Section 8 of the Occupational Health and Safety Amendment Act (No. 181 of 1993) the Department, as an employer of teachers, together with Circuit and District officials, has an obligation of ensuring that the workplace is safe, conducive and free of danger.
- (d) Section 14(2)(e) of SASA states that the agreements to be entered into “*must provide for maintenance and improvement of the school buildings and the property on which the school stands and the supply of necessary services.*”
- (e) In this regard, by virtue of its Constitutional mandate, the PEDs have a default obligation of undertaking maintenance of the facilities used for conducting its business. This obligation could be ceded to the third parties via the Lease Agreements to be entered into.
- (f) The Agreement therefore has to specify categorically the obligations of each party with respect to General Upkeep and Maintenance (GU&M) interventions and any necessary Renewals, Upgrades and Additions, and how these would be funded.
- (g) The Agreement should also stipulate the remedy to be enjoyed by any of the parties in event of the other party defaulting, failing to honour its obligations with respect to GU&M activities.
- (h) The PEDs are required to submit copies of the Section 14 Agreements to the DBE who would ensure that all the relevant clauses are included in the Agreements and that the obligations are carried out by the respective parties.

### 15.2 Independent Schools

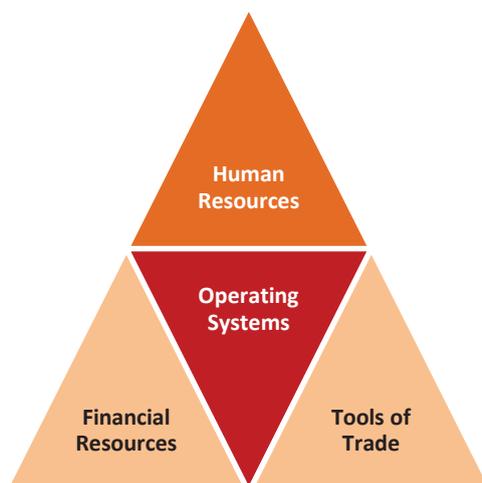
- (a) Section 45 of SASA allows for the establishment and maintenance of Independent Schools. These are “private” schools established on private properties.
- (b) Section 46 of SASA states that “*no person may establish or maintain an independent school unless it is registered by the Head of Provincial Department of Education*”.
- (c) In registering such schools the applicant would, among other requirements, be required to demonstrate how the GU&M activities would be managed in the planned facility.

- (d) Section 46(3)(a) of SASA, requires that the standards to be maintained by such schools should not be inferior to the standards in comparable public schools. These standards would include the:
  - (i) Quality of school infrastructure per the provisions of the *Norms and Standards for Education Facilities*; and
  - (ii) Need for undertaking General Upkeep and Maintenance of Education Facilities per the provisions of these *GU&M Guidelines*.
- (e) Where an Independent School is a Section 21 organisation (non-profit organisation such as religious organisations), the Department may provide additional funds to such schools to assist them with GU&M activities.
- (f) Where the funds contemplated in paragraph (e) above have been made available to an Independent School, an Annual Report on the GU&M activities, including an account on the utilisation of such funds, should be made available by the management of such schools to the Provincial Maintenance Director (PMD) on the dates that would be determined by the PMD.
- (g) Where an account on the utilisation of the transferred funds contemplated in paragraph (f) above could not be provided, an Independent School should be caused to reimburse such allocated funds to the PED.

## 16. RESOURCE REQUIREMENTS

*“...it is no good giving a machine without a man to operate it!” UNESCO*

- (a) Without the requisite resources it will not be possible to carry out the necessary General Upkeep and Maintenance (GU&M) activities.
- (b) The critical resources that will be required to carry out the necessary GU&M interventions are presented in the triad in **Figure 4** below:



**Figure 4:** *Critical resources required to carry out GU&M activities.*

- (c) The critical consideration is on how these resources would be made available taking into consideration all the requirements reflected in the value chain depicted in **Figure 5** below:

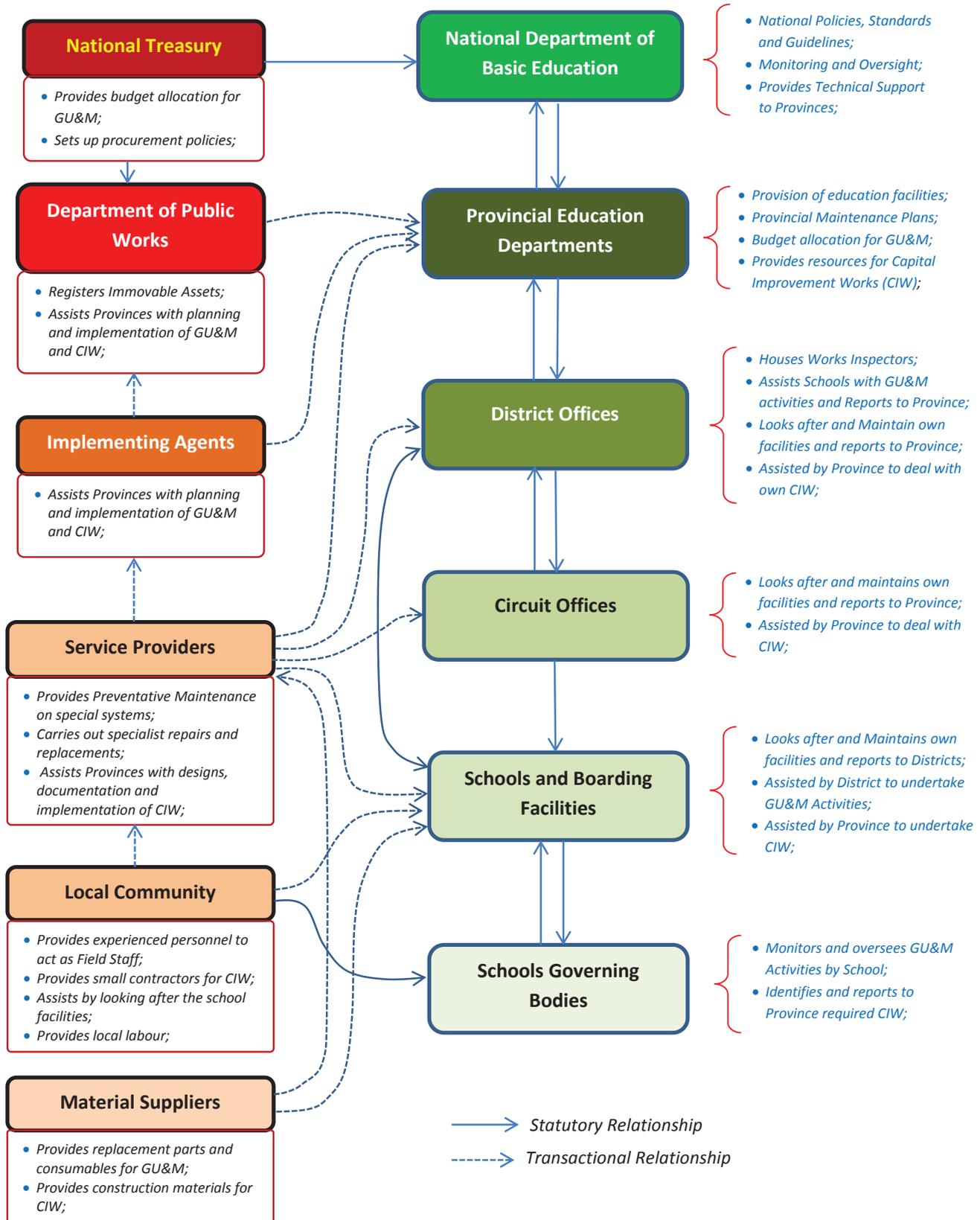


Figure 5: Value chain for General Upkeep and Maintenance in the basic education sector.

## 16.1 Human Resource Requirements

### 16.1.1 General Considerations

- (a) In order to adequately address the Human Resource requirements there needs to be:
  - (i) Personnel that has been identified and formally appointed or nominated to undertake the specified key functions;
  - (ii) Sufficient number of human resources based on the requirements on the ground;
  - (iii) Skilled, knowledgeable, experienced and capable human resources for the identified roles; and
  - (iv) Human resources that are to be available at all times to perform their duties.
- (b) The number of people required to undertake GU&M activities should be based on:
  - (i) The actual functional spaces to be cleaned by the hired/appointed Cleaners. This would be the net floor area or cleanable square meterage of the facility;
  - (ii) The combined gross area of the courtyards, grounds, landscapes, driveways, walkways, open areas, drop off zones, playgrounds and sport fields in case of the Groundsmen;
  - (iii) Number of functional spaces to be looked after in case of Caretakers;
  - (iv) Additional specialist areas such as science laboratories, technical workshops and indoor sport facilities in case of secondary schools; and
  - (v) Number and geographic location (proximity and terrain) of education facilities (schools, boarding facilities, etc.) to be inspected in case of Works Inspectors.

### 16.1.2 Management Personnel

- (a) GU&M activities are not once off interventions but ongoing operations that require constant monitoring and management as long as education facilities continue to exist and as long as the education sector has facilities to look after.
- (b) Each facility should have Senior Management Personnel, other than the Facility Manager, who would be responsible for managing the day-to-day GU&M activities and for reporting purposes.
- (c) The Facility Managers would still remain accountable for the GU&M operations for the education facilities they are responsible for. They should identify and appoint or nominate one of the senior members of staff to act as a Facility Maintenance Co-ordinator (FMC). This would include the FMC deputies depending upon the size of the facility.
- (d) Senior Management Personnel at National, Provincial and District Offices responsible for GU&M activities should have the appropriate academic qualifications in the built environment and sufficient experience.
- (e) Well-qualified and experienced incumbents with qualifications in the Building Science would be ideal candidates for the Senior Management posts at Provincial and District Levels and, if not available, an Architect would be preferred to a Civil Engineer.

- (f) In event of this function been outsourced, any Service Provider who provides Implementing Agency services should also have professionals in the built environment.

### **16.1.3 Field Staff**

- (a) Field Staff for GU&M refers to a group of people who would be doing the physical work on the ground on a day-to-day basis. The Field Staff includes:
  - (i) Service Providers' Representatives carrying out Preventative Maintenance work;
  - (ii) Works Inspectors housed at the District Offices;
  - (iii) General Cleaners;
  - (iv) Caretakers;
  - (v) Groundsmen; and
  - (vi) Assistants in any of the areas covered above.
- (b) Field Staff under paragraphs (a)(ii) to (vi) above must have basic qualifications for communicating, reporting, and interpreting verbal and written instructions. They must also have fair experience and capability (physical and intellectual) of undertaking the work they would be appointed to do. (This does not call for any form of discrimination.)
- (c) One of the most important qualities of Field Staff is honesty and reliability. There are various opportunities for peculation and theft on site therefore rigorous reference checks would be critical. (Staff reporting falsely on what needs to be fixed; Staff reporting falsely on what has been fixed; Staff stealing facility users' belongings.)
- (d) Each Field Staff must have a clear Job Description that, as a minimum, should cover:
  - (i) Duties and Responsibilities;
  - (ii) Working Conditions;
  - (iii) Physical Strength Requirements;
  - (iv) Educational Requirements;
  - (v) Credentials and Licensure (where necessary);
  - (vi) Typical equipment and tools to be used;
  - (vii) Channels of Authority; and
  - (viii) Performance Evaluation Mechanism.
- (e) Sufficient number of Field Staff must be provided if satisfactory results were to be expected. As a general guide the following ratios could be considered as minima:
  - (i) 2 x General Cleaners per school up to 650m<sup>2</sup> of net floor space to be cleaned then one additional General Cleaner after every 650m<sup>2</sup> (This is a stepped increment, assuming a 4-hour shift.) Generally micro schools should be provided with 1 General Cleaner.

- (ii) 1 x Caretaker per facility;
  - (iii) Caretaker assistants to be provided for every additional 16 functional spaces;
  - (iv) 1 x Groundsman per facility;
  - (v) Groundsman Assistants to be provided for every 2 000m<sup>2</sup> of the grounds; and
  - (vi) 1 x Works Inspector per 100 education facilities to be looked after by him/her.
- (f) **Table 8** below provides the list of required resources at various levels of the value chain:

**Table 8: Human Resource Requirements for undertaking General Upkeep and Maintenance activities on the education facilities in the basic education sector.**

Entity in the Value Chain	Human Resource Requirements	Number	Qualifications
<b>National Department of Basic Education</b>	National Maintenance Director (NMD)	1	Degree or Btech in the Built Environment
	Deputy Director	1	Btech in the Built Environment
	Administration Personnel	1	Admin Qualifications
<b>Provincial Education Departments</b>	Provincial Maintenance Director (PMD)	1	Qualifications in the Built Environment
	Assistant Directors	2	Qualifications in the Built Environment
	Administration Personnel	1	Admin Qualifications
<b>District Offices</b>	District Maintenance Manager (DMM)	1	Qualifications in the Built Environment
	Works Inspectors <sup>1</sup>	1 per 100 education facilities	B-tech in the Built Environment
	Administration Personnel	1	Admin Qualifications
	Handyman/Groundsman	1 per facility	Basic qualifications
	General Cleaners	1 per 650m <sup>2</sup>	Basic qualifications
<b>Circuit Offices</b>	Circuit Maintenance Manager (CMM)	1	B-tech in the Built Environment
	Handyman/Groundsman	1	Basic qualifications
	General Cleaners	1 per 650m <sup>2</sup>	Basic qualifications

Entity in the Value Chain	Human Resource Requirements	Number	Qualifications
<b>Schools / Boarding Facilities</b>	School Maintenance Co-ordinator (SMC)	1 per school	Teaching + Basic Course in Facilities Management <sup>2</sup>
	Deputy School Maintenance Managers	1 per 500 learners	Teaching
	Administration Personnel	1	Admin Qualifications
	Caretaker	1 per school	Basic qualifications
	Caretaker Assistants	Based on the size of the facility	Basic qualifications
	Groundsman	1 per school	Basic qualifications
	Groundsman Assistants	Based on size of school	Basic qualifications
	General Cleaners	2 per school up to 650m <sup>2</sup> and 1 x additional cleaner after every 650m <sup>2</sup>	Basic qualifications
<b>Implementing Agents</b>	Programme Manager Maintenance	1	Degree or B-Tech in the Built Environment
	Project Managers Maintenance	Per size of portfolio	Degree or B-Tech in the Built Environment
<b>Service Provider to undertake Preventative Maintenance</b>	Account Manager	1	Not Specified
	Call-out Technician	1	Certified in the specific field of operations

1. Appointed and provided for by the Province and located at Districts.
2. To be acquired after the appointment or nomination.

#### 16.1.4 Administration Staff

- (a) The Facility Manager should identify one of the members of the Admin Staff to provide dedicated support functions to the Maintenance Team.
- (b) The nature of services to be provided by the Admin Staff would include:
  - (i) Provision of secretarial work on the GU&M activities;
  - (ii) Ordering and purchasing of required goods and consumables for the GU&M activities; and
  - (iii) Uploading of standard and basic information on the Computerised Maintenance Management System (where this system exists).

#### 16.1.5 Training

- (a) Need for training interventions in the GU&M space is multi-faceted and should be considered at all relevant levels. Such interventions could either be:
  - (i) Formal or informal;
  - (ii) Outsourced or insourced;
  - (iii) Conducted onsite or offsite;

- (iv) Conducted over varying durations; and
  - (v) May either require only signature of the Attendance Register, obtaining Certificate of Attendance, Professional Certificate, or Formal Qualifications.
- (b) Areas where training interventions are required include the following:
- (i) **New facility and/or new equipment** – When a new facility is being commissioned or when a new facility system or equipment has been acquired. The key users at all levels should be trained on how to operate it. This type of training must be provided by the Service Provider who supplied the facility or equipment as part of the commissioning costs. An arrangement should be made with Facility Management on the appropriate times for conducting such training. This training should include instructions on how to use, look after, clean and maintain such facility components or equipment.
  - (ii) **New GU&M Appointments** – When a new member of staff is introduced into a GU&M job. This includes the Senior Management Staff, Admin Staff and Field Staff. To a large extent the focus would be on job orientation and run-through training on how to operate ICT Systems, tools and equipment to be used especially by the Field Staff. (Technologies change over time, and invariably new appointees tend to claim full knowledge of all the operations, based on prior familiarity, as a means of “saving” their new jobs and as an attempt to “increase” their worth!)
  - (iii) **New requirements and new processes** – When new processes and/or requirements have been introduced, e.g. Reporting Templates, Occupational Health and Safety Standards, new ICT Systems introduced or upgraded. The GU&M Staff has to be familiar with reporting requirements – how to report certain items, fill certain forms or templates to ensure comprehension and consistency in reporting.
  - (iv) **Continued Professional Development** – When a person requires to upgrade his/her skills or as a requirement to retain professional registration with a professional body.
  - (v) **Feedback Sessions** – Where open and structured discussions are held to share experiences on the operations and to table suggestions on process/system improvements.
  - (vi) **Occupational Health and Safety, and First Aid** - Where training on the occupational health and safety requirements would be conducted to all the Field Staff on an annual basis – as a refresher course.
  - (vii) **Asbestos training** per the provisions of Section 13.2.5.
- (c) Training interventions are intended to upskill the identified Human Resources. This presupposes that people to be appointed would have basic skills to undertake the jobs they would be appointed for.
- (d) Although the training interventions could be identified at any level, the District Maintenance Manager (DMM) should consolidate all the required training interventions in his/her District and communicate those to the Provincial Maintenance Director (PMD) to facilitate such training and to arrange funding based on the available budget for such.
- (e) The DMM would be required to monitor and ensure that the identified training interventions take place and progress in this regard should be reported to the PMD as part of the Annual GU&M Report.

## 16.2 GU&M Tools of Trade and Dedicated Storage Areas

### 16.2.1 General Considerations

- (a) In order for the identified Human Resources to do their work effectively, they need to be provided with relevant, useful and functional Tools of Trade timeously.
- (b) It is the responsibility of Facility Managers to ensure that the staff working on GU&M has the requisite Tools of Trade which include the:
  - (i) Work station;
  - (ii) Equipment;
  - (iii) Tools;
  - (iv) Spare/Replacement Parts;
  - (v) Consumables for GU&M;
  - (vi) Access to vehicles in case of Works Inspectors; and
  - (vii) Appropriate safety and protective clothing for the Field Staff.
- (c) The Facility Maintenance Co-Ordinator (FMC) should create an Asset Register/Inventory of all the Tools of Trade provided to the GU&M Staff.
- (d) It would be the full responsibility of the GU&M Staff to look after the Tools of Trade provided to them, and would remain accountable for them.
- (e) The consequences for carelessness and improper handling of Tools of Trade should be covered in the Employment Agreement to be entered into with each GU&M member of staff.
- (f) The Service Provider carrying out the Preventative Maintenance shall be responsible for providing its own Tools of Trade required for his/her area of responsibility.

### 16.2.2 Identified Basic Tools of Trade and Amenities for GU&M

- (a) The Tools of Trade to be provided should be identified across all the levels within the value chain.
- (b) **Table 9** below provides typical Tools of Trade to be made available at various levels of operations.

**Table 9:** *Typical Tools of Trade that are required to carry out GU&M activities in the basic education sector.*

Area of Focus	Typical Required Tool of Trade
National Department of Basic Education	<ul style="list-style-type: none"> <li>• Work Stations (with all the amenities);</li> <li>• Computer Software (for data repository, reporting, and planning);</li> </ul>
Provincial Education Department	<ul style="list-style-type: none"> <li>• Work Stations (with all the amenities);</li> <li>• Computer Software;</li> </ul>

Area of Focus	Typical Required Tool of Trade
District Office	<ul style="list-style-type: none"> <li>• Work Stations (with all the amenities and separate storage spaces);</li> <li>• Computer Software;</li> <li>• Vehicles for use by Works Inspectors;</li> <li>• GU&amp;M Equipment and Tools (for use by GU&amp;M Personnel);</li> <li>• Protective Clothing;</li> <li>• GU&amp;M replacement parts and consumables;</li> <li>• Solid waste management facility; and</li> <li>• Condemnation Area.</li> </ul>
Circuit Office	<ul style="list-style-type: none"> <li>• Work Stations (with all the amenities and separate storage spaces);</li> <li>• Computer Software;</li> <li>• GU&amp;M Equipment and Tools;</li> <li>• Protective Clothing;</li> <li>• GU&amp;M replacement parts and consumables;</li> <li>• Solid waste management facilities; and</li> <li>• Condemnation Area.</li> </ul>
Schools and Learner Boarding Facilities	<ul style="list-style-type: none"> <li>• Work Stations (with all the amenities and separate storage spaces);</li> <li>• Computer Software;</li> <li>• GU&amp;M Equipment and Tools (for use by GU&amp;M Staff);</li> <li>• Safety and Protective Clothing;</li> <li>• GU&amp;M replacement parts and consumables;</li> <li>• Solid waste management facility; and</li> <li>• Condemnation Area.</li> </ul>
Implementing Agent	<ul style="list-style-type: none"> <li>• To provide own Tools of Trade for its personnel.</li> </ul>
Service Provider for Preventative Maintenance	<ul style="list-style-type: none"> <li>• To provide own Tools of Trade for its personnel.</li> </ul>

- (c) Where municipal solid waste collection and disposal services are available, the FMC should make the necessary arrangements with the relevant municipality for the collection and disposal of solid waste.
- (d) The Facility Manager, assisted by the FMC, should follow proper procedures to ensure that obsolete and condemned equipment, tools and furniture are decommissioned, taken off site and disposed of appropriately following the provisions of their approved Asset Disposal Policies.

### 16.2.3 Storage Areas for GU&M Tools of Trade

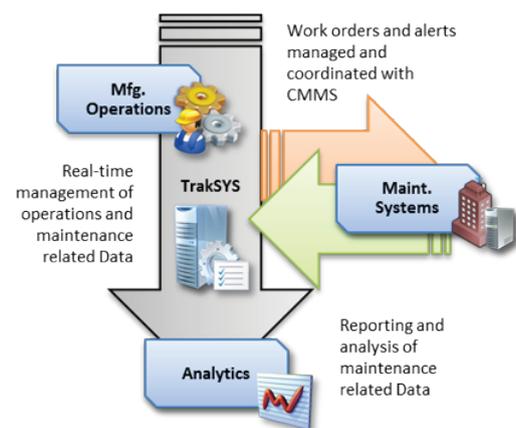
- (a) For the Tools of Trade to be kept safe by the GU&M Staff, dedicated storage spaces must be provided by the Facility Manager.
- (b) Dedicated spaces for GU&M should be provided at the time the facility is designed anew or upgraded. Where this was not the case, plans for providing these dedicated storage spaces must be made by the Facility Manager together with the PMD.
- (c) The storage spaces shall include:
  - (i) Store-rooms for outdoor or grounds tools, equipment, cleaning material, lubricants and other consumables;

- (ii) Storage area for indoor cleaning equipment and consumables;
- (iii) Storage area for Caretaker's tools, lubricants and spare replacement parts; (This could be a lockable cabinet within the same storage area in paragraph (i) above).
- (iv) Resting areas for GU&M Field Staff with lockers;
- (v) Condemnation Area; and
- (vi) Solid waste:
  - (1) Enclosed temporary storage area; and
  - (2) On-site incinerator (where this is permissible).
- (d) It is the responsibility of the Field Staff to keep the storage areas clean, tidy, organised and maintained.

## 16.3 Operating Systems

### 16.3.1 General Considerations

- (a) Operating Systems are essential enablers in the GU&M operations.
- (b) They should be developed and institutionalised by the Facility Managers in order to ensure uniformity, predictability and efficiency in the GU&M operations.
- (c) The primary purpose of the Operating Systems in GU&M is to:
  - (i) Provide clarity on the processes and procedures to be followed, especially to the new members of staff;
  - (ii) Improve efficiency of operations, eliminating double handling of information;
  - (iii) Enable central data capturing and storage of information;
  - (iv) Ensure consistent and uniform reporting on the identified items;
  - (v) Facilitate scheduling of specific activities such as those pertaining to Preventative Maintenance;
  - (vi) Ensure access to reliable and credible information for objective, authentic and reliable reporting;
  - (vii) Enable trend analysis for planning and system improvement; and
  - (viii) Facilitate build-up of institutional memory that will overstay individuals in the system for continued business operations.
- (d) The Operating Systems for the education sector GU&M comprise:
  - (i) GU&M Guidelines, Policies and Plans;
  - (ii) Schedules and Rosters for specified activities;



- (iii) Standard Reporting Templates and Reports; and
  - (iv) ICT System (e.g. CMMS) that is centralised and web-based.
- (e) Each of the Operating Systems has to have a custodian who would be responsible for ensuring that it:
- (i) Has been developed and institutionalised;
  - (ii) Is utilised and correct information provided at the required levels of operation;
  - (iii) Is managed and updated as and when necessary to do so;
  - (iv) Is communicated to all the users; and
  - (v) Training of the users is carried out, where necessary.

### 16.3.2 Specific Operating Systems for GU&M and their Custodians

- (a) **Table 10** below provides typical Operating Systems for the GU&M activities in the basic education sector and their custodians:

**Table 10:** Typical Operating Systems for GU&M activities in the basic education sector and their custodians.

Operating System		Function/ Purpose	Custodian
1	<b>GU&amp;M Guidelines for Education Facilities</b>	<ul style="list-style-type: none"> <li>• Guide the sector on the GU&amp;M requirements.</li> </ul>	<ul style="list-style-type: none"> <li>• Dept of Basic Education (DBE)</li> </ul>
2	<b>Central Computerised Maintenance Management System</b>	<ul style="list-style-type: none"> <li>• Recording, Trend Analysis, Reporting, Data Storage.</li> <li>• Tracks building components, systems and FFE by their age and life cycle for calibration of Economic Service Lives.</li> </ul>	<ul style="list-style-type: none"> <li>• DBE</li> </ul>
3	<b>Centralised Web-based Education Infrastructure Management System</b>	<ul style="list-style-type: none"> <li>• Record of the condition of all the Education Facilities.</li> </ul>	<ul style="list-style-type: none"> <li>• DBE</li> </ul>
4	<b>Registers:</b>		
4.1	Public Immovable Asset Registers	<ul style="list-style-type: none"> <li>• Keep records of all the basic education immovable assets;</li> </ul>	<ul style="list-style-type: none"> <li>• Dept of Public Works</li> </ul>
4.2	GU&M Tools and Equipment Registers	<ul style="list-style-type: none"> <li>• Register of all the tools and equipment to be used for GU&amp;M in each Education Facility;</li> </ul>	<ul style="list-style-type: none"> <li>• Facility Management (District, Circuit, School, Boarding Facility)</li> </ul>
4.3	GU&M Operations Register	<ul style="list-style-type: none"> <li>• Register of all the GU&amp;M Activities, Incidents and Expenditure;</li> </ul>	<ul style="list-style-type: none"> <li>• Facility Mngnt</li> </ul>

Operating System	Function/ Purpose	Custodian
<p>5 <b>Reporting Templates:</b></p> <p>5.1 GU&amp;M Tools and Equipment Registers</p> <p>5.2 GU&amp;M Operations Registers</p> <p>5.3 Facility GU&amp;M Mngnt Plans</p> <p>5.4 Emergency Capital Improvement Works (CIW) Requests</p> <p>5.5 Request for CIW Interventions</p> <p>5.6 Quarterly GU&amp;M Expenditure (School, Circuit, District, Province, Sector)</p> <p>5.7 Annual GU&amp;M Reports (School, Circuit, District, Province, Sector)</p>	<ul style="list-style-type: none"> <li>• Register of all the tools and equipment to be used for GU&amp;M in each Education Facility;</li> <li>• Register of all the GU&amp;M Activities, Incidents and Expenditure;</li> <li>• Plans, schedules and rosters, indicating how the Facility Management will look after and maintain the facility;</li> <li>• Report to Province on natural and man-made catastrophes requiring major CIW;</li> <li>• Request by Facility Mngnt to Province on need for CIW, other than Emergencies;</li> <li>• Quarterly expenditures on all the GU&amp;M activities at various levels;</li> <li>• Summary of the annual GU&amp;M activities, Incidents and Expenditure;</li> </ul>	<ul style="list-style-type: none"> <li>• DBE</li> </ul>
<p>6 <b>Maintenance Plans:</b></p> <p>6.1 Custodian Asset Mngnt Plan</p> <p>6.2 User Asset Mngnt Plans</p> <p>6.3 Provincial Infrastructure Plans</p> <p>6.4 Facility GU&amp;M Plans</p>	<ul style="list-style-type: none"> <li>• How the custodian of the Immovable Assets will manage them;</li> <li>• How the user of the Immovable Assets will manage them;</li> <li>• How each Province plans to roll-out the Capital Improvement Programme over the MTEF given the available budget;</li> <li>• Plans, schedules and rosters, indicating how the Facility Mngnt will look after and maintain the facility;</li> </ul>	<ul style="list-style-type: none"> <li>• Dept of Public Works</li> <li>• Provincial Education Depts (PEDs)</li> <li>• PEDs</li> <li>• Facility Mngnt</li> </ul>

- (b) The users of any of the Operating Systems would be expected to advise the System Custodians of any improvements that might be required for their consideration. None of the Operating Systems are to be modified at operating level.
- (c) The System Custodians must ensure that there is user-support for the systems they are responsible for and that such support is available at all times.
- (d) Any ICT System, such as CMMS, to be put in place for managing GU&M activities should:
  - (i) Enable the data or information to be uploaded at the source;
  - (ii) Enable specific summary reports to be drawn at various levels of the value chain;
  - (iii) Enable the PEDs to carry out the necessary synthesis of the data associated with their facilities; and
  - (iv) To the extent possible, integrate with other ICT systems that are in place, such as the Education Facilities Management System (EFMS), National Education Information Management System (NEIMS), Infrastructure Reporting Model (IRM), and relevant Provincial ICT systems.

## 16.4 Financial Resource Requirements and Budgeting

### 16.4.1 General Principles

- (a) Adequate funding is one of the critical enablers for the realisation of GU&M activities. Without adequate funding it would not be possible to carry out the GU&M activities.
- (b) Section 34 of SASA places the onus on the State to provide funds for public schools from public revenue on an adequate basis in order to ensure the proper exercise of the rights of learners to education and the redress of past inequalities in education provision.
- (c) These funding requirements include:
  - (i) Capital Costs for providing basic infrastructure, equipment, FFE and the requisite systems;
  - (ii) Operating Costs which include:
    - (1) Salaries and wages for teachers and support staff;
    - (2) Consumables, learning and teaching support material (LTSM) and special programmes such as the National School Nutrition Programme (NSNP) and Learner Transport;
  - (iii) Funds for undertaking GU&M activities.
- (d) The critical balance needs to be found to enable Capital Improvement Works (CIW) programmes to be implemented while the existing facilities are looked after and maintained accordingly.
- (e) Section 100A of the *National Norms and Standards for School Funding (2008)* makes a provision for some of the money allocated to schools to be used for “small capital items required by the school as well as normal repairs and maintenance to all the physical infrastructure of the school.”

- (f) The cost accounting and budgeting for GU&M activities must be separated from CIW activities.
- (g) The Department of Public Works and any other Implementing Agent may assist the PED in determining cost estimates for GU&M activities for budgeting purposes.
- (h) Guarantees / Warrantees must be treated as a source of funding and must therefore always be obtained from the Suppliers of capital deliverables.
- (i) The Unit of Costing for GU&M needs to be standardised for ease of budgeting, trend analysis, effective cost management, and cost comparisons across various regions.

#### **16.4.2 Management of Guarantees / Warrantees**

- (a) Any goods provided by Service Providers are expected to be fully functional at all times after they have been commissioned.
- (b) Any Supplier must provide a Guarantee/Warranty that the deliverable will serve the intended purpose and would remain fully functional with no defects over the stated Guarantee Period or Latent Defects Liability Period.
- (c) The Guarantee/Warranty must clearly state what is covered and the Guarantee Period.
- (d) Where the works are carried out as part of the GU&M activities the signed Guarantee must be submitted to Facility Maintenance Co-ordinator (FMC) who shall keep it safe in a locked cabinet and also record it in the GU&M Activities Register.
- (e) If the works are carried out as part of CIW, the Guarantees should be submitted to the Implementing Agent per the provisions of Section 12.3.2(c) above.
- (f) No final payment should be made to any Supplier without a signed Guarantee and the Maintenance Plan been submitted to the FMC.
- (g) When the Computerised Maintenance Management System (CMMS) is in place, the Guarantees/Warrantees should be scanned and uploaded onto this system.
- (h) At the time of submitting Quotations or Bids, the respective Suppliers should be required to:
  - (i) Confirm that they will undertake Preventative Maintenance of the specified facility systems such as the Fire Protection System, Safety and Security System, ICT Equipment, HVAC over the Guarantee Period;
  - (ii) Reflect separately any costs associated with the Preventative Maintenance; and
  - (iii) State their service fees, excluding the replacement parts, for continuing providing Preventative Maintenance post the Guarantee Period, if such services were to be required from them by the Department.
- (i) Any malfunctioning or component failure that occurs within the Guarantee Period, assuming no misuse or abuse, should be repaired and replaced by the Supplier concerned at his/her own costs.
- (j) In the event of a need to fix a malfunctioning component off-site during the Guarantee Period, the Supplier should provide, at his/her cost, a loan component so as not to disadvantage the facility users.

- (k) Post the Guarantee Period the FMC, assisted by the DMM, should decide on whether to continue with the original Supplier to carry out Preventative Maintenance work or to seek quotations from other Suppliers in the same industry.
- (l) If the facility is rented out to members of the community for weekend functions such as funerals, weddings, etc., the hirer should make good the hired space and its environs afterwards including any breakages. Alternatively, the hirer should be made to pay for the cleaning services and/or the costs of repairing any breakages occasioned by its utilisation of the facility over and above the normal hiring costs.

### 16.4.3 Unit of Costing of GU&M Activities

- (a) The Unit of Costing (UoC) for GU&M activities has to be selected carefully. It should be relevant and informed by the functional requirements on the ground. It should take into account the practical needs, different types of education facilities and different sizes of these facilities, much as it should be relatively easy to use for financial accounting and reporting purposes.
- (b) The UoC should bear relevance to what is being maintained as this would enable effective planning, informed and realistic budgeting, monitoring, trend analysis and reporting.
- (c) Typical UoC for GU&M include:
  - (i) **Fixed Percentage** of the total budget allocation. In this case, a total budget is allocated for the facility and then a certain portion (e.g. 25% of the total NNSSF allocations or 20% of the Education Infrastructure Grant) is earmarked for maintenance interventions;
  - (ii) **Per Unit Area** – This takes into account the physical size of the facility to be looked after and maintained;
  - (iii) **Per Unit Volume** – Takes into consideration both the physical area and the height of the walls;
  - (iv) **Per Element** – This focuses on major building elements such as floors, walls, roofs, etc.; and
  - (v) **Per number of Users** – Typically, this looks at the number of users in the facility such as the number of learners in a school.
- (d) Fixed percentage of the budget allocation is the most commonly used UoC because it is the easiest method. However, the serious shortcomings with it are that it is not informed by the physical space that the GU&M is all about and is a function of variables that are not necessarily informed by or associated with GU&M requirements. Therefore, for the purpose of these *GU&M Guidelines*, this method is not considered as most ideal and therefore not recommended.
- (e) For the basic education sector the **combination of both the Per Unit Area and the Per Number of Users methods will be used** because:
  - (i) The “Per Unit Area” method takes into consideration the physical space and the number of functional spaces to be attended to. The information to be provided to account fully for this method includes:
    - (1) The Gross Floor Area (GFA), which is the sum of all the covered or roofed areas in the facility;
    - (2) The Gross Grounds Area (GGA), which includes grounds, landscapes, gardens, assemble areas, courtyards, open spaces, walkways, driveways, parking lots, playgrounds and sport fields;

- (3) Total number of all the functional spaces (core, admin special and support);
  - (4) Average height of the ceilings, excluding the Halls and Indoor Sport facilities; and
  - (5) List of all the special functional spaces such as Multipurpose Halls, Laboratories, Music Rooms, Technical Workshops, etc.
- (ii) The Comprehensive Condition Assessment Reports would be an ideal source for obtaining the information highlighted in paragraph (i) above.
- (iii) The “Per Number of Users” method takes into consideration the fact that the higher the number of users in a given space, the higher the utilisation rate of the occupied functional spaces and its systems, and the higher the rate of wear and tear and chances of breakages. Therefore in the case of education facilities it has been considered prudent to take this into consideration as the number of learners per gross floor area differs from one school to the next based on the extent of overcrowding or under-utilisation. In order to incorporate the Number of Users in determining the Gross Floor Area to be maintained, the Facility Occupancy Factor would be applied as follows:

- (1) Obtain the design capacity of the facility, e.g. the Number of Learners that the school was designed to accommodate, based on the *NSEF*;
- (2) Obtain the actual or projected number of users to utilise the facility in a given academic year; then
- (3) Determine the Facility Occupancy Factor (FOF), as follows:

$$\text{Facility Occupancy Factor, FOF} = \frac{\text{User Design Capacity}}{\text{Actual Number of Users}}$$

- (iv) The Combined GU&M Gross Area to be used as Unit of Costing for GU&M in the education sector should be determined as follows:

$$\text{Gross Grounds Area, GGA} = \text{Total Area Facility} - \text{GFA}$$

$$\text{Combined GU\&M Gross Area} = (\text{GFA} \times \text{FOF}) + \text{GGA}$$

Where: *GFA* = Gross Floor Area  
*FOF* = Facility Occupancy Factor  
*GGA* = Gross Grounds Area

- (f) Other variables that need to be reflected include the following:
- (i) The type of facility, e.g. LSENS, Focus Schools, Technical Schools, etc.; and
  - (ii) The number of storeys of the buildings. It would be easier and less costly to maintain single storey buildings than multi-storey buildings. This would affect areas such as cleaning gutters, cleaning windows, fixing fascia boards, and painting external walls.

#### 16.4.4 Budgeting for Normal GU&M Interventions

- (a) The budget for GU&M should be all encompassing and cater for all the needs of the GU&M activities. This will lead to effective management of the process, full and better financial accounting, improved planning and reporting.
- (b) The items to be included as part of the budget allocation should include:
  - (i) Recruitment costs, salaries and wages of Field Staff, including their allowances where applicable;
  - (ii) Tools of Trade for the GU&M personnel;
  - (iii) Operating Systems for GU&M activities, including licences;
  - (iv) Consumables for GU&M activities;
  - (v) Estimated costs for Repairs and Replacements (Minor and Major);
  - (vi) Preventative Maintenance costs (call-outs, where applicable, and replacement parts);
  - (vii) Cost of outsourced services (where applicable);
  - (viii) Training interventions;
  - (ix) Management of solid waste; and
  - (x) Management of condemned and obsolete materials.
- (c) The budgeting process should be carried out a year in advance and must be informed by the previous years' expenditure trends on similar facilities. (Calibration of the costing model should be carried out as the system matures and more information made available.)
- (d) The overall budget allocation that takes into consideration the items in paragraph (b) above should be expressed as a function of the Combined GU&M Gross Area. Various education facilities would have different Combined GU&M Gross Areas therefore grouping of GU&M Gross Areas should be considered.

#### 16.4.5 Budgeting for Emergency Interventions

- (a) Natural and man-made disasters are a common occurrence in the education sector. These disasters include severe thunderstorms, earthquakes, accidents and arson.
- (b) Disasters give rise to a need for emergency interventions as they are unplanned and disrupt the normal day-to-day operations.
- (c) The nature of the interventions could be minor (e.g. a couple of roof sheets blown away) or major (large portion of the roof blown away and part of the wall collapsed).
- (d) The longer damages associated with these disasters are left unattended, the further the extent of damage deepens and spreads to other areas.
- (e) Budgeting for emergencies has been a major difficulty mainly from a financial management and accounting point of view and does not fit quite well the national Disaster Management Programmes or Infrastructure Budgeting processes as these events would not have occurred at the time of budgeting and are therefore unknown.

- (f) The potential funding arrangements that need to be explored are:
  - (i) Insurance cover provided by entities who are underwritten by credible third parties;
  - (ii) Proposed Special Education Infrastructure Emergency Grant Fund; and
  - (iii) Setting aside a portion of available Education Infrastructure Grant Funds to respond to emergencies and disasters.
- (g) Confirmation and plans for setting up the funding options reflected in paragraph (f) above would be pursued jointly by the DBE and National Treasury.

#### **16.4.6 Sources of GU&M Funding**

- (a) The following potential sources of GU&M Funding have been identified and would, where applicable, be pursued with the relevant Government Departments:
  - (i) School Allocations per National Norms and Standards for School Funding;
  - (ii) Provincial Equitable Share (PES);
  - (iii) Education Infrastructure Grant (EIG);
  - (iv) Expanded Public Works Programme – for General Cleaners, Handyman and Groundsman;
  - (v) Sector Education and Training Authority – for training interventions; and
  - (vi) Any special grant funding per Section 16.4.5 (f) above.
- (b) The magnitude of budget allocations would be determined from time to time by the entities responsible for the budget allocations.
- (c) The funding for all the Capital Improvement Works would be budgeted for under the normal funding sources, e.g. EIG, PES and any special grant funding.

#### **16.4.7 Funding Constraints, Risk Assessment and Prioritisation**

- (a) The basic education sector is faced with:
  - (i) Existing number of education facilities at various degrees of acceptable GU&M Standards;
  - (ii) Relatively poor history and culture of maintenance across the sector therefore giving rise to huge maintenance backlogs;
  - (iii) Limited financial resources to tackle all the maintenance backlogs once and for all, and then maintain the practice moving forward; and
  - (iv) Backlogs with respect to capital infrastructure projects to address space shortages, eradication of structures built of inappropriate materials, and response to disaster schools.
- (b) Following paragraph (a) above, regardless of the best intentions, there may be instances where the available financial resources are not sufficient to address all the backlogs therefore needing economic choices to be made.

- (c) In making choices on which areas to address first, risk assessment leading to prioritisation must be undertaken by the PMD at all times.
- (d) As a general guide, the order of priority in the basic education sector should be as follows:
  - (i) Emergency Corrective Maintenance (For instance if the roof is blown away, no operations can take place, no GUMRR activities can be carried out therefore it becomes critical to prioritise it);
  - (ii) GUMRR activities – to keep the basic minimum interventions managed for day-to-day occupational health risks;
  - (iii) Preventative Maintenance – to prevent or slow down rate of deterioration especially on new facilities; and
  - (iv) GU&M interventions required to ensure ongoing functional or operational effectiveness.

## 17. ROLES AND RESPONSIBILITIES

### 17.1 General Roles and Responsibilities

- (a) The roles and responsibilities of various entities that are involved in the GU&M activities have been highlighted under various sections of these *GU&M Guidelines*.
- (b) For ease of reference these roles and responsibilities are further summarised in **Table 11** below and are intended to ensure that there is no confusion on who needs to do what in the process of looking after and maintaining education facilities.
- (c) In the case of Schools with Learner Boarding Facilities and those running the National School Nutrition Programme (NSNP), there needs to be clarity and delineation of responsibilities and roles of the Kitchen Staff from the General Cleaners for the GU&M as far as looking after and cleaning the kitchen utensils, equipment and the working space is concerned. These lines must be clarified and these responsibilities should be kept separate as they are funded separately and have separate hygiene requirements.
- (d) The Job Descriptions and Employment Contracts to be entered into with the specific individuals should be concluded by the respective Managers of the GU&M Staff.

**Table 11:** Roles and Responsibilities of various role-players that are involved in the General Upkeep and Maintenance of education facilities.

Stage of the Product Lifecycle	Entity	Roles and Responsibilities
<b>Statutory Requirements</b>	Dept. of Basic Education (DBE)	<ul style="list-style-type: none"> <li>• Develop, institutionalise, maintain and update the <i>GU&amp;M Guidelines</i>;</li> <li>• Develop and maintain Reporting Templates for various GU&amp;M activities;</li> <li>• Conduct workshops and/or undertake training of any entity on the application of the provisions of the <i>GU&amp;M Guidelines</i>;</li> <li>• Develop, institutionalise and maintain a centralised web-based Computerised Maintenance Management System (CMMS) for access and use by the sector at large for capturing, synthesising, analysing the information requests and for storing data and information on the GU&amp;M processes and activities;</li> <li>• Liaise with and co-ordinate activities of all the relevant Government Departments (that include National Treasury, Dept of Public Works, COGTA, SETA) pertaining to GU&amp;M matters;</li> </ul>
<b>Pre-planning Stage</b>	DBE	<ul style="list-style-type: none"> <li>• Develop and maintain baseline information on the condition of all the education facilities;</li> </ul>
	Dept of Public Work (DPW)	<ul style="list-style-type: none"> <li>• Establish and maintain an Immovable Asset Register for all the Public Education Facilities;</li> <li>• Develop Custodian Asset Management Plan;</li> <li>• Assist PEDs with planning and budgeting for GU&amp;M activities;</li> </ul>

Stage of the Product Lifecycle	Entity	Roles and Responsibilities
<b>Pre-planning Stage</b>	Provincial Education Depts. (PEDs)	<ul style="list-style-type: none"> <li>• Develop and implement Provincial Education Infrastructure Plans;</li> <li>• Develop and implement User Asset Management Plans;</li> <li>• Develop a Database of Retired Professionals in the Built Environment to assist with various technical assignments;</li> <li>• Appoint Works Inspectors and house them at District Offices to assist with site inspections and technical assistance where necessary;</li> <li>• Chief Director: Infrastructure (CD:1) - prepares specifications for replacement parts needed in education facilities when carrying out GUMRR;</li> </ul>
<b>Planning and Design Stage</b>	Appointed Design Consultant	<ul style="list-style-type: none"> <li>• Undertake assessment of Maintainability and Lifecycle Costing of the proposed construction technology and building materials per the provisions of the <i>Norms and Standards for Education Facilities</i>;</li> <li>• Ensure that constructability and maintainability are considered during planning and design stages per the provision of the <i>Norms and Standards for Education Facilities</i>;</li> <li>• Undertake to ensure that due consideration is made on the quality and durability of the specified construction materials and availability of replacement parts locally;</li> <li>• Ensure that clarity is provided in the Specifications on the required quality standards of the deliverables;</li> <li>• Call for Suppliers and Contractors in the Bid Documents/ Call for Quotations to provide Maintenance Plans and Warrantees/ Guarantees for their deliverables and to conduct Preventative Maintenance over the Guarantee Period;</li> </ul>
<b>Construction Stage</b>	Appointed Contractors	<ul style="list-style-type: none"> <li>• Ensure that the workmanship meets the quality standards per the Design Specifications;</li> <li>• Use SABS approved construction materials;</li> <li>• Where Alternative Building Technologies are considered, to use only Agrément Approved/Certified technologies;</li> </ul>
<b>Construction Close-out Stage</b>	Appointed Design Consultant	<ul style="list-style-type: none"> <li>• Ensure that the following documents are made available to the relevant Client Department: <ul style="list-style-type: none"> <li>○ Guarantees / Warrantees;</li> <li>○ Relevant Certificates of Compliance;</li> <li>○ Preventative Maintenance Plans; and</li> <li>○ As-built Drawings.</li> </ul> </li> <li>• No final payment is made to any entity without the documents listed above being made available;</li> </ul>
	PEDs	<ul style="list-style-type: none"> <li>• Make copies of the Close-out documents mentioned above and send them to respective Facility Managers for reference purposes during operations;</li> <li>• Keep safe all the documents mentioned above;</li> </ul>

Stage of the Product Lifecycle	Entity	Roles and Responsibilities
<b>Operations Stage</b>	Facility Manager (School Principal, Boarding Master/Mistress, Circuit Manager, District Director)	<ul style="list-style-type: none"> <li>• Is an accountable person for GU&amp;M activities in the facility he/she is responsible for;</li> <li>• Appoints a Facility Maintenance Co-ordinator (FMC) and FMC Deputies where necessary;</li> <li>• Appoints Field Staff for his/her facility;</li> <li>• Provides Tools of Trade for the appointed Maintenance Management Staff and Field Staff;</li> <li>• Provides Admin Support Staff for the GU&amp;M Management Staff;</li> <li>• Secures and disburses appropriately budget for GU&amp;M activities;</li> </ul>
	Facility Maintenance Co-ordinator (FMC)	<ul style="list-style-type: none"> <li>• Develops Facility GU&amp;M Management Plan including Preventative Maintenance Schedules and Rosters for his/her Facility;</li> <li>• Provides day-to-day management of GU&amp;M activities;</li> <li>• Manages and furnishes the GU&amp;M Tools and Equipment Register;</li> <li>• Manages and furnishes GU&amp;M Operations Register;</li> <li>• Co-ordinates and manages the process of scheduling of activities of Preventative Maintenance Service Providers and ensuring that such activities are carried out;</li> <li>• Ensures that where the general upkeep activities are not outsourced that there is co-ordination of such activities as would be carried out by the facility users, e.g. learners;</li> <li>• Manages the process of compiling intervention requests to PEDs: <ul style="list-style-type: none"> <li>○ Emergency Capital Improvement Works (CIW);</li> <li>○ Request for normal CIW interventions;</li> </ul> </li> <li>• Prepares required GU&amp;M Reports: <ul style="list-style-type: none"> <li>○ Quarterly Expenditure Reports; and</li> <li>○ Annual Report.</li> </ul> </li> <li>• Identifies all the training interventions required for the Facility Maintenance Personnel and submits to District Maintenance Manager (DMM);</li> <li>• Ensures that any information to be uploaded on the CMMS is indeed uploaded;</li> </ul>
	GU&M Admin Staff	<ul style="list-style-type: none"> <li>• Provision of secretarial work on GU&amp;M activities;</li> <li>• Ordering and purchasing of required GU&amp;M goods and consumables;</li> <li>• Uploading of GU&amp;M information on the CMMS.</li> </ul>

Stage of the Product Lifecycle	Entity	Roles and Responsibilities
	Facility Users	<ul style="list-style-type: none"> <li>• Look after the facility and its systems and act responsibly thus ensuring their preservation and longevity;</li> <li>• Not damage or vandalise the facility components and be liable for consequences in the event of such been ignored;</li> <li>• Undertake the General Upkeep activities assigned to them, following the rosters developed by the FMC;</li> <li>• Identify and report to the FMC any GU&amp;M attention required on any component of the facility or its systems;</li> <li>• Provide suggestions to the FMC on any GU&amp;M item to contribute towards system improvements;</li> </ul>
	Community and General Members of Public	<ul style="list-style-type: none"> <li>• Look after the education facilities and protect them from abuse and vandalism;</li> <li>• Report any acts of abuse and vandalism to the Facility Manager;</li> <li>• Provide credible, competent, reliable, and capable members of community to take part in the GU&amp;M activities either as General Cleaners, Caretakers, Groundsmen or Assistants;</li> </ul>
	Preventative Maintenance Service Providers	<ul style="list-style-type: none"> <li>• Conduct training of users at no additional costs on the operations of the system or equipment provided;</li> <li>• Undertake Preventative Maintenance activities at the scheduled times and respond to cases of emergencies;</li> <li>• Act professionally and honestly in carrying out their duties;</li> <li>• Provide advice and suggestions to the FMC on how best to preserve or use the attendant equipment or system;</li> </ul>
	Works Inspectors	<ul style="list-style-type: none"> <li>• Assist the FMC with assessment of GU&amp;M needs of their education facilities;</li> <li>• Assist the FMC with the development of the Facility GU&amp;M Management Plans;</li> <li>• Assist with the co-ordination of training interventions for the GU&amp;M Field Staff;</li> <li>• Assesses the work carried out by Service Providers on Repairs and Replacements and sign them off, recommending payments towards such services;</li> <li>• Assess the materials earmarked to be declared as condemned and obsolete and sign them off as decommissioned;</li> <li>• Where necessary assist in guiding the Handyman/ Caretaker and Groundsman on the required minor repairs and minor replacements;</li> <li>• Assist the FMC with preparation of GU&amp;M Reports;</li> <li>• Suggest to the DMM and PMD any required system improvements;</li> <li>• Assists in ensuring that information to be uploaded on CMMS is indeed uploaded on time and in the correct format;</li> </ul>

Stage of the Product Lifecycle	Entity	Roles and Responsibilities
	General Cleaners	<ul style="list-style-type: none"> <li>• Look after and clean the functional spaces assigned to them to the required quality standards;</li> <li>• Look after the GU&amp;M Equipment and Tools assigned to them and use them correctly;</li> <li>• Look after and utilise the GU&amp;M consumables cost effectively;</li> <li>• Report any GU&amp;M incidents to the FMC;</li> <li>• Propose any system improvements to the FMC;</li> <li>• Undergo training as advised by the FMC;</li> </ul>
	Caretaker	<ul style="list-style-type: none"> <li>• Undertake inor repairs and minor replacements of facility components and its systems per the required quality standards – focusing mainly on the buildings and indoor environment;</li> <li>• To include some of the outdoor systems such as lighting, water fountains, outdoor learning equipment;</li> <li>• Ensure that replacement parts meet the design quality standards and that no inferior materials are used;</li> <li>• Unblock any blocked drains;</li> <li>• Ensure that quality workmanship is realised when carrying out minor repairs and replacements;</li> <li>• Look after the GU&amp;M Equipment and Tools assigned to him/ her;</li> <li>• Report any GU&amp;M incidents to the FMC;</li> <li>• Propose any system improvements to the FMC;</li> <li>• Undergo training as advised by the FMC;</li> </ul>

Stage of the Product Lifecycle	Entity	Roles and Responsibilities
	Groundsman	<ul style="list-style-type: none"> <li>• Undertake management of GU&amp;M activities required on the grounds which include Facility Grounds, Courtyards, Flower Gardens, Landscapes, Open Spaces, Vegetable Gardens, Playgrounds, Sport fields, Signage, Fences and Gates; Pools, Sprinkler system; Driveways, Walkways, Parking Lots, Drop-off Areas;</li> <li>• Mowing of grass, pruning and cutting back trees and shrubs;</li> <li>• Cleaning of driveways and walkways;</li> <li>• Cleaning of gutters and stormwater drainage system;</li> <li>• Undertake minor repairs and minor replacements in identified outdoor areas;</li> <li>• Management of solid waste, which include: <ul style="list-style-type: none"> <li>○ Picking up and collection of solid waste;</li> <li>○ Emptying waste bins placed outdoors;</li> <li>○ Assisting with recycling activities;</li> <li>○ Temporary storage of solid waste;</li> <li>○ Assist with removal of solid waste off-site;</li> <li>○ Incinerate waste on-site where this is permissible and appropriate facilities for such been provided;</li> <li>○ Assist with collection and disposal of ash and other remains after solid waste incineration;</li> <li>○ Look after and keep clean and tidy the temporary solid waste Storage Area and its surroundings;</li> </ul> </li> <li>• Management of condemned and obsolete materials, which include: <ul style="list-style-type: none"> <li>○ Assisting with collection and removal of condemned and obsolete materials to designated Condemnation Area;</li> <li>○ Look after and keep clean and tidy the Condemnation Area;</li> <li>○ Assist with removal off-site condemned material;</li> </ul> </li> <li>• Look after the GU&amp;M Equipment and Tools assigned to him/her;</li> <li>• Report any GU&amp;M incidents to the FMC;</li> <li>• Propose any system improvements to the FMC;</li> <li>• Undergo the training sessions as advised by the FMC;</li> </ul>
	School Governing Body (SGB)	<ul style="list-style-type: none"> <li>• Monitor, oversee and ensure that GU&amp;M activities are carried out;</li> <li>• Assist with the identification and preparation of requests for CIW interventions to PEDs;</li> <li>• Suggest system improvements to the FMC;</li> </ul>

Stage of the Product Lifecycle	Entity	Roles and Responsibilities
	District Maintenance Manager (DMM)	<ul style="list-style-type: none"> <li>• Provide day-to-day Management of Works Inspectors placed by the Province in his/her District Offices;</li> <li>• Ensure that adequate Tools of Trade and Operating Systems are made available to the Works Inspectors;</li> <li>• Consolidate the GU&amp;M Quarterly and Annual Reports from schools in their Districts, Circuit Offices and their District Office for submission to the Provincial Maintenance Director (PMD);</li> <li>• Propose any system improvement to National Maintenance Director (NMD).</li> </ul>
	Provincial Maintenance Director (PMD)	<ul style="list-style-type: none"> <li>• Provide HR personnel including Works Inspectors to be placed at Districts;</li> <li>• Provide requisite Tools of Trade for the Maintenance Personnel;</li> <li>• Consolidate GU&amp;M Reports from the Districts for Provincial Reporting to DBE;</li> <li>• Analyse trends on the GU&amp;M activities which include expenditures, repetitive failures, and facility component Economic Service Lives;</li> <li>• Provide feedback on GU&amp;M facility component observations to the Provincial Director responsible the Capital Improvement Works especially on performance of building technologies and building materials;</li> <li>• Co-ordinate GU&amp;M training interventions required in the Province;</li> <li>• Prepare GU&amp;M Provincial Plan and budget;</li> <li>• Respond to CIW Requests from Districts, Circuits and Schools;</li> <li>• Consolidates proposed system improvements and submits to National Maintenance Director (NMD) at DBE;</li> <li>• Propose any system improvements to NMD.</li> </ul>
	National Maintenance Director (NMD)	<ul style="list-style-type: none"> <li>• Provides oversight function and monitors implementation of GU&amp;M Guidelines and that GU&amp;M activities are carried out and so also reporting requirements;</li> <li>• Assist Provinces with the implementation of GU&amp;M policies and guidelines;</li> <li>• Consolidates Provincial GU&amp;M Quarterly and Annual Reports to Sector Reports;</li> <li>• Analyse trends on GU&amp;M and advise on any policy modifications that might be required to DBE Unit responsible for such;</li> <li>• Review and effect GU&amp;M system improvements;</li> <li>• Responsible for acquisition and maintenance of CMMS and ensures its full utilisation by the sector;</li> <li>• Ensure budget availability for GU&amp;M activities;</li> <li>• Liaises with various key stakeholders at National Level on GU&amp;M activities;</li> </ul>

## 17.2 Specific Functions

### 17.2.1 Condition Assessments

- (a) Condition Assessment of education facilities is essential in enabling the sector and the planners to have baseline information on the status of all the education facilities, its systems, and FFE at a particular point in time upon which they could have a clear determination of required GU&M interventions and other CIW interventions that might be required.
- (b) Per the *Guidelines for Condition Assessment of Education Facilities* (EFCA), the DBE is responsible for managing the process of undertaking Baseline Comprehensive Condition Assessments at prescribed intervals on all the education facilities.
- (c) The scope of coverage for EFCA includes the assessment of how well the facility is looked after and maintained by the Facility Users and quantifies the outcomes of the assessment as the General Upkeep and Maintenance Rating (GU&MR).
- (d) The items that are included as part of the GU&M assessment are presented as **Annexure B** and are rated from 1 to 5 per **Table 12** below:

**Table 12:** *Assessment of General Upkeep and Minor Maintenance of Education Facilities.*

GU&M Rating		Description
5	Excellent	Facility is well-looked after and well-maintained. General Upkeep and Maintenance of the facility needs to continue.
4	Good	Facility is reasonably well-looked after and reasonably well-maintained. However, there is sluggishness in the system that needs to be tightened up.
3	Fair	Facility is fairly well-looked after and fairly well-maintained. However, there are a number of areas that need to be attended to.
2	Poor	Facility is poorly looked after and poorly maintained. There are major areas of concern that need to be attended to urgently.
1	Very Poor	Facility is not looked after and not maintained at all. This is a catastrophic image that needs to be attended to as an emergency.

- (e) The GU&M Rating is also linked to the Cleanliness Levels covered under Section 17.3.2 below.
- (f) The School Governing Body and the Works Inspectors should use the same rating to determine the GU&M gaps, for consistency.

### 17.2.2 Procurement of GU&M Goods and Services

- (a) A number of goods and services need to be made available to enable the GU&M activities to be carried out. The procurement approaches to be adopted in obtaining these goods and services would differ depending upon what is required at a particular point in time.
- (b) The procurement of such goods and services should be carried out in accordance with applicable legislation governing procurement of goods and services in the public sector.
- (c) **Table 13** below provides as summary of entities/persons responsible for procuring various goods and services associated with GU&M activities in the basic education sector.

- (d) The responsible persons need to initiate the procurement processes and contracting arrangements with respective Suppliers before the required goods and/or services are due. It might be necessary to allow for some overlap between the outgoing and incoming Suppliers for some items thereby ensuring smooth handover during the transition period.

**Table 13:** Summary of entities responsible for procurement of various goods and services required for GU&M activities in education facilities.

Item to be Procured/Purchased	Responsible Entity/ Person	Suggested Procurement Approach
1 GU&M Tools, Equipment and Protective Clothing	Facility Maintenance Manager (FMC)	<ul style="list-style-type: none"> <li>3 Quote System – Once off purchase.</li> </ul>
2 GU&M Consumables	FMC	<ul style="list-style-type: none"> <li>3 Quote System – Annual ongoing purchases.</li> <li>Annual contracts with the preferred Suppliers that score the highest procurement points and are within the vicinity of the facility.</li> </ul>
3 GU&M Minor Repair and Minor Replacement Parts	FMC assisted by DMM and/or Works Inspectors	<ul style="list-style-type: none"> <li>3 Quote System – Annual ongoing purchases.</li> <li>Annual contracts with the preferred Suppliers that score the highest procurement points and are within the vicinity of the facility.</li> </ul>
4 Tools of Trade for Works Inspectors and Support Staff	Facility Manager	<ul style="list-style-type: none"> <li>Open Bid or 3 Quote system, depending upon the total cost of items to be procured.</li> </ul>
5 GU&M Staff Training Service Providers	Provincial Maintenance Director (PMD)	<ul style="list-style-type: none"> <li>3 Quote System – Database of Service Providers.</li> <li>Two (2) year contracts with Training Service Provider(s).</li> <li>Aim to have Suppliers for each District.</li> </ul>
6 Central and Computerised Maintenance Management System (or equivalent)	National Maintenance Director (NMD) at DBE	<ul style="list-style-type: none"> <li>Open Bid Process or following an approach that has been agreed upon with National Treasury.</li> </ul>
7 Preventative Maintenance Services (post the Guarantee Period)	DMM	<ul style="list-style-type: none"> <li>Open Bid – Two (2) year contract with Service Provider(s) per District.</li> </ul>
8 Emergency and Normal Major Repairs and Major Replacements	PMD	<ul style="list-style-type: none"> <li>Open Bid Process – Database of Service Providers; three (3) year contracts with Service Provider per District.</li> </ul>
9 Services of Implementing Agents	PEDs	<ul style="list-style-type: none"> <li>Provincial acquisition process.</li> </ul>
10 Refurbishment and Renovations (R & R)	PEDs	<ul style="list-style-type: none"> <li>Open Bid Process</li> </ul>
11 Upgrades and Additions ( U & A)	PEDs	<ul style="list-style-type: none"> <li>Open Bid Process</li> </ul>
12 Total Replacements	PEDs	<ul style="list-style-type: none"> <li>Open Bid Process</li> </ul>

### 17.2.3 Decommissioning and Disposal of Obsolete and Condemned Materials

- (a) Generally, obsolete and condemned materials are poorly managed because of uncertainty on how best to manage the associated processes. As a result these materials are normally left lying about at various places around the facility.
- (b) Furniture, equipment, tools and other learning and teaching materials cannot be utilised *ad infinitum* regardless of the extent and best efforts to maintain them. After a certain period of time, i.e. at the end of their Economic Service Lives (ESLs), they will become obsolete due to natural wear and tear, breakage, technological advancement and when their usefulness in their initially intended environment diminished. Some pieces of furniture might be broken, damaged or worn-out beyond repairable state.
- (c) The Facility Maintenance Co-ordinator (FMC), assisted by the Caretaker, must identify and list all such items and advise the Facility Manager for concurrence. The Facility Manager should request the Works Inspectors to confirm and sign off such materials as having been condemned and/or obsolete, and no longer fit for use by the facility.
- (d) After the condemned materials have been signed off by the Works Inspector, the FMC would decommission such materials and record them in the GU&M Operations Register.
- (e) The condemned and obsolete materials would be classified by the FMC and the Works Inspector as either:
- (i) Broken or damaged beyond repairs and unable to be fixed or recycled cost effectively therefore only fit for being disposed of;
  - (ii) Broken or damaged but certain parts, e.g. steel frames for desks could still be recycled and re-used to build other desks; or
  - (iii) Reasonably intact but obsolete for the business needs of the facility because of technological advancements, curriculum changes or legislatives or occupational health and safety and therefore not useful to the facility.
- (f) In case of:
- (i) Paragraph (e)(i) above – the condemned items must be disposed of;
  - (ii) Paragraph (e)(ii) above – the condemned materials must be stored temporarily in the designated Condemnation Area for a period of no more than six (6) months and be taken off site by the item manufacturer as part of the cost of providing replacement items;
  - (iii) Paragraph (e)(iii) - stored temporarily in the designated Condemnation Area for a period of no more than six (6) months and either:
    - (1) Dealt with in terms of either the Supply Chain Management Policy or Asset Disposal Policy of the Facility; or
    - (2) Where such policies do not exist, donated either to other education facilities, government institutions, community structures, and needy community members (who shall not be related



to any of the SGB or Facility Management Members) as would be determined by the SGB or Facility Management.

- (g) All the condemned and obsolete materials must be collected by the Caretaker and kept in the designated Condemnation Area for the defined period of time. Where possible, no materials must be kept in the Condemnation Area for more than six (6) months.
- (h) Each Education Facility must be provided with a Condemnation Area as part of Capital Improvement Works.
- (i) The Condemnation Area must be organised, kept tidy and clean at all times by the Caretaker.

## **17.3 Expected Levels of Service**

### **17.3.1 General Considerations**

- (a) The measure of what is considered as orderly, clean, tidy, and functional and therefore acceptable is subjective and informed by the beholder's perspective, orientation, past and frame of reference.
- (b) The Facility Management together with the FMC should specify the minimum levels of service for the GU&M work.

(c) **Table 14** presents the generic minimum Levels of Service required in the education facilities:

**Table 14:** *Generic minimum Levels of Service for GU&M activities required in the education facilities.*

Area of Focus	Expected Level of Service
1 <b>Building Envelope</b>	<ul style="list-style-type: none"> <li>• <b>Roofs:</b> <ul style="list-style-type: none"> <li>○ Roof covering and “side panels” in place, roof sheets that were blown away or broken roof tiles replaced;</li> <li>○ Roof not leaking;</li> <li>○ Roof covering not rusted;</li> <li>○ Gutters fixed and/or repaired;</li> </ul> </li> <li>• <b>Gutters and Downpipes:</b> <ul style="list-style-type: none"> <li>○ No weeds, leaves, debris in gutters;</li> <li>○ Gutters and downpipes painted, where this is required;</li> <li>○ Downpipes secured in place;</li> <li>○ Gutter-downpipe joints not leaking;</li> </ul> </li> <li>• <b>Walls:</b> <ul style="list-style-type: none"> <li>○ No cracks;</li> <li>○ Plaster not chipped;</li> <li>○ Paint not peeling off;</li> <li>○ No dirt marks;</li> </ul> </li> <li>• <b>Doors and Windows:</b> <ul style="list-style-type: none"> <li>○ Handles, locks and hinges in place, not loose and operational;</li> <li>○ Frames painted, where this is applicable;</li> <li>○ Door panels not broken and not paint starved;</li> <li>○ Broken window panes replaced with prescribed glass panes per the Norms and Standard and SANS 1263.</li> <li>○ No dirt or dirt marks;</li> </ul> </li> </ul>

Area of Focus	Expected Level of Service
<p>2 <b>Indoor Spaces</b></p>	<ul style="list-style-type: none"> <li>• <b>Ceiling:</b> <ul style="list-style-type: none"> <li>○ Broken ceiling panels replaced;</li> <li>○ Ceiling painted;</li> <li>○ No dirt or dirt marks on ceiling;</li> </ul> </li> <li>• <b>Walls:</b> <ul style="list-style-type: none"> <li>○ No cracks on walls;</li> <li>○ Plaster not chipped;</li> <li>○ Paint not peeling off;</li> <li>○ Correct paint colour on the wall (per the Norms and Standards for Education Facilities);</li> <li>○ No dirt marks;</li> </ul> </li> <li>• <b>Floors:</b> <ul style="list-style-type: none"> <li>○ Floors not cracked or with no ditches;</li> <li>○ Floor covering not worn out;</li> <li>○ Portions of floor covering that either got “peeled” off, torn, broken or loose tiles replaced;</li> <li>○ No waste, dirt or dirt marks on the floor;</li> </ul> </li> <li>• <b>General Indoor Ambience:</b> <ul style="list-style-type: none"> <li>○ Organised;</li> <li>○ Clean and tidy;</li> </ul> </li> </ul>
<p>3 <b>Services and Systems</b></p>	<ul style="list-style-type: none"> <li>• Regular Preventative Maintenance of facility services and systems undertaken at predetermined intervals;</li> <li>• Fully functional at all times when needed;</li> <li>• Fused light bulbs replaced with bulbs of prescribed light intensity (per the <i>Norms and Standards for Education Facilities</i>);</li> <li>• Loose system parts tightened;</li> <li>• Broken and/or faulty parts replaced;</li> <li>• No leaks;</li> <li>• Sewer blockages unblocked;</li> <li>• Components with paint peeling off, repainted;</li> <li>• Dirt and dirt marks removed;</li> </ul>

Area of Focus	Expected Level of Service
4 <b>Furniture, Fittings and Equipment (FFE)</b>	<ul style="list-style-type: none"> <li>• Adequate FFE provided;</li> <li>• Loose screws and wiggling furniture and fittings tightened;</li> <li>• Malfunctioning equipment repaired;</li> <li>• Broken or worn out components of FFE repaired or replaced;</li> <li>• Totally broken FFE replaced;</li> <li>• FFE cleaned and kept orderly and tidy;</li> </ul>
5 <b>Outdoor Amenities</b>	<ul style="list-style-type: none"> <li>• Grass cut, weeds removed, hedges, ground-covers and trees trimmed;</li> <li>• Learning and Playing Equipment not wiggling, screws tightened, broken components repaired or replaced, components with peeling paint repainted;</li> <li>• Landscapes and flower gardens managed and de-weeded;</li> <li>• Walkways, driveways, assembly areas cleaned and de-weeded;</li> <li>• Pools cleaned;</li> <li>• Faded road-markings repainted;</li> <li>• Debris removed from stormwater channels and drainage inlets;</li> <li>• Drop-off areas de-weeded, cleaned and kept tidy;</li> <li>• Solid waste properly managed – picked up, collected, sorted for recycling (where this practiced), placed in designated waste storage bins and in temporary storage area and disposed of off-site in designated solid waste disposal site or incinerated.</li> <li>• Condemned and obsolete material stored in designated Condemnation Area;</li> <li>• Outdoors generally clean, tidy, and organised.</li> </ul>

### 17.3.2 Levels of Cleanliness

- (a) Although there is no universally agreed upon standards of what constitutes “cleanliness”, the levels that have been adopted by the Association of Physical Plant Administrators (APPA) would be considered to assist in guiding the basic education sector on the expected standards.
- (b) Different functional spaces or certain designated areas would require different levels of cleanliness, e.g. main kitchen vs storage area; sick-room vs multi-purpose hall.
- (c) The required Levels of Cleanliness should be specified for each functional space and designated area. In deciding on these Levels, occupational health and safety issues have to be taken into consideration.
- (d) The generic Levels of Cleanliness, as adapted from APPA, are reflected below:

### **Level 1 – Orderly Spotless:**

*Establishes cleaning at the highest level. Results in spotless building as might be found in well-run hospitals or corporate suite environment. This is show-quality cleaning for that prime facility.*

- Floors and base mouldings shine and/or are bright and clean; colours are fresh. There is no build-up of dirt in corners or along walls.
- All vertical and horizontal surfaces have a freshly cleaned or polished appearance and have no accumulation of dust, dirt, marks, streaks, smudges or fingerprints.
- Washroom and shower tiles and fixtures gleam and are odour-free. Supplies are adequate.
- Litter containers hold only daily waste and are clean and odour-free.
- Chalkboards and trays only showing day's use.
- Furniture is clean and orderly.
- Window panes are clean and sparkling.

### **Level 2 – Ordinary Tidiness:**

*This is the basic level at which cleaning should be maintained. Lower levels for washrooms, changing/locker rooms and similar type facilities are not acceptable.*

- Floors and base mouldings shine and/or are bright and clean. There is no build-up in corners or along walls, but there can be up to two days' worth of dirt, dust, stains or streaks.
- All vertical and horizontal surfaces are clean, but marks, dust, smudges and fingerprints are noticeable with close observation.
- Washroom and shower tile and fixtures gleam and are odour-free. Supplies are adequate.
- Litter containers hold only daily waste and are clean and odour-free.
- Chalkboards and trays only showing day's use.
- Furniture is clean and orderly.
- Window panes are clean and sparkling.

### **Level 3 – Casual Inattention:**

*This level is the norm for most school facilities and meets standards. It is acceptable to most stakeholders and does not pose any health issues. This level reflects the first budget cut, or some other staffing-related problem. It is a lowering of normal expectations. While not totally acceptable, it has yet to reach an unacceptable level of cleanliness.*

- Floors are swept clean, but upon close observation dust, dirt and stains, as well as a build-up of dirt, dust and/or floor finish in corners and along walls, can be seen.
- There are dull spots and/or matted carpet in walking lanes.
- There are streaks and splashes on base moulding.
- All vertical and horizontal surfaces have obvious dust, dirt, marks, smudges and fingerprints.

- Lamps all work and all fixtures are clean.
- Litter containers hold only daily waste and are clean and odour-free.
- Chalkboards and trays are only showing day's use.
- Furniture is clean and orderly.
- Window panes are clean and sparkling.

#### **Level 4 – Moderate Cleanliness:**

*This level is not acceptable in a school environment. Classrooms would be cleaned every other day, carpets would be vacuumed every third day, and dusting would occur once a month. It reflects the second budget cut, or some other significant staffing-related problem. Areas are becoming unacceptable. People begin to accept an environment lacking normal cleanliness. In fact, the facility begins to constantly look like it requires a good “spring cleaning.”*

- Floors are swept or vacuum cleaned, but are dull, dirty, and stained. There is an obvious build-up of dust, dirt and/or floor finish in corners and along walls.
- There is dull path and/or obviously matted carpet in the walking lanes. Base moulding is dull and dirty with streaks and/or splashes.
- All vertical and horizontal surfaces have conspicuous dust, dirt, smudges, fingerprints and marks that will be difficult to remove.
- Lamp fixtures are dirty and up to 5 percent of light bulbs are burned out.
- Litter containers have old trash. They are stained, marked, and smell sour.
- Chalkboards and trays are dusty and streaked.
- Furniture is in disarray.
- Window panes show some streaks and hand prints.

#### **Level 5 – Unkempt Neglect Indicators:**

*This is the final and lowest level. The trucking industry would call this “just-in-time cleaning.” The facility is always dirty, with cleaning accomplished at an unacceptable level. It can very rapidly lead to an unhealthy situation. Waste bins might be emptied and carpets vacuumed only once a week.*

- Floors and carpets are dirty, dull, scuffed and/or matted with visible wear and/or pitting. There is a conspicuous build-up of dirt, dust and/or floor finish in corners and along walls. Base moulding is dirty, stained and streaked. Gum, stains, dirt, dust balls and trash are broadcast.
- All vertical and horizontal surfaces have major accumulations of dust, dirt, smudges and fingerprints, as well as damage all of which will be difficult to remove. It is evident that no maintenance or cleaning is done on these surfaces.
- Light fixtures are dirty with dust balls and flies' marks. More than 5 percent of the light bulbs are burned out.
- Waste containers overflow. They are stained, marked and smell sour.
- Chalkboards and trays are dusty and streaked.

- Furniture is dusty, marked and in disarray.
  - Windows panes are dirty with hand prints.
- (e) The Facility Manager together with the Facility Maintenance Co-ordinator (FMC) should:
- (i) Conduct risk assessment associated with inadequate cleaning of specific functional spaces and designated areas such as Grade R classrooms, Kitchens, Sick rooms and desired standards to:
    - (1) Generally acceptable minimum occupational health and safety standards;
    - (2) Achieve expected minimum organisational image; and
    - (3) Instil a sense of exemplary standards to the learners.
  - (ii) Based on the risk levels and desired standards, the required Level of Cleanliness should be decided upon.
  - (iii) As a minimum, generally the Level of Cleanliness in Education Facilities should not be less than Level 3.
  - (iv) The frequency of regular GU&M activities should then be determined. This would be affected by the:
    - (1) Staff complement assigned to undertake various GU&M activities versus the size of the area to be cleaned, i.e. the Custodial Square Meterage;
    - (2) Set of activities taking place at various times in the facility (e.g. days with school functions such as sports);
    - (3) Location of the education facility;
    - (4) Environmental conditions; and
    - (5) Season of the year.
  - (v) The FMC should assess the situation on the ground and review the frequency of activities accordingly. Previous years' experiences/ benchmarks would be assistance as a point of reference.

## 18. OPERATIONAL AND MANAGEMENT STRUCTURES

- (a) Each entity on the delivery chain (National, Province, District, Circuit, School, and Boarding Facility) has a unique structure that guides its own operations.
- (b) Each of these entities needs to have a dedicated unit that looks after GU&M operations.
- (c) In developing these structures there needs to be clarity on how the GU&M Units link with the rest of the organisation and also how it links with other entities upstream and downstream. For instance there needs to be clarity on how the Province relates to the DBE (upstream) and Districts (downstream). This is imperative in clarifying reporting lines, and management of interfaces inter and intra organisationally.
- (d) Wherever possible, establishment of Maintenance Committees for management of GU&M activities must be avoided because invariably “management by committees” has its serious shortcomings especially at the operating level. Accountability becomes a serious problem and turn-around times are an issue, with people having other responsibilities that they tend to prioritise.
- (e) A generic Operational and Management Structure for managing GU&M activities in the basic education sector is presented in **Figure 6** overleaf:

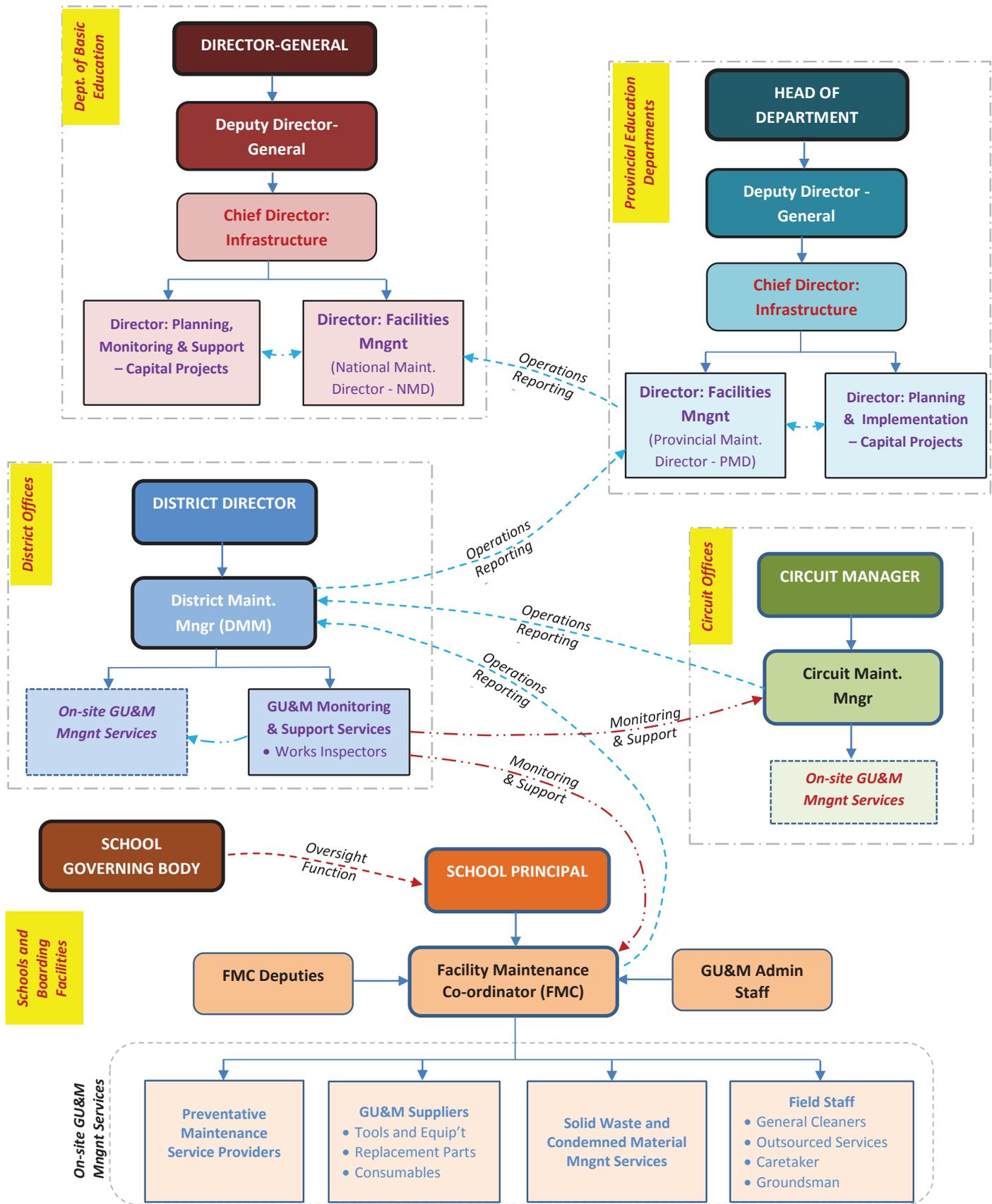


Figure 6: Generic Management and Operational Structure for GU&M activities.

## PART D: IMPLEMENTATION PROCESS

### 19. THE IMPLEMENTATION PLAN

#### 19.1 Introduction

- (a) The basic education sector does not have a well-established culture, formidable systems and embedded management structures in place for maintaining its facilities. Also there is no reliable data that is available to inform some of the indices associated with the GU&M activities to facilitate the planning process, i.e. the medium and long-term plans.
- (b) The success with the implementation of the provisions of these *GU&M Guidelines* would be informed by the clarity on the steps to be taken in implementing them. This section of the document therefore provides high level information on the Implementation Plan.
- (c) The Implementation Plan considers both the immediate- and medium-term arrangements. It is therefore sub-divided into two sections that are aimed at addressing these specific areas, and these are:
  - (i) Setting up the Basic Education GU&M Management System; and
  - (ii) Pilot Process leading to full implementation.
- (d) For the system to mature it has to reach some level of stability, learn from itself and self-improve. It should be characterised by:
  - (i) Data collection that should be stored in a reliable databank;
  - (ii) Ongoing data analysis and synthesis; and
  - (iii) Continuous system improvement.

#### 19.2 Key Success Factors

- (a) The ability to carry out the provisions of these *GU&M Guidelines* and the success with the implementation processes can only be realised if the identified key success factors are realised.
- (b) Success with the GU&M processes and long-term sustainability thereof referred to in paragraph (a) above, requires that:
  - (i) All the resources per the provisions of Section 16 be made available;
  - (ii) Clear management structures at every operational level be set up;
  - (iii) Clear operating models at each operational level be established and pursued;
  - (iv) Close monitoring and evaluation of the GU&M implementation processes be established and pursued; and
  - (v) Continuous improvement of the GU&M Management Processes and System, especially at formative stages, be pursued.

- (c) What needs to be avoided with the implementation process is that the GU&M Processes:
  - (i) **Should not** be treated as a poverty relief programme whose objectives are invariably, short-lived and not always in tandem with the drive of looking after and maintaining the education facilities as an ongoing responsibility;
  - (ii) **Should not** be treated or dealt with as a project or programme, with a start and end but as an ongoing operational process (part of Facilities Management) that ought to last as long as the education facilities exist; and
  - (iii) **Should not** be managed through committees as the focus, constant availability, accountability, and continuity are compromised.

## 19.3 Details of Implementation Process

### 19.3.1 Setting up the Basic Education GU&M Management System

- (a) The following activities will be carried out by the DBE during the course of the 2018/2019 FY as a first step of the implementation process towards setting up the Basic Education GU&M Management System, leading to the Pilot Phase in the following financial years:
  - (i) Discussions with the Expanded Public Works Programme (EPWP) Section of the National Department of Public Works on the utilisation of EPWP Funds for appointment of Caretakers, Groundsman and General Cleaners; (Expected outcomes = agreement on the concept; agreement on the amount to be made available; agreement on the duration of funding; and agreement on the conditions and terms of engagement.);
  - (ii) Discussions with the relevant SETA on availing funds for training GU&M Field Staff. (Expected outcomes = agreement on the concept; agreement on the amount to be made available; agreement on the duration of funding; and agreement on the conditions and terms of engagement.);
  - (iii) Discussions with National Treasury on setting aside Emergency Funds for dealing with natural disasters and on the establishment of Insurance Arrangement to deal with natural disasters;
  - (iv) Secure the Computerised Maintenance Management Systems (CMMS) for collecting data and for carrying out data analysis during the Pilot Phase and beyond;
  - (v) Workshop the *GU&M Guidelines* to PEDs;
  - (vi) Secure and set aside GU&M Budget for the Piloting Phase that will commence in the 2019/2020 FY; and
  - (vii) Prepare and issue a Circular to District Offices, Circuit Offices, and Schools introducing the *GU&M Guidelines*, its provisions and the Implementation Process.
- (b) DBE and PEDs to set up GU&M Sub-units as part of their Infrastructure Units to manage GU&M activities during the Pilot Phase and beyond.
- (c) PEDs and DBE to identify facilities to be used for the Pilot Phase following the criteria set out under Sub-section 19.3.2 below.

### 19.3.2 The Pilot Process

- (a) The Pilot Process acknowledges the fact that the full implementation of GU&M by the sector is a relatively new process therefore there is a need to:
  - (i) Phase it in gradually to afford an opportunity to learn from the system and to review some of the provisions where needs be;
  - (ii) Manage some of the transitional issues; and
  - (iii) Obtain credible data that would enable refinement of some of the indices leading to system improvement.
- (b) The implementation of GU&M will be phased in over a 3-year period as follows:
  - (i) **Year 1 – 2019/2020:** Select about a quarter (1/4) of the existing education facilities to run the pilot, mainly to refine the indices, learn about location specific nuances, and to establish the operating system;
  - (ii) **Year 2 – 2020/2021:** Increase the size of the pilot to two thirds (2/3) of the existing education facilities to learn from increased scale of operations, and also to firm up on the indices.
  - (iii) **Year 3 – 2021/2022:** Full scale roll-out, closely monitoring the indices, location specific nuances.
- (c) Pilot to be ran equitably across all Provinces where the number of facilities to be included in the pilot would be a function of the existing number of facilities in the Province.
- (d) Facilities to be included in the pilot to:
  - (i) Be informed by their location (rural, farm, township, suburban and urban);
  - (ii) Consider different geographic locations (inland, coastal, and areas with extreme weather conditions – extremely hot and extremely cold);
  - (iii) Cover all types of facilities (e.g. ordinary schools, focus schools, LSENS);
  - (iv) Cover all sizes of facilities (micro, small, medium, large and mega); and
  - (v) Include old and newly built facilities.
- (e) In order for the Pilot Phase to be carried out successfully, the following will be required:
  - (i) Availability of resources as an input into the process to enable uninhibited pilot exercise; and
  - (ii) Dedicated resources at National and Provincial Level to carry out ongoing data collection and data analysis.
- (f) After the third year of piloting, the *GU&M Guidelines* would be revised to effect the changes following the lessons learned from the Pilot Phase.

### 19.3.3 Management of Maintenance Backlogs

- (a) The current practices on GU&M have led to humongous maintenance backlogs, which may be captured in the context of Deferred Maintenance.
- (b) GU&M works have to be carried out together with the Capital Improvement Works which are aimed at responding to the infrastructure backlogs such as eradication of schools built of inappropriate materials and provisioning of additional classroom spaces in school facilities.
- (c) The current financial resources and budget allocations will not enable the existing backlogs to be addressed overnight. Therefore prioritisation per the provisions of Section 16.4.7 should be pursued and this should be informed by:
  - (i) Identified Risk Factors;
  - (ii) The Learner Enrolment Figures; and
  - (iii) Whether the said facility is a candidate of near-future Capital Improvement Works.
- (d) Where other potential sources of funding have been identified per the provisions of Section 16.4.6, they would be used to address the existing maintenance backlogs.

### 19.3.4 Transitional Arrangements

- (e) The ***Guidelines for General Upkeep and Maintenance of Education Facilities*** shall be effective after they have been approved by the relevant approval structures in the basic education sector.
- (f) The introduction of the Pilot Phase as part of the implementation process should not and is not intended to imply stoppage of maintenance activities that were already underway on the facilities that are not part of the pilot process.
- (g) The *GU&M Guidelines* are not intended to introduce a mass programme on maintenance of education facilities but progressive implementation over a period of time, while appreciating the urgency of having all the education facilities maintained and well-looked after.
- (h) While there is urgency to address the current problems associated with the general upkeep and maintenance of Education Facilities, there is a need for pragmatism, objectivity and mindfulness with respect to the current changes and ability to deal with them and a change in the mind set to ensure repeatable success with implementation of the GU&M Processes.
- (i) The current budgeting approaches (Setting aside 20% of the EIG and about 25% of the School Allocations per NNSSF) to continue until sufficient data to enable refinement of matrices for GU&M activities in the sector has been obtained following the Implementation Plan under Section 19.3 above.

## 20. MONITORING AND EVALUATION

- (a) These *GU&M Guidelines* provide clarity to all the relevant roleplayers and stakeholders on what needs to be done to ensure a sustainable and successful process of looking after and maintaining the Education Facilities. However, what is critical is the effective implementation subject to availability of critical resources per Section 16.
- (b) It is therefore imperative that effective monitoring and evaluation processes be put in place at all operational levels.
- (c) The provisions of the *Norms and Standards for Education Facilities* on the Monitoring and Evaluation Protocols shall be applicable.
- (d) Of prime importance is a need:
  - (i) For all the Managers of Education Facilities to prepare GU&M Plans for the facilities they are responsible for;
  - (ii) For the appointed Facility Maintenance Co-ordinators (FMCs) to assess the condition of their Education Facilities using the Assessment Forms provided in Annexure B to gauge where they are and to use the outcomes to inform the GU&M Plans;
  - (iii) For the PEDs to produce Provincial Education Infrastructure Plans (PEIPs), that include consolidated GU&M Plans, for submission to the Minister on the dates to be communicated by the Minister;
  - (iv) Random site visits to selected Education Facilities by the DBE and PEDs to assess the degree of implementation, per the Implementation Plan under Section 19;
  - (v) Continued assistance provided by the DBE to PEDs on the implementation of the provisions of these GU&M Guidelines;
  - (vi) Submission of the PEIPs by the PEDs to the Minister for evaluation and monitoring; and
  - (vii) Submission of Annual Provincial Education Infrastructure Reports by PEDs to the DBE to assess progress made against the PEIPs.

## 21. SHORT TITLE

The short title for this document is: ***General Upkeep and Maintenance (GU&M) Guidelines***.

## 22. REVIEW OF THE GU&M GUIDELINES

- (a) The ***GU&M Guidelines*** would be reviewed after every three (3) years and/or as might be required from time to time.
- (b) Any suggested modifications, improvements should be forwarded to the Department of Basic Education for its consideration.

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## ANNEXURES

### Annexure A – Expected Service Lives of Various Components of an Education Facility

The Expected Service Lives of various components of education facilities, as exposed to natural environmental conditions and use by the learners.

ITEM	Period (Years)													
	0	5	10	15	20	25	30	35	40	45	50	55	60	
<b>Roofs &amp; Gutters:</b>														
• Roof covering:														
○ Galvanised Zinc sheets					■				■					■
○ Clay/Concrete Tiles											■			
○ Asphalt Shingles					■				■					■
• Roof trusses:														
○ Timber							■							■
○ Steel														■
• Ceiling:														
○ Drywall with skim coat						■					■			
○ Suspended					■				■					■
○ Metal						■					■			
○ Wood							■							■
• Gutters and downpipes:														
○ Aluminium					■				■					■
○ Galvanised metal				■			■		■					
○ PVC		■		■		■		■		■		■		■
• Skylights					■				■					■
<b>Walls:</b>														
• Face Brick														■
• Wall plaster - external							■							■
• Wall plaster – internal							■							■
• Drywall Partitioning				■			■			■				■
• Window frames:														
○ Wooden						■					■			
○ Steel							■							■
○ Aluminium							■							■
○ Vinyl				■			■			■				■
• Doors:														
○ Interior doors				■			■			■				■
○ Exterior doors (Meranti)							■				■			
○ Strong-room doors														■
○ Garage doors					■				■					■
○ Garage door openers			■		■		■		■		■			■
<b>Paint:</b>														
• Roof		■		■		■		■		■		■		■
• External Walls		■		■		■		■		■		■		■
• Window Frames			■		■		■		■		■		■	
• Internal Walls		■		■		■		■		■		■		■

ITEM	Period (Years)													
	0	5	10	15	20	25	30	35	40	45	50	55	60	
• Doors														
• Ceiling														
• Floors (Epoxy)														
• Road Markings (Epoxy)														
• Tennis / Basketball Courts														
<b>Floors:</b>														
• Concrete slab														
• Wooden floor														
• Floor Covering:														
○ Ceramic tiles														
○ Laminates														
○ Vinyl														
○ Carpets														
<b>Sanitation facilities:</b>														
• Toilets seats														
• Urinals:														
○ Stainless Steel														
○ Ceramic														
• Sinks:														
○ Stainless Steel														
○ Enamel cast iron														
○ Enamel steel														
○ China														
• Showers														
• Bath tubs														
○ Cast iron														
○ Fiberglass														
<b>Sewer System:</b>														
• Sewer pipes:														
○ Cast iron														
○ Vitreous Clay														
○ PVC														
• Manholes and covers														
<b>Plumbing:</b>														
• Water supply pipes														
• Plumbing fixtures														
• Water tanks:														
○ Corrugated iron														
○ uPVC														
• Drinking Fountains														
• Geysers/Boilers														

ITEM	Period (Years)													
	0	5	10	15	20	25	30	35	40	45	50	55	60	
<b>Electrical System:</b>														
• Distribution box						■					■			
• Wiring and electrical fittings			■			■			■				■	
• Light fixtures			■			■			■				■	
• Solar Panels					■				■				■	
• Wind Turbines					■				■				■	
• Lightening protection						■			■				■	
• Uninterrupted Power Supply			■			■			■				■	
<b>Fire Protection Systems:</b>														
• Fire extinguisher			■		■		■		■		■		■	
• Fire sprinklers					■				■				■	
• Fire hoses			■		■		■		■		■		■	
• Smoke detectors		■	■	■	■	■	■	■	■	■	■	■	■	
• Fire alarm		■	■		■		■		■		■		■	
<b>Safety and Security System:</b>														
• PA System			■				■			■			■	
• Window burglar-proof						■					■			
• Burglar-proof doors						■					■			
• Surveillance cameras		■	■	■	■	■	■	■	■	■	■	■	■	
• Panic buttons		■	■	■	■	■	■	■	■	■	■	■	■	
• Welded high tensile steel fence						■					■			
<b>HVAC System:</b>														
• Furnaces:														
○ Combustion (gas, oil)					■				■				■	
○ Electric Resistance					■				■				■	
• Thermostats							■						■	
• Heat Exchangers					■				■				■	
• Evaporator Coils					■				■				■	
• Condensing Units					■				■				■	
• Ductwork						■					■			
• Vents							■						■	
• Heating Systems:														
○ Gas			■				■			■			■	
○ Electric			■		■		■		■		■		■	
○ Hot Water /Steam			■		■		■		■		■		■	
• Ventilator		■	■	■	■	■	■	■	■	■	■	■	■	
• Air Conditioners:														
○ Centralised Ceiling			■				■			■			■	
○ Single Wall Units			■				■			■			■	
○ Window Units			■	■		■		■	■		■		■	
• Hot Water Boilers:														
○ Steel water-tube						■					■			

ITEM	Period (Years)													
	0	5	10	15	20	25	30	35	40	45	50	55	60	
○ Cast Iron														
○ Electric														
<b>Conveying Systems:</b>														
• Elevators														
• Elevator Door Operators														
• Escalators														
<b>Furniture, Fittings &amp; Equipment:</b>														
• Learner desks and chairs														
• Staff and Admin furniture														
• Dining-hall furniture														
• Library fittings														
• Laboratories:														
○ Equipment														
○ Furniture and Fittings														
• Main Kitchen:														
○ Equipment														
○ Furniture and Fittings														
• Technical Workshops:														
○ Equipment														
○ Furniture and Fittings														
• GUMRR Equipment														
<b>Sport and Playground Facilities:</b>														
• Grade R Playground and equipment														
• Sport Fields:														
○ Soccer and Rugby fields														
○ Cricket pitch														
○ Hockey pitch:														
- Grass														
- Synthetic Turf														
○ Tennis courts														
○ Swimming pool:														
- Deck														
- Plaster liner														
○ Basketball Court														
• Athletic Equipment														
<b>Grounds and Outdoor Amenities:</b>														
• Landscaping:														
○ Sprinkler heads														
○ Underground PVC pipes														
• Stormwater drainage:														
○ Concrete lined														
○ Interlocking pavers														

ITEM	Period (Years)													
	0	5	10	15	20	25	30	35	40	45	50	55	60	
○ Grass			■		■		■		■		■		■	
○ Unlined		■	■	■	■	■	■	■	■	■	■	■	■	
<b><i>Vehicular and Pedestrian Access Amenities:</i></b>														
• Driveways and Parking Lots:														
○ Gravel surface			■		■		■		■		■		■	
○ Asphalt				■			■			■			■	
○ Block paving				■			■			■			■	
○ Concrete					■				■				■	
• Concrete Walkways						■					■			
• Signage			■		■		■		■		■		■	
<b><i>Other:</i></b>														
• Termite Treatment		■	■	■	■	■	■	■	■	■	■	■	■	
<b><i>Whole Facility:</i></b>														
• Review of business imperatives							■						■	

## Annexure B – Assessment of General Upkeep and Minor Maintenance of Education Facilities

- (a) The Assessment Form for General Upkeep and Maintenance (GU&M) provided below should be used by the Facility Maintenance Co-ordinators to assess the level of compliance with the expected GU&M Standards for Education Facilities. This Form would also be used by Independent Assessors when Comprehensive Condition Assessment of Education Facilities are carried out.
- (b) The rating per each line item is reflected in the Table below.

GU&M Rating = Average Rating of Individual Items		
GU&M Rating		Description
5	Excellent	The Facility Component is well-looked after and well-maintained. General Upkeep and Maintenance of the facility needs to continue.
4	Good	The Facility Component is reasonably well-looked after and reasonably well-maintained. However, there is sluggishness in the system that needs to be tightened up.
3	Fair	The Facility Component is fairly well-looked after and fairly well-maintained. However, there are a number of areas that need to be attended to.
2	Poor	The Facility Component is poorly looked after and poorly maintained. There are major areas of concern that need to be attended to urgently.
1	Very Poor	The Facility Component is not looked after and not maintained at all. This is a catastrophic image that needs to be attended to as an emergency.

## Annexure C – Asbestos Exposure Risk Assessment Algorithm

### OCCUPATIONAL EXPOSURE ASSESSMENT / HUMAN RISK FACTORS:

Aspect Being Assessed	Sub-aspect <sup>1</sup>	Score <sup>2</sup>	Examples of Score Variables
<b>Normal Occupant Activity</b>	Main Type Activity	0	Rare disturbance activity (e.g. little used store room)
		1	Low disturbance activities (e.g. office type activity)
		2	Periodic disturbance (e.g. vehicular activity which may contact ACMs)
		3	High levels of disturbance (e.g. fire door with asbestos insulating board sheet in constant use)
<b>Likelihood of Disturbance</b>	Location	0	Outdoors
		1	Large rooms or well-ventilated areas
		2	Rooms up to 100m <sup>2</sup>
		3	Confined spaces
	Accessibility	0	Usually inaccessible or unlikely to be disturbed
		1	Occasionally likely to be disturbed
		2	Easily disturbed
		3	Routinely disturbed
	Extent / Amount	0	Small amounts or items (e.g. strings or gaskets)
		1	<10m <sup>2</sup> or <10m pipe run
		2	>10m <sup>2</sup> to ≤ 50m <sup>2</sup> or >10m to ≤ 50m pipe run
		3	> 50m <sup>2</sup> or >50m pipe run
<b>Human Exposure Potential</b>	Number of Occupants	0	None
		1	1 to 3
		2	4 to 10
		3	>10
	Frequency of Use of Area	0	Infrequent
		1	Monthly
		2	Weekly
		3	Daily
	Average Time Area in Use	0	< 1 hour
		1	> 1 to ≤ 3 hours
		2	> 3 to ≤ 6 hours
		3	> 6 hours

Maintenance Activity	Type of Maintenance Activity	0	Minor disturbance (e.g. possibility of contact when gaining access)	
		1	Low disturbance (e.g. changing light bulbs in asbestos insulating board ceiling)	
		2	Medium disturbance (e.g. lifting one or two asbestos insulating board ceiling tiles to access a valve)	
		3	High levels (e.g. removing a number of asbestos insulating board ceiling tiles to replace a valve or for cabling)	
	Frequency of Maintenance	0	ACM unlikely to be disturbed for maintenance	
		1	<1 per year	
		2	>1 per year	
3		>1 per month		

1 Average the scores obtained for Sub-aspects to arrive at a maximum score of 3 per Main Aspect;

2 Maximum Overall Human Risk Factor Score is 12;

### MATERIAL ASSESSMENT:

Aspect Being Assessed	Score <sup>2</sup>	Examples of Score Variables
Asbestos Type <sup>1</sup>	1	Chrysotile (White Asbestos)
	2	Amosite (Brown Asbestos) / Amphibole Asbestos excluding Crocidolite
	3	Crocidolite (Blue Asbestos) and mixtures or if Type is unknown
Product Type	1	Asbestos Cement, decorative coatings, composite materials (plastic, resins, Roof sheets, vinyl floor tiles)
	2	Insulation Boards, millboards, textiles, gaskets, ropes, etc.
	3	Thermal Insulation, sprayed asbestos, loose insulation, etc.
Surface Treatment	0	<b>Composite</b> Materials (plastics, resins, vinyl floor tiles, etc.)
	1	<b>Unsealed</b> Asbestos Cement, <b>Sealed</b> Insulation Boards, etc.
	2	<b>Unsealed</b> Insulation Boards, etc, <b>Sealed</b> thermal insulation, sprayed coating, etc
	3	<b>Unsealed</b> thermal insulation, sprayed asbestos, loose insulation, etc.
Extent of Damage and Deterioration	0	No visible damage
	1	Low Damage (a few scratches, or surface marks, a few broken edges on boards, tiles, etc.)
	2	Medium Damage (significant breakage, several small areas of damage revealing asbestos fibres)
	3	High Damage or Delamination (visible asbestos debris)

1 If uncertain about type of asbestos used, assume Crocidolite;

2 Maximum Overall Material Score is 12;

### SUMMARY SCORES:

Aspect Being Assessed	Risk Score
Human Factor Risk Score (maximum is 12)	
Material Risk Score (maximum is 12)	
<b>TOTAL = Overall Risk Score (maximum is 24)</b>	

**OVERALL RISK SCORE:**

Overall Risk Score (Combined Human Risk Assessment and Material Risk Assessment)	Level of Risk	Action
18+	High Risk	Immediate Action
13-17	Medium Risk	Near Term Action
9-12	Low Risk	Regular Inspection
8 or below	Very Low Risk	Annual Inspection

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